PHANTUM PHYSICS: How Physics Metamorphosed into Voodoo-Physics

(Mathematical Deception, Conceptual Faux Pas, Logical Contradictions, Disregard of Reality, Modeling Oversights, and Experimental Misinterpretations)

> Bandula W. Dahanayake Farmfield Crescent, Kanata, ON, Canada Bandula_Dahanayake@yahoo.com

Abstract—There cannot be a quantum without an address. A quantum without an address is a Phantom. Modern Physics is Phantom Physics. Quantum Mechanics is Phantum Mechanics. Nothing in nature can come in quanta. Vectors cannot come in quanta. The metamorphosis of Physics into voodoo Physics started with Einstein's preposterous Special Relativity, Planck's nonsensical energy quanta, and their offshoot mysterious phantom Quantum Mechanics. Planck's energy quantum e=hf is an arbitrary substitution in desperation that lacks any physical meaning. Special Relativity is a result of blindness to reality. mathematical oversight/deception, and logical and conceptually faux pas. When Special Relativity is false, the whole of Modern Physics falls. Einstein would have realized the mockery of Special Relativity if he had considered a beam of light at an angle in a moving train. Constancy of the velocity of light relative to observers is natural and does not require Special Relativity. Planck's meaningless energy quantum conjecture is not required for Spectrum derivation. Blackbody Quantum Mechanics is not required for electrons to orbit without radiation loss. Uncertainty breeds radiation, not prevents it. If a particle is assumed to behave as a wave, the Position Operator cannot be chosen to be the position itself and vice versa. If the position and momentum of a particle is assumed to behave as a wave, the Position and Momentum Operators commute and Quantum Mechanics ceases in its foundation. Time is not relative. Time is independent of speed and gravity. Clocks do not determine time. Mass does not depend on its speed. Time and mass are absolute, observer independent. Propagation of light is not relative. Light does not propagate relative to observers. Observers cannot derail trains. Galilean Relativity is incorrect because it derails trains. Special Relativity is invalid because it derails light. Observers cannot bend light. Gravity cannot bend light. The direction of a moving entity cannot be altered relative to observers. No physical change can take place relative to observers. What takes place relative to an observer is the displacement of an entity against the motion of the observer. If mass is relative, the energy is not real and not unique. Split of a nucleus cannot cause a mass loss. A mass at rest

cannot have rest kinetic energy. There is no relativistic energy. There is no negative energy. The proclaimed new particle discoveries in Particle Accelerators based on the Special Relativity and Uncertainty Principle are not real; they are bogus since Special Relativity, relativistic energy, and Uncertainty Principle themselves are invalid; they are mathematical and conceptual blunders. Fundamental particles of nature cannot be obtained by colliding charge particles. Lorenz Transform cannot transform Maxwell equations for propagation of light onto inertial frames. Lorentz Transform and Special Relativity are not equivalent. Path of light is unaltered relative to observers in the Lorentz Transform as it should, whereas the path of light is mistakenly altered relative to observers in Special Relativity. Mass and energy are not equivalent. Mass has nothing to do with the speed of light. Mass cannot be converted to energy. Mass is conserved. Mass cannot warp space even if space is warpable. Space is not warpable. There is no acceleration without motion. Gravity and acceleration are not the same. Gravity cannot bend light. Gravity has no effect on the massless. General Relativity is invalid. Arthur Ellington unscrupulously misinterpreted solar eclipse data to falsely justify General Relativity, pure deception. A mass has no effect on space, the massless. Space has no effect on a mass. Planck's spectrum is cavity dependent. Plank's conjecture e=hf with the universal constant h is meaningless since frequency has no existence without amplitude. For an oscillating mass of frequency f, the e=hf with h that is a function of the amplitude and mass is the average energy per unit cycle, not an energy quantum; it does not apply to light, the massless. Planck's e=hf is meaningless for light. Coherent light cannot consist of spatially random photons. The interaction of light with matter is not collisions of momenta. Compton's wavelength derivation is invalid; pseudo mathematical nonsense. Light has no interaction with electrically neutral particles. Einstein's photon derivation is invalid. Light has no mass, no energy, no heat, no temperature, no entropy. Boltzmann entropy is not applicable to light. Particle waves and wave particles are oxymorons. Light bursts that are released by a source are not particles. Particles of momentum cannot propagate. Particles of momentum cannot

have a constant speed under gravity. Particles are not waves. If a particle has a constant momentum, the claim that momentum behaves as a wave is self contradictory. If the momentum of a particle behaves as a wave, it implies that the momentum is not a constant. The position and momentum of a particle cannot behave as waves. Oscillation of an electron in its orbit is not a propagating wave. When a moving electron of momentum p is stopped, it generates electromagnetic waves of wavelength proportional to 1/p; it is these waves that generate an interference pattern in the Double-Slit experiment, not some hypothetical particle waves. There are no particle waves or de Broglie waves. The Schrodinger equation has no existence and it is meaningless since the oscillation of an electron in its orbit is not a propagating wave, Planck's phantom quantum e=hf does not exist and it is meaningless for a particle moving at constant speed, the position and momentum cannot be probabilistic if the Position Operator is given by the derivative with respect to the position, and the Position Operator cannot be the position itself it a particle behave as a wave. The assumption that a particle of constant momentum behaves as a wave is self contradictory. Spin is bipolar. Bipolar Spins cannot come in Unipolar Up and Down quanta. Up and Down have no existence without observers. Spin cannot come in Up and Down quanta since Up has no existence without Down and vice versa. Spins have nothing to do with Probability. Observer dependent and external magnetic field dependent direction of the Spin is not a property of a particle. Bell's theorem is invalid, and meaningless. Neutral particles have no Spin Magnetic Moment. Mystical Spin quanta is a result of Stern-Gerlach experimental misinterpretation. The split of a beam of Atoms into Up and Down beams in the Stern-Gerlach experiment is deterministic. The interpretation of the interference pattern in the Double-Slit experiment as a particle behaving as a wave and going through both slits simultaneously is voodoo Physics, not science, simply preposterous. Pauli's Matrices are not Operators of 2D Spin Observables. If Spin is represented by Pauli's 2D Matrices, the Spin is no longer an Operator of an Observable. Matrices cannot be Operators in Quantum Mechanics. Matrices cannot comply with the non-commutation relationship that is fundamental to the foundation of Quantum Mechanics. Dirac equations are false since Special Relativity is false. Mathematical polarity symmetry in equations does not necessitate physical polarity symmetry. Antimatter is a result of Anderson's cloud chamber experimental misinterpretation. Two spirals with unequal spiraling rates cannot represent electron-positron pairs. Positrons are not real. Antimatter is not real. Phantom Positrons are а hypothetical intermediary step in an explanation; they are not

observables. There are no positrons. Positron Tomography does not involve real Positrons. Electron Microscopes have nothing to do with particle waves. Matter and antimatter cannot pop up in a vacuum. Any hypothetical matter popping up from a vacuum is voodoo matter, not real. There is no antimatter. There is no negative energy. There is no vacuum energy. There is no dark energy. There is no dark matter. Gravitational waves are fantasy waves. A single field cannot propagate. Propagation requires a conjugate pair of fields. Gravity cannot be a wave. A disturbance cannot be created in a single field. There are no gravitons. LIGO is a theoretical misconception and an experimental deception. The Higgs field cannot exist. A sourceless single field cannot exist. There are no Higgs Bosons; they are hypothetical, not observables. The claim that Higgs Bosons were found in Particle Colliders is bogus; a deception. Spin cannot be quantized. Spin is a property of an orbiting system. A particle that has not been ejected from an orbiting system has no Spin. Massless has no Spin. There are no 1/2 Spins or integer Spins. Spin Magnetic Field is static. Light has no Spin. There are no Bosons. If the universe is anything other than 3D, no species can function. Every species has its own detector for determining the dimensions of the universe. The dimension of the universe is ingrained in our ears. Universe is 3D, not 4D or any other D. The concept of Universe expansion is bogus and it is a result of redshift misinterpretation. Space cannot expand. Expanding space cannot alter the distances between gravitationally bound galaxies. Expanding space cannot stretch wavelengths. Nothing is anchored to space. Hubble's Law is meaningless nonsense, a result of observation misinterpretation. The redshift of a star cannot be attributed to a radial motion of galaxies, cannot be attributed to a Doppler effect, and cannot be attributed to a universe expansion. The increasing redshift with time cannot be attributed to an acceleration of the universe. Increasing redshift is due to the increase of the medium density near the stars with time. The Cosmic Microwave Background (CMB) is due to the oscillation and collision of sparse charged particles in space, not a remnant of Bigbang. There will not be a CMB if the space is a vacuum. There was never a Bigbang. The precision of momentum is directly related to the precision of position by the definition of momentum, not inversely. If the position and momentum of a particle are Operator probabilistic, the Momentum is undefined. The position and momentum of a particle of mass cannot be a Fourier Transform pair. The Heisenberg Uncertainty Principle is contradictory and reality blind. The Schrodinger equation is meaningless since the oscillation of electrons in its orbits are not propagating waves and e=hf is meaningless. Frequency has no energy. Bohr's Atomic Model that requires an

electron to disappear from one orbit and reappear in another orbit is voodoo Physics, not science. There is no radiation without the loss of momentum, and an orbiting electron on its circular orbit with constant momentum does not radiate. Gravity and acceleration are not the same. There is no acceleration without motion. Einstein's Equivalence Principle invalid. is General Relativity is false. Lenard's and Millikan's photoelectric experiments are incomplete and conclusions are incorrect; they did not carry out the experiments for varying amplitudes. You cannot alter the amplitude of light by dimming a light source. Dimming of a light source only alters the rate of light burst. Bipolar spins cannot have unipolar Up and Down quanta. There are no 1/2 or integer Spins. Polarization of light is Unipolar. Polarization is not the same as Spin. Spin Magnetic Moment is static. Light has no Spin. Every magnetic field is not a Spin. Every Spin does not generate a magnetic field. Waves are not particles. There are no Bosons. Pauli's Spin matrices are not Operators of Observables. Observers cannot bend light. Gravity cannot bend light. Gravity cannot shift frequency. Gravity cannot alter time. Gravity has no effect on the massless. Dark matter is not real and it is a result of underestimation of the star orbiting systems. Universe is not expanding and hence Dark energy is not required. Galileo derailed trains. Einstein derailed light. A train cannot derail relative to observers. A moving arrow cannot tilt relative to observers. Observers cannot bend light. Gravity cannot bend light in a vacuum. The position and momentum of a particle must be unique. Velocity of light is unaltered relative to observers naturally. Velocity of light is observer independent. No Special Relativity is required. There cannot be a quantum without an identifier. You cannot quantize an entity without providing means for the quanta to function as a whole. Nothing in nature can come in quanta. Light cannot consist of photons. Light bursts are not particles. Particles of mass are not waves. Energy quantum e=hf is meaningless. The position and momentum of a particle must be unique and cannot be a wave. Vectors cannot come in quanta. Special Relativity and Quantum Mechanics are invalid. pseudo-mathematical, and unnecessary. Modern Physics that disregards reality and functions as a religion is not science. Physicists have turned a blind eye to mathematical, conceptual, and experimental fallacies of Modern Physics; they are making every effort to discredit critiques, prevent the publication of the critiques, and hold onto the text of Modern Physics as a religious text since it is their provider of bread and broccoli. Modern Physics is in dire need of both theoretical and experimental overhaul. The Stumper in Modern Physics is how the Physicists who have chosen to remain blind to the metamorphosis of realistic Physics, Astrophysics, and Cosmology into Voodoo Physics can call themselves scientist shamelessly. Physicists are sciencing in the dark. Voodoo Physics is not Physics. Modern Physics is a Boondoggle.

Keywords— Eigenvalue; Quantum Mechanics; Operator; Entanglement; Particles; Polarization; Photon; Light; Einstein; Schrodinger; Heisenberg; Orbit; Stern-Gerlach; Special Relativity; General; Bohr;Spin; Double-Slit;

I. INTRODUCTION

Light does not come in light quanta or photons of energy e=hf. If light comes in light quanta or photons of energy e=hf, the energy of a continuous spectrum will be infinite since there are infinite frequencies between any two frequencies. If light consists of photons of energy e=hf, spectrum cannot be continuous. If the spectrum is continuous, light cannot consist of energy quanta or photons of energy e=hf. Plank's blackbody spectrum and his conjecture e=hf for deriving it are mutually contradictory, e≠hf. The energy in an energy quantum cannot vary linearly with frequency. The energy in an energy quantum cannot reach infinity when frequency reaches infinity. The energy in an energy quantum must be finite at any frequency, e≠hf.

Einsteins' light quanta or photons are a result of theoretical and conceptual blunders, $e \neq hf$. Einstein's photon derivation is invalid since light has no entropy in a vacuum. The massless has no entropy, no temperature, no heat, no momentum, no energy. Light has no mass. Light has no momentum. Propagation of light cannot be relative. A stationary mass does not have speed c relative to light since light has no standstill existence, e≠mc². Planck's blackbody spectrum is invalid and it is dependent on the geometry of a cavity. Plank's energy quanta e=hf is meaningless and has no existence since frequency has no independent existence. The claim that a wave behaves as a particle at high frequencies and remains as waves at low frequencies is meaningless since there is no criteria for nature to determine the critical frequency above which a wave behaves as particles. There is no reason for Einstein to claim that waves behave as particles at high frequencies except that Einstein's derivation of protons required for him to use Wein's blackbody Spectrum that is limited to high frequencies. Nature has no means in determining the critical frequency that it should start to behave as a wave for it to comply with Einstein's claim. Einstein's derivation of photons is invalid since light has no entropy in a vacuum cavity [8]. Particles cannot propagate. Light is never a particle. Light bursts are not particles.

Now the question is what does the e=hf represent? Does e=hf represent any physical quantity of energy? In reality, the energy e=hf represents the energy per cycle of an oscillating mass at frequency f. The h is not constant and depends on the mass of the oscillating object and the amplitude of the oscillation [19]. Planck's constant h is not a universal constant. Energy e=hf is not an energy quantum and it is simply the energy per cycle of an oscillating mass of frequency f for all the frequencies, not limited to high frequencies. The e=hf with h that is dependent on the mass and the amplitude of an oscillating charge particle is the transfer of average energy per cycle from an oscillating electron at one location to an another electron at a distance via electromagnetic waves generated by an oscillating particle. The energy Transformation factor h is not a constant. Light has no energy. Frequency has no energy. Energy is the kinetic energy of particles of mass. Kinetic energy has no meaning for light. Energy e=hf is meaningless for light; it does not apply for light [19].

An electron can oscillate at the frequency of electromagnetic waves up to a certain frequency. However, as frequency is increased, there comes a frequency limit beyond which the oscillation of a charged particle of mass cannot follow the frequency of electromagnetic waves linearly. As a result, there cannot be a linear relationship e=hf for the transfer of energy and frequency for all frequencies. As the frequency f approaches infinity, energy e cannot approach infinity as it does in e=hf. Frequency has no existence without amplitude. Kinetic energy has no existence without mass. Energy must be a function of amplitude of oscillation and mass, $e \neq hf$.

The claim in Physics that the Millikan's and Lenard's photoelectric experiment confirms that light comes in light particles or photons of energy e=hf is Millikan's and Lenard's photoelectric false experiments cannot substantiate Einstein's photon theory since they did not carry out the experiments for varying amplitudes. Amplitude of light cannot be altered by dimming a light source. A dimmer controls the rate of light bursts emitted by a source. The intensity of a light at the source is determined by the rate of light bursts. Amplitude of light at a source is constant; we cannot change the amplitude of light at the source. The intensity at a destination is determined by both amplitude and the burst rate of light. The intensity of light varies as light propagates since the amplitude of light undergoes attenuation along the path. So, the intensity of light at any point along the path varies due to the attenuation while the burst rate remains unaltered. Light also undergoes a wavelength shift in the presence of a changing medium along the path; the frequency of light remains unaffected.

Lemma:

Spin is Bipolar. A Bipolar Spin cannot have unipolar Up and Down. Up has no existence without Down. Down has no existence without Up. There are no Spin Monopoles. Spin cannot be quantized into Up and Down without Spin Monopoles. Spin-Up or Spin-Down is an observer's perception, not a state of a Spin.

Lemma:

Up or Down Spin cannot have orthogonal x, y, and

z axes components that are also Up or Down. Pauli's 2D Spin Matrix Operators have no existence. Matrix Spin Operators of any dimension representing x, y, z orthogonal axes components of an Up or Down Spin independently as Up or Down cannot exist.

Lemma:

Frequency has no energy. Planck's conjecture e=hf, where h is a constant, cannot hold since the frequency f has no independent existence. Frequency f has no existence without amplitude and the energy e has no existence without an association with particles of mass m, $e\neq hf$. There is no energy without an association of a mass.

Lemma:

Light has no energy, no momentum, not entropy, no temperature. Electromagnetic potential energy that light has is not energy unless it is converted to kinetic energy of charge particles of mass. Light has no interaction with electrically neutral particles. Interaction of light with a mass is not a collision of momenta since light has no momentum.

Lemma:

If energy is quantized as Planck's conjecture e=hf, where h is the Planck's constant and f is the frequency, then, the energy of even the narrowest band frequency spectrum will be infinite since the frequency spectrum is continuous. If energy comes in quanta e=hf, the frequency spectrum cannot be continuous. Energy cannot be quantized as e=hf. Planck's blackbody spectrum is cavity dependent, $e\neq$ hf. Frequency has no energy unless it is converted to energy.

Lemma:

Up or Down of a Spin that has no existence without an observer cannot be a state of a Spin of a particle. For an entity to be a state of a particle, that entity must have an observer independent existence. The 3D direction of a Spin exists physically but Up or Down has no physical existence since Up and Down are observer impressions.

Lemma:

A Spin that is Up for one observer and Down for another observer cannot come in Up and Down quanta.

Theorem:

If A and B are two observables such that A has no existence without B and B has no existence without A, then, there cannot be a quantum of A and a quantum of B. A and B cannot be represented by orthogonal basis-vectors.

Lemma:

Although Atoms are electrically neutral, an Atom has a Spin Magnetic Moment (SMM) since an Atom is an orbit system of charge particles.

Lemma:

The neighboring Atoms in a beam of Atoms are magnetically coupled due to the Spin Magnetic Moment of Atoms, (Up, Down, Up, Down, ...). The Stern-Gerlach Magnetic Field splits an incoming (Up, Down, Up, Down, ...) beam into an Up beam (Up, Up, Up, ...) and a Down beam (Down, Down, Down, Down, ...). The number of Atoms in the Up split beam is the same as the number of Atoms in the Down split beam in the Stern-Gerlach Device; this is an indication that there is absolutely no probability involved in the beam splitting of the Stern-Gerlach Device. Nature does not do probability.

Corollary:

If probability is involved in the beam splitting of the Stern-Gerlach Device, the number of Atoms in split beams cannot be equal regardless of the number of Atoms in the incoming beam. The number of Atoms in the Up and Down split beams are equal.

Lemma:

Both Stern-Gerlach and Double-Slit experiments have no effect on the electrically neutral beam of particles. Electrically neutral particles have no Spin Magnetic Moment. Stern-Gerlach Device cannot split a beam of electrically neutral particles into Up and Down split beams. Stern-Gerlach splits a beam of charged particles into two spirals, an Up spiral and a Down spiral. It is only a beam of Atoms that is split into two linear beams, an Up beam and a Down beam by the Stern-Gerlach Device. Double-Slit experiment cannot generate an interference pattern for a beam of electrically neutral particles. This is a clear indication that the result of both the Stern-Gerlach and Double-Slit experiments have nothing to do with momentum of particles. A particle with momentum cannot behave as waves or generate waves.

Lemma:

Polarization of light is not a Spin. Polarization is Unipolar. Spin is Bipolar. Polarization of light cannot be used to simulate Spin of a particle. Spin Magnetic Moment (SMM) is static. The propagating Magnetic Field of light is not a Spin. An Oscillating Magnetic Field has no Up or Down. The oscillating Magnetic Field of propagating light has no Up or Down. Horizontal and Vertical Polarization is not Spin-Up and Spin-Down. Horizontal and vertical polarization are orthogonal. Spin-Up and Spin-Down are not orthogonal. Spin-Up and Spin-Down are opposite of each other. Horizontal and Vertical Polarization are not opposite of each other.

Lemma:

Spin-Up and Spin-Down are perfectly correlated negatively; they are not orthogonal and cannot be represented by orthogonal basis-vectors. Horizontal and Vertical polarizations are mutually uncorrelated; they are orthogonal and can be represented by orthogonal basis-vectors.

Corollary:

Horizontally and Vertically Polarized light cannot be used to simulate the Up and Down Spins of an Atom or a charge particle. Digital-Bits based on Horizontally and Vertical Polarization of light are not Quantum Bits or Q-Bits. They are Optical Bits or O-Bits.

Lemma:

Spin is not a fundamental property of a particle. Spin is a fundamental property of an orbiting system. If a particle has a Spin, that is because it is an ejected particle from an orbiting system. Every particle in an orbiting system has a Spin; an ejected particle from an Orbiting System carries its Spin with it.

Lemma:

Every Spin does not have a Spin Magnetic Moment. Every Magnetic Field is not a result of a Spin. A Spinning charge particle has a Spin Magnetic Moment. Spinning electrically neutral particles do not have a Spin Magnetic Moment. Even though an Atom is electrically neutral, an Atom has a Spin Magnetic Field since an Atom is an orbiting system that contains orbiting charge particles.

Lemma:

Horizontal Polarization (HP) and Vertical Polarization (VP) are not Up and Down Spins. HP can exist without VP. VP can exist without HP. However. Up has no existence without Down. Down has no existence without Up. HP and VP are orthogonal. Up and Down are perfectly correlated negatively. A HP wave and a VP wave can be in a superposition since they are separable. However, a single wave cannot be both HP and VP simultaneously. Up and Down Spins cannot be in a superposition since they are non-separable. If there are two entities such that one entity has no existence without the other, then, those two entities are non-separable and cannot be in a superposition.

Fallacy of Einstein Relativity:

Einstein conceptualized Special Relativity by firing hypothetical light pulses vertically from the bottom of a moving train and illustrating the path relative to the moving train as vertical and the path relative to an external observer as angular [10,4,5]. In other words, Special Relativity started with the false assumption that the propagation of light is relative and behaves as golf balls. It is the vertical beam of light in a moving train thought experiment and its invalid representation of the path of light relative to the passengers and external observers that gives the light a false hypothetical momentum and hence an equivalent mass to light. Entities that have no standstill existence have no momentum. Any entity with momentum must be stoppable. Light has no standstill existence and hence cannot have momentum. The massless has no momentum.

In conceptualizing Special Relativity, Einstein considered a vertical beam of light in a moving train. If

Einstein had considered a beam of light at an angle θ to the direction of motion of the frame, he should have realized the mockery of Time dilation and Special Relativity [15]. Einstein's Time Dilation Factor or Relativity Factor γ depends on the angle θ . If time is falsely assumed to be relative, time will be directional and depend on the angle θ to the direction of motion of the frame. Light is not relative and does not behave as golf balls. Light does not propagate relative to observers.

Einstein used the Lorentz Transform deceivingly to transform Maxwell equations onto inertial frames to justify his claim that light is relative and behaves as golf balls. The Lorentz Transform cannot transform the propagation of light onto inertial frames [16,4]. The Lorentz Transform only transforms the trivial solution of the Maxwell equations, which is the static electric and magnetic fields. The Lorentz Transform has no existence.

The Lorentz Force does not apply for propagating electromagnetic waves [16]. The force F=q(E+vB) applies only for a charge q moving at speed v in static electric field E and static magnetic field B, where the directions of v, E, and B are mutually orthogonal. F=q(E+vB) does not apply for a charge particle in a propagating electromagnetic field.

Although coherent light can never be spatially random particles [8], Einstein stipulated [10] incorrectly that light consists of spatially random particles that later came to be known as photons of energy e=hf, where h is the Planck constant and the f is the frequency. Energy relationship e=hf cannot hold since frequency has no independent existence. Frequency has no existence without amplitude. If light comes in photons of light quanta of energy e=hf, the light spectrum cannot be continuous. Planck's continuous Blackbody Spectrum and bizarre quantum energy e=hf conjecture are mutually contradictory.

Lemma:

The energy e=hf is not an energy quantum. The e=hf is the average energy per unit cycle of an oscillating particle of mass at frequency f. The h here is a function of the oscillating mass m and the amplitude of the oscillation.

Lemma:

The average energy per unit cycle that is transferred by an oscillating source charge particle of charge q_s , mass m_s , and frequency f_s to a distance destination charge particle of charge q_d , mass m_d , and frequency f_d through the radiation waves generated by the oscillation of the source charge particle is given by e=hf. The h here is a function of q, m, and f of both source particle and the destination particle.

If light is falsely assumed to be relative and consists of photons that behave as golf balls, then, a photon of a false momentum \mathbf{p} travels from the start at the speed of light c with energy e=pc. Unlike a particle of mass m, hypothetical photons do not have to accelerate from standstill to reach the constant speed

c. A particle of mass m cannot start with a constant speed from the start. It is the application of e=pc directly to a particle of mass m and momentum p that led to de Broglie waves or particle waves. The relationship e=pc that is derived for a hypothetical light particle or a photon of hypothetical momentum p cannot be directly extended to particles of mass since the energy of a particle of mass m, and momentum p, $e=p^2/2m$, is not the same as the energy of a hypothetical photon of a hypothetical momentum p, e=pc. The energy of a particle of mass m and momentum p is $e=p^2/2m$, not e=pc.

Lemma:

The momentum p in the energy of a hypothetical photon e=pc cannot be replaced by the momentum of a particle of mass m. The energy of a particle of mass m has nothing to do with the speed of light c unless the particle itself is traveling at the speed of light c. For a particle of mass $e\neq pc$.

If light is falsely assumed to be relative as Einstein did, then, a rest mass m has speed c relative to light and hence relative to light, a mass has kinetic energy or so-called rest energy e=mc². Propagation of light is not relative. Maxwell equations cannot be transformed onto inertial frames. [16,4]. Light has no standstill existence and hence a rest mass cannot have speed c relative to light and hence cannot have energy $e=mc^2$ relative to light, $e\neq mc^2$.

A mass cannot have a constant speed from the start. A mass at rest cannot have kinetic energy and no mass can have speed c relative to light since light has no standstill existence, and hence Einstein's rest energy of a mass is false and meaningless, $e \neq mc^2$. The rest kinetic energy $e=mc^2$ is an oxymoron. A mass m cannot have energy $e=mc^2$ unless the mass is moving at speed c from the very start. A stationary mass cannot have speed c and hence cannot have rest energy $e=mc^2$ relative to light since light is not stoppable.

A stationary obese person is not going to lose/gain weight just because the obese person has a speed relative to a runner. Relative speed of a stationary object does not give the object energy. Further, the path of a moving object cannot be altered relative to a runner. Trains do not derail relative to observers. A mass has no speed c relative to light. The path of light is unaltered relative to runners. Observers cannot derail light. Einstein's Special Relativity derailed light. Galileo Relativity derailed trains. Observers cannot derail trains.

The energy, which is the kinetic energy, has no existence without a mass. Speed of light c has nothing to do with the kinetic energy of a mass unless it is traveling at speed c. A mass at rest cannot start traveling at constant speed c, $e \neq mc^2$. You cannot create mass by dividing the energy by c^2 , $m \neq e/c^2$. If there is energy e, that energy e is present in association with a mass. There is no massless energy. Light has no mass. Light has no mechanical

energy What light has is the electromagnetic potential energy. Electromagnetic potential energy is not energy unless it is converted into kinetic energy of a charge particle. Mass and energy are not equivalent, $e\neq mc^2$.

Mass cannot be converted to energy since energy has no existence without mass. Mass must be conserved. Generation of electromagnetic radiation does not constitute a mass loss. The interaction of a mass with light does not generate a mass. If those hypothetical photons had momentum, we would be flat on the ground by its heavy punch. If a hypothetical photon has a mass $m=hf/c^2$, then the mass of the light spectrum would be infinite.

Atomic energy is not a result of a mass loss. Atomic bomb has nothing to do with Einstein's hypothetical e=mc². Split of Atomic nucleus does not result in a mass loss. What is released as a result of split of nucleus is the high frequency the electromagnetic radiation, which is massless, that has no energy but can generate energy on charge particles. The mass is conserved in a closed system. Momentum of charged particles is not conserved in of light. the presence The generation of electromagnetic radiation does not result in a mass loss.

An entity that cannot be brought to a stop cannot have momentum, cannot have a mass. The massless cannot have momentum. Light has no momentum. Light has no energy. Light can generate momentum on charged particles. Light is a momentum generator on charge particles. Light has no effect on neutral particles. There is nothing preventing a mass exceeding the speed of light. Speed of light cannot limit the speed of an object of mass. Speed of light is not the speed limit of the universe.

The energy of a particle of mass m with momentum p is not given by e=pc. The energy of a mass m with momentum p is $e=p^2/2m$. If $e=mc^2$ is represented as e=pc, then, p=mc and the p here is not a momentum of mass m at any speed u. For a mass m traveling at speed u, p=mu and $e\neq pc$, $e=p^2/2m$.

For e=hf to be a valid relationship, both energy e and frequency f must have independent existence. Energy, kinetic energy, has no existence without mass. Frequency has no existence without amplitude. And hence, energy cannot be given by e=hf. Planck's energy quantum e=hf is invalid, it cannot exist. If energy is quantized as e=hf, the frequency spectrum cannot be continuous. If the energy is quantized as e=hf, the energy of even the narrowest band continuous spectrum will be infinite since there are infinitely many frequencies between any two distinct frequencies. Continuous frequency spectrum and e=hf are mutually contradictory.

Planck's blackbody spectrum is cavity dependent. Blackbody spectrum cannot be cavity dependent [19]. You cannot derive the blackbody spectrum by analyzing the number of different modes a cavity can occupy just as you cannot estimate the number of guests in a hotel by analyzing the maximum number of people each room in a hotel can occupy. The derivation of blackbody spectrum does not require the Planck's conjecture e=hf. Planck's continuous blackbody spectrum and the conjecture that energy is quantized as e=hf are mutually contradictory. Spectrum of light through a blackbody cavity is continuous. Spectrum inside a blackbody cavity is discrete. The continuous spectrum observed through a blackbody cavity cannot be obtained by analyzing the discrete spectrum inside the cavity [19].

Coherent light cannot be a collection of spatially random particles or photons [8]. Directional light cannot consist of spatially random photons or light quanta. Spatially random particles cannot produce coherent beams of light. Without the assumption of spatial randomness, there are no photons or particles of light. Light in a vacuum has no entropy, no temperature, no energy, no heat. Boltzmann's entropy does not apply to light in a vacuum. Einstein's of photons or light quanta using derivation Boltzmann's entropy is invalid. Boltzmann entropy cannot be applied to light in a vacuum. The claim that light behaves as waves at low frequencies and as frequency is increased light behaves as particles, photons, or light quanta of energy e=hf is simply preposterous. At what critical frequency do the waves become particles and why?

Wein's blackbody spectrum that Einstein relied on deriving photons applies only for high frequencies. So. Einstein had no option but to concoct the false claim that light behaves as particles at high frequencies. Einstein's photon derivation does not work for any other blackbody spectrum. The fact is that Einstein's photon derivation does not apply even for Wein's blackbody spectrum since coherent light cannot consist of spatially random photons or light quanta, and photons in a vacuum have no entropy, and hence Boltzmann entropy does not apply. Without Boltzmann entropy and Wein's blackbody spectrum, there will be no photon derivation for Einstein. Light in a vacuum has no entropy. Einstein's photon derivation is invalid. The behavior of light is always a wave irrespective of frequency. Particles cannot propagate.

Lemma:

If energy is quantized as e=hf, the frequency spectrum cannot be continuous. A continuous frequency spectrum and Planck's energy quanta e=hf are mutually contradictory. If energy comes in quanta e=hf, the energy of even the narrowest band continuous frequency spectrum will be infinite since there are infinitely many frequencies between any two frequencies. [19].

Lemma:

If hypothetical photons have a hypothetical mass $m=hf/c^2$, then the mass of even the narrowest band of light will be infinite.

Lemma:

Frequency has no energy, e≠hf. Electromagnetic frequency has no energy unless frequency is converted to the kinetic energy of charge particles.

Electromagnetic waves have no interaction with electrically neutral particles.

Lemma:

Frequency has no existence without amplitude and hence energy cannot be given by e=hf. Planck's e=hf is invalid.

The communication between two charged particles is claimed to be by the exchange of photons. Photons are considered to be the disturbance of the static electric field between two charges. Static electric field is single. A single field cannot be disturbed and hence photons as a disturbance of a single field cannot exist. However, a moving charge generates electromagnetic waves. The moving charge cannot exchange these generated electromagnetic waves to communicate with other charge particles. Once generated, these generated electromagnetic waves have no attachment to their source. The generation of electromagnetic waves by a moving charge does not alter its static electric field. The motion of a charge particle cannot distort its static electric field. Static electric field exists relative to the charge particle and hence the static field is unaltered by its motion.

Gravity is claimed to be a result of exchanging the gravitons. Gravitons are considered to be the disturbance of the gravitational field between two masses. Gravitational field is single. A single field cannot propagate. A single gravitational field cannot be disturbed and hence gravitons as disturbances of gravitational field cannot exist. Gravity cannot be a wave. There are no gravitational waves. The motion of a mass does not alter its gravitational field since the field exists relative to the mass. The static gravitational field cannot be disturbed.

Higgs Bosons are considered to be a disturbance in the ubiquitous Higgs scalar field. Higgs scalar field is single. A single field cannot propagate. The Higgs field cannot propagate. The single Higgs field cannot be disturbed and hence Higgs Bosons as disturbances of the Higgs field cannot exist. A single static field cannot exist without attachment to its source. There is no Higgs source. The Higgs field cannot exist without a Higgs source.

A single field cannot be disturbed and hence photons cannot exist as disturbances of an electric field. As a result, the communication between charge particles cannot be a result of exchange of hypothetical photons. Photons have no belonging identifiers and hence cannot be a tool of communication between particles. The direction of propagation of light is determined by the medium and as a result the so-called photon or light particles cannot be a device of communication between particles. However, once a burst of light is released from a charge particle, it propagates and affects distance charge particles. It can oscillate distance charge particles. It has no effect on neutral particles. Light is a means for transferring kinetic energy from one location to a charge particle at a distant location via electromagnetic potential energy as an

intermediary. Electromagnetic radiation generated at one location cannot transfer energy to electrically neutral particles at a distant location. The intermediary agent, electromagnetic radiation has no momentum, no kinetic energy; it has electromagnetic potential Electromagnetic radiation transfers its energy. electromagnetic potential energy when it comes to contact with charge particles by oscillating the charge particles. So, the kinetic energy received by a charge particle in the presence of radiation is a function of the amplitude of the radiation as well as the frequency of the radiation 19]. There is no change of mass. The momentum loss of a charge particle generates electromagnetic momentumless radiation. Momentumless electromagnetic waves propagate the distance and if and when they come across charge particles, they oscillate charge particles generating momentum and kinetic energy. Electromagnetic waves carrying electromagnetic potential energy have no equivalent mass. Electromagnetic waves carrying electromagnetic potential energy have no momentum to transfer to objects of mass. Electromagnetic waves carrying electromagnetic potential energy cannot do work without charge particles or electrons.

A. Bizarre Wave-Particles and Particle Wavelength

"A wave does not come to existence just because de Broglie found a way to express a wavelength using the momentum. A wave is more than deriving an arbitrary wavelength. Foundation of a wave is not a wavelength. A propagating wave requires a conjugate pair as the foundation, not a wavelength. Maxwell found a conjugate pair of fields for the propagation of light for electromagnetic waves. De Broglie wavelength does not bring a particle wave into existence. There is nothing in a particle of momentum that is waving except the fact that if an electron of momentum p is stopped suddenly, it will result in electromagnetic waves of wavelength $\lambda = \eta/p$, where η is the radiation factor depends of the charge of an electron and the mass of an electron, which are constants. This is not a particle wave. Radiation constant η is not Planck's constant. The Planck constant does not exist. Planck' Spectrum and conjecture e=hf are false in their foundation. How can somebody who claims particles are waves be considered a scientist? Neither the particles are waves nor the waves are particles. Light cannot consist of particles of energy e=hf."

It all started with Einstein's false proclamation that propagation of light is relative and behaves as particles of momentum p traveling at speed of light c, which led to a meaningless description of the energy e of a photon or light quanta as,

e=pc (1.1.1) where, $p^2=p\cdot p$, and c is the speed of light. Propagation of light is not relative [15]. Maxwell equations for propagation of light cannot be transformed onto inertial frames [4,16]. Light does not propagate relative to observers. The path of light and the speed of light on its path are observer independent [15]. Observers cannot tilt an arrow. A light burst is a massless arrow.

The particle, photon, or quantum description of light is meaningless since light has no mass, no kinetic energy, no temperature, no heat, no entropy, and no momentum. It is only that light can generate momentum on a charge particle. Light can generate kinetic energy on a charged particle. Light has no effect on an electrically neutral particle. The interaction of light with a charge particle is not a collision of momenta since light has no momentum. The massless has no momentum. The massless cannot be given momentum by proclamation. La Grange does not apply for light. Newton's law of to light. Compton's motion does not apply interpretation experimental observation and wavelength derivation are invalid. The momentum is not conserved in the presence of light. It is the momentum of a closed system that is conserved. If light can enter the system, it is not a closed system. Compton's calculation of Compton-wavelength is invalid. In a closed system, the momentum or energy loss due to the generation of light is the same as the momentum and energy light can generate on a charge particle. However, the intermediary, the light, that transfers energy from one oscillating electron to a distant electron, has no momentum or energy. Photons of energy e=hf cannot exist since frequency has no independent existence. Frequency has no existence without amplitude.

Particles cannot propagate. Wave bursts are not particles. The wavelength of a hypothetical photon or light particle is meaningless. Wavelength of a particle is meaningless. If it is a wave, it has no existence without propagating, and hence it cannot be anchored to a particle. A particle is not going to behave as a wave just because de Broglie came up with a bizarre wavelength for a particle. A wavelength cannot come into existence without a wave. Propagating waves cannot be anchored to a particle. Propagating wave that is independent of any attachment cannot describe the position and momentum of the particle that generated the wave. A particle has no wavelength.

Light is not relative [4,15,16] and hence light has no equivalent mass. If a photon has energy e=hf and the mass of a photon is given by $m=hf/c^2$, then the mass of light of the continuous spectrum will be infinite. If a photon has mass, you will be knocked down by light with an incomparable force and you will not be able to get up; you will remain flat on the ground. Light is massless, and cannot behave like golf balls. The path of a moving entity cannot be altered relative to observers. A train does not derail relative to observers. A moving arrow does not tilt relative to observers. Einstein's Relativity derailed light. Observers cannot derail trains or light. Lorentz Transform is a mathematical blunder. Lorentz Transform cannot transform Maxwell equations for light [4]. Special Relativity is a result of mathematical and conceptual oversight [16,4].

By false assumption, the energy e of a so-called photon or light quantum is also related to frequency f by the Planck Constant h,

(1.1.2)

e=hf Frequency has no energy unless frequency of light is converted to kinetic energy in the presence of charged particles. Frequency of light has no effect on electrically neutral particles. The energy e of a photon cannot be represented solely by the frequency since frequency has no independent existence. Frequency has no existence without amplitude and hence $e \neq hf$. The Planck constant h has no existence. Planck's Spectrum is cavity dependent [19] and hence his conjecture e=hf does not hold, $e \neq hf$.

So, we have the invalid and nonexistent relationship,

pc=hf	(1.1.3)
The speed of light c is given by,	
c=fλ	(1.1.4)

c=fλ where λ is the wavelength.

Substituting for c in equation (1.1.3), we have a meaningless relationship that relate a wavelength λ of a photon inversely to its hypothetical momentum p of the photon by Planck constant.

<i>j</i> · · · · · · · · · · · · · · · · · · ·	
pfλ=hf	(1.1.5)
λ=h/p	(1.1.6)

Light has no mass, no momentum, and hence p has no existence for hypothetical photons or light quanta. However, the wavelength λ came to be known as the wavelength of a photon or light particle of momentum p. De Broglie received a PhD for this. De Broglie also received the prize and fame for this nonsense. According to Einstein, de Broglie opened a veil of nature by that. What a crock? De Broglie wave is a man-made, artificial, and non-existent wave with equally non-existent and artificial wavelength; totally imaginary, hypothetical; simply preposterous. Photon is a man-made, artificial, and non-existent particle with equally non-existent and artificial momentum; totally imaginary, hypothetical.

The plane wave equation for a wave of wavelength λ and frequency f at position x and time t is given by,

 $\psi(\mathbf{x},t)$ =A exp(jkx) exp(-j ω t). (1.1.7)The amplitude square of this wave can only be normalized for a wavelength; it cannot be normalized for the entire range. The normalized square amplitude of the wave contains zero crossings. A wave cannot represent a probability distribution.

The wavelength λ is related to the wavenumber k by,

 $\lambda = 2\pi/k$ The equations $\lambda = 2\pi/k$ and $\lambda = h/p$ are not equivalent since the momentum p cannot have the same properties of the wavenumber k. De Broglie wavelength λ =h/p cannot take the place of λ =2 π /k in the wave equation. There is more to a wave than coming up with a wavelength as de Broglie did. The derivation of a wavelength does ot bring a wave into existence. A wavelength has no independent existence. The position and momentum of a particle are unique and cannot behave as a wave. A particle cannot have multiple positions and momentums simultaneously.

In the case of a wave, at any time t, for given x, the

wavenumber k can have infinitely many values. For a given k, the position x can have infinitely many values. The x and k are a Fourier Transform pair. The (x,k) pair behaves as a wave. However, the same does not hold for the (x,p) pair. The position and momentum of a mass must be unique. The position x and momentum p of a mass cannot behave as a wave.

The wavelength $\lambda = h/p$ in equation (1.1.6) cannot represent a realistic wave since the momentum of a particle at any position at any given time must be unique. Irrespective of whether it is a hypothetical wave particle or particle of mass, a mass cannot be in multiple places simultaneously. There cannot be momentum without change of position and passing of time. The position cannot be fixed in the presence of momentum. If the momentum of a mass is constant, the mass takes a linear or circular path, not a wave path. A particle of mass m of constant momentum having a wave behavior is contradictory. Constant momentum and wave behavior cannot coexist. A mass cannot have momentum if the time is fixed. There cannot be momentum if the position is fixed. There is no change of position if the time is fixed. The position and momentum must be unique.

The vibration of a particle of mass is not a wave and cannot be represented by the wave equation. As a result, $\lambda = h/p$ cannot be a wavelength of a wave. The (x,p) pair cannot be a Fourier Transform pair even though the (x,k) pair is a Fourier Transform pair. Any entity that replaces wavenumber k in a wave must have the same properties as k. The momentum p of a particle does not have the same properties as the wavenumber k. The momentum of a particle cannot replace the wavenumber k in a wave. The position x and momentum p cannot be a wave. The position and momentum pair (x,p) of a mass cannot be a Fourier Transform pair. Heisenberg's Uncertainty Principle cannot hold. There cannot be an uncertainty about the position and momentum of a mass. The precision of momentum must be directly proportional to the precision of position, not inversely since $p=m\partial x/\partial t$.

Propagation of light has no associated momentum. Light has no momentum. The massless cannot have momentum. You cannot force a momentum on light by proclamation. Any entity with momentum must be stoppable. Conversely, only an entity that can be brought to a halt can have momentum. A non-stoppable entity cannot have momentum. Light has no standstill existence and hence light is not stoppable and cannot carry a momentum. There are no particles without momentum. Light cannot consist of particles. Particles cannot propagate. Particles that are assumed to be spatially random cannot generate coherent light rays. There are no massless particles. A massless light burst is not a particle.

The oscillation of an electron in its orbit in an Atom is not a propagating wave and cannot be represented by the propagating wave equation. The momentum of an oscillating electron in its orbit is not a constant; it is the average momentum of an oscillating electron in an Atom that is a constant. It is the average momentum of an oscillating electron that determines the radius of

the orbit in an Atom if the orbiting electron in an Atom is oscillating. Orbit of an electron cannot be quantized. Quantized orbits cannot exist. Bohr's Atomic model is hypothetical and cannot exist physically. There is no probability involved with the position and momentum of electrons in an Atom. There cannot be an involvement of probability when it comes to the position and momentum of an Atom. When an electron orbiting at speed v oscillates at frequency f, it follows a sinusoidal path with wavelength $\lambda = v/f$. This is not a wavelength of a propagating wave [19]. This wavelength does not have to be such that an integer number of waves fit into an orbit of radius r, $2\pi r \neq n\lambda$, where n is an integer. If $2\pi r = n\lambda$, then the orbit is in resonation with the oscillation. Planck's e=hf cannot hold since frequency has no independent existence and hence de Broglie's representation of the wavelength λ as $\lambda = h/p$ is invalid. The λ in the resonating orbit $2\pi r = n\lambda$ cannot be replaced by $\lambda = h/p$ and hence Bohr's model is not real. A resonating electron orbit $2\pi r = n\lambda$ does not have a propagating wave of wavelength λ and hence Schrodinger equation has no real existence. The wavelength λ cannot be related to the average momentum of an oscillating electron on its average orbit radius r in an Atom since Planck's conjecture e=hf is invalid, e≠hf [19]. When $e \neq hf$, de Broglie has no way of relating λ to 1/p, $\lambda \neq h/p$. An oscillating electron radiates and as a result, an electron in an orbit cannot continue to an oscillating electron radiates, oscillate. As oscillations of an electron in its orbit gradually ceases. High frequency oscillation can change the orbit.

Light burst is a wave. By definition, a particle is an entity with a mass. There are no particles without mass. A light burst cannot be considered a light quantum or a photon since a light burst must be able to divide into reflected and transmitted waves at a boundary. Electromagnetic waves are not probabilities of finding photons. Photons do not exist. Propagating cannot be a probability distribution. waves Electromagnetic waves are not probabilities of finding photons. Probability distribution is positive and static. Probability is a human description, not a mechanism of nature. The position and momentum of a particle must be unique. An oscillating particle with speed orthogonal to the direction of oscillation can take a sinusoidal path with wavelength λ . However, a sinusoidal path of a particle with wavelength λ is not a propagating wave of wavelength λ and it cannot be described by the wave equation. Further, $\lambda \neq h/p$. The energy of the particle of momentum p has nothing to do with the speed of light c and energy $e\neq pc$.

Any entity of momentum must be stoppable by applying equal and opposite momentum. A force must be able to be applied to any entity with momentum. Any entity with momentum must be able to be brought to a halt by applying a force, an equal and opposite momentum. Light cannot be brought to a standstill by any means since light has no standstill existence. Light does not respond to a force. Light that has no standstill existence cannot have a momentum. Light that has no standstill existence cannot consist of light quanta or photons of momentum.

Lemma:

Light has no momentum. An entity that has no standstill existence cannot have momentum. The interaction of light with matter is not a collision of momenta. Interaction of light with matter is through electrical charges or electrons. Light has no interaction with electrically neutral particles.

If there is no temperature, there is no energy. If there is no heat, there is no energy. If there is no entropy, there is no energy. There is no temperature, no heat, no entropy without mass. Potential energy is not energy unless it is converted to the kinetic energy of particles of mass. Energy is the kinetic energy of particles of mass. Light or electromagnetic waves have no momentum, no kinetic energy. The massless has no momentum, no energy. What light has is electromagnetic potential energy. Potential energy is not energy unless it is converted to kinetic energy of particles. Energy has no existence without an association with particles. Electromagnetic potential energy and Kinetic energy are not the same. If you divide electromagnetic potential energy by the propagation velocity of light, what you get is nonsense, not momentum, p≠e/c. It is only if you divide twice the kinetic energy of an object or a particle of mass by its speed, you will get the momentum of the particle or the object, $e=mv^2/2$ and p=2e/v. It is only the kinetic energy that has an associated mass hence momentum. Energy or kinetic energy has no existence without a mass.

No mass is required for the existence of electromagnetic potential energy. Electromagnetic potential energy is not energy, mechanical energy, or kinetic energy. The generation of electromagnetic waves or light is not a result of a mass loss. Electromagnetic potential energy has no associated mass and hence no momentum [5]. There is no momentum without a mass. There is no massless momentum. There is no energy, kinetic energy, without mass. There is no entropy without kinetic energy, heat, temperature. There is no entropy without mass. Boltzmann's entropy cannot be applied to light in a vacuum. Einstein's photon derivation is incorrect.

The massless has no momentum, no mechanical energy, no temperature, no entropy. Boltzmann entropy does not apply for the massless. Boltzmann entropy does not apply to light in a vacuum. Einstein's photon derivation is invalid. Energy refers to the kinetic energy of particles of mass. Without particles of mass, there is no energy, no temperature, no entropy. There is no massless momentum and the momentum \mathbf{p} of a particle of mass m and velocity \mathbf{v} is given by,

	p =m v			(1.1.9)
	v=p /m			(1.1.10)
The energy by.	/ of a mass	m with	momentum	p is given
3 /	e=n ² /2m			(1 1 11)

e=p²/2m	(1.1.11)
e≠pc	(1.1.12)

The energy $e=p^2/2m$ of a particle of mass m has nothing to do with the speed of light c. It is only that the stopping of an electron of charge qe and mass me traveling at speed v or momentum p_e=m_ev and energy e=p_e²/2m_e generates electromagnetic radiation waves of wavelength λ , which is proportional to reciprocal of the momentum p_e , $\lambda = \eta/q_e v$ or $\lambda = \eta m_e/q_e p_e$. The Radiation Factor nme/qe has nothing to do with the Planck constant h, $\eta m_e/q_e \neq h$. It is this generated radiation that travels at speed c, not the electron of momentum p_e; it is not a particle wave. It is the interference of these generated electromagnetic waves that generates an interference pattern on the screen of the Double-Slit experiment for a beam of electrons. It is not de Broglie waves that generate an interference pattern in the Double-Slit experiment for a beam of electrons. Particles are not waves. An electrically neutral beam of particles does not generate an interference pattern in the Double-Slit experiment.

These relationships for a particle of mass do not hold for the massless light. The massless has no energy. Energy is the kinetic energy. The massless light has no momentum. You cannot assume light to behave as particles of momentum. For light e=0, p=0, m=0, no heat, no temperature, no entropy; light is useless without electrons or charge particles. Electromagnetic potential energy of light is not energy unless it is converted to kinetic energy of a charge particle of mass. Light or electromagnetic energy has no effect on electrically neutral particles.

Light cannot be assumed to carry momentum since light has no standstill existence. A rest mass m cannot have speed c relative to light since light has no standstill existence and hence $e\neq mc^2$. For a stationary mass to have speed c relative to light and hence a rest energy $e=mc^2$, light must have a standstill existence. Light has no standstill existence. Einstein's $e=mc^2$ is simply the kinetic energy of a rest mass m relative to light; this cannot exist since light is not relative.

Atomic energy has nothing to do with Einstein's e=mc². The release of Electromagnetic waves by the splitting of nucleus does not result in a mass loss. Mass cannot be converted to energy since energy has no existence without mass. Mass must be conserved. Mass and energy are not equivalent. Light is a massless, momentum less, energy less intermediary that can transfer kinetic energy of one charge particle at one location to another charge particle at a distant location. This transfer undergoes an energy loss since light is subjected to attenuation. Without light the only way for one particle can only transfer energy to another particle by collision. Light provides a means to transfer energy to distance locations. This transfer only takes place between charge particles. If all that is there in the universe is light, there will be no temperature. There cannot be light without charge particles or matter.

Lemma:

Light cannot be taken as a reference frame since

light has no standstill existence. A stationary mass m does not have rest energy, e≠mc².

Newtonian Mechanics or the Mechanics for particles of mass are not applicable to massless light. The Lagrangian does not apply to light, the massless. When m approaches zero, p=0, e=0, v=0; v does not approach c when m approaches zero. When v approaches c and m approaches zero, e=0, $e\neq pc$.

Einstein derived his Time Dilation Factor or Relativity Factor γ by considering a vertical light beam in a moving train under the assumption that the path of light is relative. Einstein's Time Dilation t'= γ t is moronical [15,16,4], where γ =1/(1/v²/c²)^{1/2}, and v is the speed of the frame. Einstein's Relativity Factor or Time Dilation Factor (Moronicality Factor) γ has no existence [15]. This would have been clear to Einstein if he had considered a beam of light at an angle to the direction of a moving train instead of using a beam of light orthogonal to the direction of motion of the train in his thought experiment. Time and mass are absolute. If time is relative, time will be directional. If mass is relative, the energy will not be real, e=pc±jmc² [14].

The massless has no momentum. Momentum is not defined for the massless. Light cannot be given momentum by proclamation as Einstein did. Light does not propagate relative to observers. The path of light is unaltered relative to observers. A moving arrow does not tilt relative to observers. Einstein's Relative Time and Special Relativity are a result of tilting a moving arrow relative to observers, which cannot be done. Time is not relative. Special Relativity is false and no Special Relativity is required for the speed of light to be observer independent. Propagation of light is not relative [15,16]. Einstein derailed light in Special Relativity. Observers cannot derail trains. The path of a moving entity cannot be altered relative to observers.

Lemma:

A moving arrow does not tilt relative to observers. Special Relativity and Relative Time are a result of tilting a moving arrow relative to observers, which is not real.

When mass approaches zero, the momentum is zero. Light has no mass and hence no associated momentum. Light does not have an equivalent mass since light is not relative [4]. If you divide hf by c^2 , what you get is nonsense, not a mass, $m \neq hf/c^2$. You cannot create a mass by dividing the energy by c^2 . The hf is not energy, e≠hf. How can energy e=hf hold when f has no existence without amplitude and frequency f has no meaning for a mass traveling at constant speed v? The energy, which is the kinetic energy, has no existence without mass. A mass traveling at constant speed has no associated frequency but it has energy. The existence of energy does not require a frequency. All that is required for the existence of energy is mass, not frequency. There is no massless energy. Light has electromagnetic

potential energy. Electromagnetic potential energy is not energy unless it is converted to kinetic energy of charge particles. Frequency of light has no energy unless frequency is converted to kinetic energy of charged particles, which is a function of both amplitude and frequency of light, not frequency alone. Light has no interaction with electrically neutral particles.

According to the de Broglie relationship λ =h/p, the wavelength of a hypothetical light particle or photon is inversely proportional to the momentum of a photon, which is a hypothetical massless particle or light quantum that is non-existent. For a particle of mass and momentum p, de Broglie wavelength is meaningless. The decrease of wavelength with the increase of mass for a given momentum is unnatural. You cannot increase the resolution by increasing the mass of particles in a beam used for probing or imaging.

An electromagnetic force is not a result of hypothetical photon exchange. A gravitational force is not a result of hypothetical graviton exchange. Photons and Gravitons exist only in physicist's imagination, not in nature. Exchange of particles cost energy, not free. To exchange particles, particles must have identities. There are no massless particles. The massless wave bursts are not particles of momentum. You do not need to invent another hypothetical particle for two particles of mass to exert a gravitational force on each other. The exchange of particles is associated with a time delay. Propagation of a wave is associated with time delay. There cannot be a time delay in gravity. Gravity cannot be a wave. Gravity cannot be a result of exchange of particles. If gravity cannot exist without gravitons and gravitons cannot exist without gravity, the question is, which came first? If electromagnetic waves cannot exist without photons and photons cannot exist without electromagnetic waves, the question is, which came first?

Light is not relative. Light cannot be particles. Gravity is not particles. There are no particles of momentum without mass. Particles cannot propagate. Propagating waves cannot be particles. A particle of momentum must be able to be stopped. Hypothetical photons and gravitons cannot have a stand still existence and hence cannot be stopped. Gravity that has a belonging cannot come in gravitons that have no identification headers. Photons and gravitons Single fields cannot propagate. cannot exist. Propagation requires a conjugate pair. Gravity cannot be a wave. LIGO is a fantasy wave detector [9]. The claim by LIGO in 2015 that it detected so-called gravitational waves is bogus and it raises several auestions.

What is the direction of the simulated signal used for testing the LIGO system? What is the direction of the so-called detected gravitational waves? Are they the same? Gravity cannot be a wave. Any claim that they have detected gravitational waves at LIGO is an intentional deception or observation misinterpretation.

A single field cannot be a wave. A single field

cannot be disturbed and hence so-called hypothetical gravitons as disturbances of a gravitational field cannot exist. LIGO has some explaining to do. Did LIGO interpret a simulated test signal as gravitational waves due to a miscommunication between the test group and the observation group? When the observation group claimed that LIGO detected gravitational waves, did the test group keep quiet and decided to go with the flow in the wake of the euphoria that followed at all levels of hierarchy? Gravitational waves are fantasy waves. There is no justification to claim that LIGO waves are gravitational waves. LIGO waves are not gravitational waves [9]. LIGO did not detect gravitational waves. Gravity, which is a single field, cannot be a wave. Space cannot be distorted. If Space is distortable by an object of mass, orbiting systems are not possible.

Mass of an object cannot distort space even if space is distortable because it is not the mass of an object that occupies the space, it is the volume of an object that occupies the space. If space is warpable, what warps the space should be what occupies the space. If gravity is the curvature of the space and curvature of the space is determined by the volume of an object, then gravity is determined by the volume of an object, not by the mass of an object; how bizarre the General Relativity is in hindsight.

Particles move. Waves propagate. Motion and propagation are not the same. There is no need for exchanging invisible imaginary massless particles for two charge particles to exert an invisible force on each other. Propagating light waves are generated by charges that consist of static fields. So, a static field cannot be a result of a wave-particle exchange since wave-particles have no existence without charge particles that consist of static fields. Electromagnetic force between two charged particles does not require an exchange of photons. Light cannot consist of photons. An electric field between charges cannot be a result of exchange of photons that have no existence without an electrical field. What came first? Static field or wave-particles? There is no photon exchange between charge particles. There are no light quanta or photons. Light is always a wave, never a particle. Light cannot behave as particles at high frequency and as waves at low frequency. If light behaves as particles at high frequency, who and how the frequency above which light behaves as particles is determined? Frequency cannot determine if light behaves as waves or particles. Frequency that has no existence without amplitude cannot make such determination. Frequency has no energy.

Gravitational force between objects of mass cannot be a result of exchange of gravitons. There are no gravitons. A gravitational field cannot be a result of exchange of gravitons that have no existence without a gravitational field. Earth's existence on its orbit does not require an exchange of particles between the sun and the earth. Earth's existence on its orbit cannot depend on means of communications that are associated with time delays. Orbiting system cannot exist if gravity is an exchange of particles between the sun and the earth. Gravity is not a graviton exchange between masses. There are no gravitons.

Lemma:

There is no massless momentum. There is no need for an exchange of hypothetical invisible massless particles for two masses to exert an invisible force on each other. Electric force between two charged particles is not a result of exchange of hypothetical photons or light quanta. Gravitational force between two objects of mass is not a result of exchange of gravitons. There are no massless particles. There are no gravitons or photons. Wave bursts are not particles.

Lemma:

Static electric field between two electrical charges cannot be a result of an exchange of hypothetical photons. Static electric field is single and cannot be disturbed. As a result, photons as a disturbance of a static electric field cannot exist. The claim that the photons are disturbances in the static electric field and static electric field is an exchange of photons are contradictory. There are no light quanta or photons. A light quantum or photon without an identification header cannot exist.

Lemma:

The static gravitational field between two objects of mass cannot be a result of the exchange of hypothetical gravitons. The claim that gravitons are disturbances in the gravitational field and gravitational field is an exchange of gravitons are contradictory. Gravitons have no existence without a static gravitational field and hence a gravitational field cannot be an exchange of gravitons. There are no gravitational quanta or gravitons. Gravitons without an identification header cannot exist.

B. Particle Waves and de Broglie Wavelength

A hypothetical mass-less particle or photon behaving as a wave of wavelength that is inversely proportional to the momentum of the mass-less particle, $\lambda = h/p$, did not stop with the imaginary massless light particles or photons. De Broglie, desperate for something for his PhD, saw an opportunity. He had a wild desire to reciprocate Einstein's wild idea, "if Einstein's can make the wild claim that waves can be particles, why can't I make the equally wild claim that particles are waves". De Broglie might have known that he would have become a laughing stock by such a preposterous claim. On the other hand, De Broglie also knew that Einstein did not become a laughing stock by his preposterous claim that light are particles and hence his chance of becoming a laughing stock by the claim that particles are waves is quite slim. So, he tried to obtain Einstein's blessing for his out of the world preposterous claim in order to lessen the possibility of becoming a laughing stock. The claim that particles are waves is laughable indeed. The claim that light is particles is also equally laughable indeed. Today, both

claims remain in Physics as religious beliefs, not as scientific facts. Waves are not particles. Particles are not waves.

De Broglie was certain that the symmetry-loving Einstein would agree; agree is indeed what Einstein did. By the way, Einstein's claim was even more ridiculous than the claim that light is particles. What Einstein said was that the waves are particles at high frequencies or small wavelengths. De Broglie disregarded the frequency range in Einstein's claim when light becomes particles. In Einstein's theories, waves of large wavelengths are not particles; only the waves of lower wavelengths are particles. The boundary wavelength below which a wave becomes a particle is never known and never mentioned. If de Broglie has taken the frequency range into account, de Broglie's claim that "particles behave as waves" will be self-contradictory. If he had taken the frequency limit into account, he had to say, "particles with heavy mass behaves as waves" because only the particles with heavy mass for a given momentum or large momentum have smaller de Broglie wavelength. So, if de Broglie wants to extend Einstein's claim that "waves are particles at high frequencies", then de Broglie has to claim that "particles at large masses are waves for a given momentum". If de Broglie has intended to extend Einstein's wave-particle to particle-wave, then, in de Broglie's particle-waves, it is the large objects that are supposed to behave as waves, not the smaller particles. So, in de Broglie's world, it is macroscopic objects that behave as waves not microscopic objects; how bizarre?

De Broglie, out of nowhere, conjectured that any matter particle of mass m with momentum \mathbf{p} should also behave as a wave of wavelength λ given by,

 $\lambda = h/p$

where $p^2 = \mathbf{p} \cdot \mathbf{p}$.

(1.2.1)

De Broglie disregarded the frequency range in Einstein's claim that light is particles only at high frequencies or shorter wavelengths. In De Broglie's conjecture, the wavelength of a particle wave is inversely proportional to the mass of the particle for a given momentum or the frequency of a particle wave is directly proportional to the mass of the particle for a given momentum. De Broglie had a real knack for picking only what is needed to support his claim and disregard any that are objectionable. There is nothing waving in a particle and hence De Broglie's particle wave conjecture is incomprehensible. The energy of a particle of momentum p and mass m is $e=p^2/2m$; it is not the same as the energy of a hypothetical massless photon of hypothetical momentum p, e=pc. A particle of mass m has no relativistic energy, e≠pc. The energy of a particle of momentum p has nothing to do with the speed of light c.

Unlike a hypothetical photon, the momentum p of a particle of mass m and speed u is given by p=mu, and hence, λ =h/mu. In other words, the wavelength is inversely proportional to the mass of the particle for a given speed. The wavelength decreases with the increase of the mass of the particle for a given speed. If this is the case, we should be using thicker wires on

a guitar for high notes. This is counter intuitive. If this is true, we should be able to increase the resolution of Particle Microscopes such as Electron Microscopes by using heavier particles since it has been falsely claimed that the functioning of Particle Microscopes is based on De Broglie's particle waves. If the de Broglie relationship holds and the working of a particle microscope is falsely assumed to be a result of de Broglie waves, we should be able to increase the resolution of Electron Microscopes by using a beam of protons in place of a beam of electrons; of course, we have to call it Proton Microscope. If the de Broglie wavelength holds true, a beam of protons traveling at speed u should provide a Microscope that has a higher resolution than a beam of electrons traveling at speed u. This shows the mockery of particle waves or de Broglie waves. Nothing is right with the bizarre de Broglie wavelength conjecture. Nonsensicality of particle waves is obvious except for the physicists who believe it religiously. Religious believers do not require the proof of a claim, the validity, or the reality of the claim.

According to de Broglie conjecture, the wavelength is inversely proportional to the speed of a particle. This is correct for the wavelength of the electromagnetic radiation waves generated when a moving charge particle is suddenly stopped since the frequency of the radiation is proportional to the speed of the charge particle when it is stopped. Higher the speed of the charge particle, higher the frequency of electromagnetic waves it will generate when the particle is suddenly stopped. For a beam of electrons with momentum p, the wavelength of electromagnetic waves generated by the stopping of an electrons is inversely related to the momentum of the electrons and given by the relationship,

(1.2.2)

 $\lambda = \eta/p$ where, η is the radiation constant.

There is no reason for η to be the Planck constant. The radiation constant η can be determined by using the Double-Slit experiment. The de Broglie wavelength is not a wavelength of a particle wave; it is the wavelength of the electromagnetic waves generated by the stopping of a beam of electrons of momentum p. A wavelength is meaningless for an object of mass of momentum p. Object of mass of momentum p is not a wave. There are no particle waves. The use of the Double-Slit experiment by physicists to justify de Broglie wavelength is simply experimental blindness observation and misinterpretation, pure deception. If the physicists had repeated the Double-Slit experiment for a beam of protons of the same momentum p, they would have realized the mockery of de Broglie's bizarre particle waves; they would not have observed the same wavelength even though the momentum is the same. They would have realized that the wavelength λ_{e} of the interference pattern for a beam of electrons of momentum p is shorter than the wavelength λ_{n} of the interference pattern for a beam of protons of momentum p, $\lambda_e < \lambda_p$. There are no de Broglie waves or particle waves, which is a contradiction to de Broglie

wavelength. If the interference pattern is a result of particle waves given by de Broglie wavelength, the wavelength λ_e of the interference pattern for a beam of electrons should have been the same as the wavelength λ_p of the interference pattern for a beam of electron since both beams have the same momentum p and de Broglie wavelength λ =h/p is determined by the momentum alone. The bizarre concept of particle waves is utter nonsense.

The wavelength of the radiation has no relation to the mass of a particle except that the wavelength of electromagnetic waves generated by the stopping of a charge particle are inherently associated with the mass of an electron since charge has no existence without the mass of the electron. It is not the momentum of a particle that generates a wave. It is not the momentum of a particle that behaves as a wave. It is not the stopping of a mass that generates electromagnetic waves. It is the stopping of a charge that generates electromagnetic waves. Moving neutral particles cannot generate electromagnetic waves. An electrically neutral particle of momentum is not a wave and it does not generate radiation waves. So, it is not the momentum of a particle that generates waves, it is the change of motion of a charge or the change of the product of charge and its speed, the chomentum (Δqu) , that generates electromagnetic waves, where q is the charge and u is its speed. It is the electrical charge of a particle that is responsible for the generation of electromagnetic radiation waves when the object is stopped, not the mass of the particle. Mass is just the chauffeur for a charge since charge has no existence without mass.

Lemma:

The mass of an electron is just a chauffeur for a charge. It is the stopping of a moving charge that generates electromagnetic radiation waves of wavelength $\lambda = \eta/p$, where p is the momentum, η is the radiation parameter. Radiation parameter η is not the Planck constant h. An electron of momentum p is not a wave and it has no wavelength.

De Broglie wavelength is not considered to be the wavelength of electromagnetic waves generated by a charged particle when the particle suddenly stopped. De Broglie wave refers to hypothetical particle waves that do not exist; that is the problem with de Broglie waves and the whole idea of particle waves and Quantum Mechanics. There are no particle waves. A moving particle of mass cannot be a wave. A particle of mass at rest does not have a de Broglie wavelength. So, according to de Broglie, a particle at rest is not a wave. According to de Broglie, it is only a moving particle that is a wave. A particle of mass cannot become a wave just because it started to move at momentum p. A wave anchored to a particle is not a wave. A particle wave is an oxymoron. There are no particle waves. The concept of particle waves is meaningless. Oscillation of a particle is not a propagating wave. The sinusoidal oscillation of a particle orthogonal to the direction of motion is not a wave. A particle of mass cannot be a parameter in the wave equation.

De Broglie's blind combination of Einstein's invalid e=pc nonsense for a photon and Planck's invalid e=hf nonsense, and blind application them to a particle of mass m with momentum p is the genesis of matter waves, particle waves, or de Broglie waves, the voodoo physics. The strange thing here is that nobody knows what is waving in a particle with wavelength $\lambda = h/p$, yet, they call it science. The wavelength $\lambda = h/p$ is known as de Broglie wavelength of a matter particle of momentum p even though no such wave can exist or mentally comprehensible. Physicists go on chanting de Broglie's bizarre claim that "a particle of momentum p behaves as a wave of wavelength $\lambda = h/p^{2}$ just like a religious mantra. A religion by definition is an utterly meaningless practice. Modern Physics has taken a religious statue.

Light is not particles. Photons do not exist. Light has no momentum. What is developed for a photon of hypothetical momentum p cannot be extended to a particle of mass of momentum p since they do not have the same energy. A hypothetical photon of momentum p has energy e=pc whereas a particle of mass m and momentum p has energy e=p²/m. There is no relativistic energy. Propagation of light is not relative [15,16,4].

The momentum p is not unique since different masses can have the same momentum. Since the momentum p is not unique, the de Broglie wavelength is not unique to a given mass. So, if you have a de Broglie wave of a particle, it is not certain whether the wave belongs to a particle with mass m and momentum p or a particle with mass M and momentum p. The wavelength of a particle is not unique to that particle since particles of different masses with the same momentum can have the same wavelength. De Broglie wavelength is not a unique signature of a particle. De Broglie wavelength is not a unique property of a particle that belongs to the particle. If you are given a de Broglie wave, you cannot say what particle of mass it belongs to. The de Broglie wavelength cannot characterize a particle. Eigenvalues of Operators cannot characterize a particle since eigenvalues are not unique. The position and momentum of a particle cannot be modeled as eigenvalues of Position and Momentum Operators since the eigenvalues of the Position and Momentum Operators are not unique. The position and momentum of a particle must be unique.

It is through this de Broglie conjecture that the Planck constant h received the units of angular momentum; it is by assumption, not as a fact. Since the wavelength λ has the units of length, from the relationship, λ =h/p, the Planck constant h must have the dimension of angular momentum. As a result, any error or mistake in the wavelength will be reflected in the angular momentum or Spin. This is exactly how Spin-half came into being. Spin 1/2 was born through de Broglie wavelength error. Physicists talk about Spin 1/2 just like a religious prayer or religious chanting; in religious chanting, a chanter is not required to know the meaning of what is chanted. Professors are supposed to teach what is in the textbook; it is their job description; they are not hired to question what is in the text. Not surprisingly, as we will see, physicists have no clue to what Spin 1/2 is, simply because it is meaningless, and no such thing exists. It is not just Spin 1/2 that cannot exist, integer spins cannot exist either. Spin cannot be guantized. Spin-Up and Spin-Down have no existence without an observer and hence they are not states of a particle. A bipolar spin cannot have unipolar Spin-Up and Spin-Down states. Bipolar Spin cannot be quantized as Up and Down. Entities that only have existence relative to observers cannot exist as quanta. Observer dependent entities cannot exist in quanta. Spin Quanta is a result of Stern-Gerlach experimental misinterpretation, experimental blunder.

It is also the de Broglie conjecture that makes an invalid connection between the mass of a particle and the Planck constant. The fact is that the Planck constant has nothing to do with mass. Planck constant is related to electromagnetic energy, not to mechanical energy. (Modern Physics is based on the false assumption that light has energy even though light has no energy or momentum. What light has is electromagnetic potential energy. Electromagnetic potential energy is not energy unless it is converted to energy of charge particles.) Mechanical energy has no associated frequency. Mass of a particle consists of mechanical energy, which is not the same as electromagnetic energy; not all the energies created equal. Electromagnetic energy and mechanical energy are not the same; it is only that we can convert one to the other. Electromagnetic potential energy can be converted to kinetic energy of a charge particle. Electromagnetic potential energy has no effect on an electrically neutral mass. Mechanical energy does not come in quanta. Mechanical energy cannot be quantized as e=hf since mechanical energy has no associated frequency.

The energy e=hf is not an energy quantum. The energy e=hf has a physical meaning related to an oscillating mass. If a particle is oscillating at frequency f, then the average kinetic energy of the particle per unit cycle is given by e=hf, where h is a function of the mass of the particle and the amplitude of the oscillation. The h is not a universal constant [19]. The e=hf does not apply for light or electromagnetic waves since electromagnetic waves have no energy, no kinetic energy. Energy is the kinetic energy. There is no massless energy. As a result, mass cannot be converted to energy. Energy has no existence without mass. Light has no energy, $e\neq$ hf. Einstein's application of e=hf to light is invalid.

Lemma:

If energy is quantized as e=hf, the energy of a continuous spectrum will be infinite.

Light in a vacuum has no energy. Light itself has no energy, no mass, no momentum, no temperature, no entropy. Light cannot do any work without charge particles. Light is useless without charge particles. There is no energy without association of particles of mass. The energy is kinetic energy of the masses. The rest are potential energies. Potential energy is not energy until it is converted to kinetic energy. Although light has no energy, the electromagnetic potential energy that the light has can be converted to the kinetic energy of charge particles in the presence of charge particles. Plank's e=hf with universal constant h as energy quanta is meaningless. Kinetic energy of a particle of mass has no associated frequency, e≠hf.

Lemma:

Energy e=hf is the average kinetic energy per unit cycle of an oscillating mass at frequency f, where h is a function of the mass and the amplitude of oscillation. Equation e=hf does not apply for light and hence e=hf is not a photon. The average energy per unit cycle of an oscillating particle is not an energy quantum.

It is meaningless to write kinetic energy of a particle of momentum as e=hf or representing hf/c^2 as a mass; you cannot create or destroy mass. The generation of electromagnetic radiation does not result in a mass loss. The split of a nucleus does not result in a mass loss. The split of a nucleus generates electromagnetic radiation of very high frequency that aenerates very high energy on electrons resulting in destruction as it happened in Hiroshima and Nagasaki. The measurement of the mass of a nucleus before its split and the measurements of masses of the debris after the split of the nucleus are done in two completely different environments and hence the measured mass change cannot be attributed to a mass loss. The reading on a measuring device is sensitive to the environment it is doing the measuring. The dependence of a measuring device on the environment it is making the measurement cannot be forced upon what is being measured. In fact, Planck constant has no connection to the mass of a particle. It is the invalid assumption of particles behaving as waves, together with the equally invalid treatment of mechanical energy as the same as the electromagnetic energy that led to the Schrodinger equation. The Schrodinger equation is nothing more than the time derivative of the plane-wave equation under the invalid and meaningless assumption that the mechanical energy is guantized and can be represented as e=hf. The Schrodinger equation is equivalent to the impedance of an inductor in an electrical circuit.

The Schrodinger wave function is single. A single field cannot propagate. Propagation requires a conjugate pair of fields. Schrodinger wave function is not a propagating wave. De Broglie's bizarre particle wave is a single wave. De Broglie's bizarre particle wave cannot propagate since it has no conjugate partner. De Broglie wavelength is not a wavelength of a propagating wave; it is a hypothetical non-existent wave; it only exists in the mind of physicists. A wave anchored to a particle of mass cannot be a wave. A wave has no existence without propagation. A wave that has an anchorage cannot propagate. A propagating wave cannot be anchored to a particle or to space. Expanding space cannot alter the wavelength of a wave since a wave is not anchored to space..

Contradiction in de Broglie Conjecture:

According to the de Broglie conjecture, the wavelength is inversely proportional to the mass of the particle and hence higher is the mass shorter is the wavelength for given speed. As a result, for the same speed, a Proton Microscope should provide higher resolution images than an Electron Microscope if you falsely assume that the functioning of a particle microscope is a result of the particle waves or de Broglie waves. This is counter intuitive and contradictory. You cannot increase the resolution of a Particle Microscope by increasing the mass of the particles.

In fact, by increasing the mass, you are decreasing the resolution for the same momentum. The higher the mass of the particles, the lower is the resolution in practice for the same momentum, a real contradiction to de Broglie conjecture. Reality is against de Broglie conjecture. De Broglie conjecture is counter intuitive. Wavelength cannot be inversely proportional to the mass of the particle. Wavelength cannot be inversely proportional to the momentum of a particle. There is no wave associated with momentum of a particle. It is only the electromagnetic waves generated by the stopping of electrons that have a wavelength that is inversely proportional to the momentum of the electrons; these generated electromagnetic waves are not particle waves. The working of a Particle Microscope has nothing to do with mysterious particle waves or de Broglie waves.

It makes sense to use the smallest mass possible in a Particle Microscope for higher resolution. In fact, that is the reason for using a beam of electrons in a Particle Microscope. That is the reason why we have Electron Microscopes, not Proton Microscopes. It is the moving charges that are responsible for generating an image in a Particle Microscope such as Electron Microscopes, not de Broglie's hypothetical particle wave nonsense. If a beam of neutral particles is used in a Particle Microscope, there will not be an image. This is a clear indication that it is not de Broglie's particle waves that generate an image in Electron Microscopes. The problem is you cannot accelerate a beam of neutral particles using an electric field.

It does not matter what the mass of the particles are, an electrically neutral beam of particles does not produce an image in a Particle Microscope, or an interference pattern in the Double-Slit experiment. It is only when we use a beam of charged particles, we can obtain an interference pattern in the Double-Slit experiment or an image in a Particle Microscope such as Electron Microscope. If the beam of particles used in a Particle Microscope were electrically neutral, we would not have had an image in the Particle Microscope. De Broglie waves or particle waves have nothing to do with the functioning of a Particle Microscope or anything else. Particle waves or de Broglie waves are a mental construct only present in Physicist's misguided false mentality, not in reality [13]. De Broglie's particle waves are not real.

The generation of electromagnetic radiation waves of wavelength $\lambda = \eta/qu$ when a charge q moving at speed u is stopped is real and they are not particle waves. If the wavelength of these radiation has any association to the mass of the charge, it is because the speed of a charge depends on the mass m for a given momentum, u=p/m. There is no charge without mass. There is no motion of a charge without the motion of a mass. Larger the mass longer the wavelength of the radiation. Smaller the mass, shorter the wavelength of the generated radiation. As a result, the shortest radiation waves are obtained for a beam of electrons, which makes Electron Microscopes to be the highest resolution over any other Particle Microscope [19].

C. Wave-Particles and Particle-Waves

Maxwell equations for propagation of light are not transformable onto inertial frames. Lorentz Transform cannot transform Maxwell equations onto inertial frames [16,4]. Propagation of light is not relative [15,20]. What the Lorentz Transform transforms is the static electric and magnetic fields, not the propagation of light [17]. Static electric and magnetic fields are the trivial solution of the Maxwell equations. Light cannot be relative since the path of light cannot be altered relative to observers. Einstein derailed light in Special Relativity. The change of the path of light is determined by the change of the medium. The change of the speed of light is determined by the change of the medium. The change of the velocity of light is determined by the medium. The path of light and the speed of light on its path cannot be altered relative to observers. A moving arrow does not tilt relative to observers. A train does not derail relative to observers. Galilean Relativity requires a correction. Einstein's Relativity must be discarded; it is invalid and not required. The Lorentz Transform does not exist.

Propagation of light is not relative. There is no relativistic energy, e≠pc. You cannot substitute a particle of momentum in the place of hypothetical momentum given to light. You cannot substitute p in the e=pc for photons by the momentum of a particle of mass. Photons and a particle of mass do not have the same characteristic. Although a photon has speed c from the start, a particle of mass cannot have a constant speed from the start. Although a particle of mass has a standstill existence, a photon does not have a standstill existence. A photon cannot have momentum since a photon does not have standstill existence. Light cannot be particles. Light bursts released from a source are not particles. If light comes as light quanta or photons of energy e=hf, then, the energy of any continuous spectrum would be infinite. Light cannot consist of energy quanta or photons of energy e=hf.

De Broglie wavelength λ=h/p is simply meaningless for waves since waves are not particles and electromagnetic waves have neither mass nor momentum. The massless has no momentum. For a light quantum or photon e≠pc. An entity with momentum cannot propagate. Any entity with momentum cannot have constant speed in the presence of a force. Any entity with momentum must react to a force. A force must be able to be applied onto any entity with momentum. Light does not respond to a force. A force cannot be applied to light. It is only that light can apply a force onto charge particles; that is how light interacts with matter. If light has momentum, light cannot have constant speed in a vacuum in the presence of gravity. If light has momentum, light must be able to be stopped by applying equal and opposite momentum. Light is not stoppable by any means since light has no standstill existence. There cannot be a momentum in the absence of a mass. There is no massless momentum.

Electromagnetic waves carry electromagnetic potential energy, not the kinetic energy or mechanical energy. Electromagnetic potential energy is not kinetic energy. Not all the energies are equal. When we refer to energy, we refer to the kinetic energy of particles. Energy is the kinetic energy of particles. There is no massless energy. Kinetic energy can only exist in association with a mass. Light can generate energy in the presence of charge particles or electrons that there are plenty of in matter. No such association of a mass exists or requires for the existence of potential electromagnetic energy. Equating mechanical kinetic energy or energy to electromagnetic potential energy is one of the biggest mistakes in Special Relativity as well as in Quantum Mechanics.

Electromagnetic potential energy can be converted into kinetic energy of charge particles and the conversion is not equal or one-to-one. An oscillating particle has kinetic energy and it is not given by e=hf with a universal constant h since frequency of oscillation has no existence without amplitude. Electromagnetic potential energy is not given by e=hf since frequency has no existence without amplitude. The energy e=hf is meaningless for light. Planck's relationship e=hf with universal constant h is meaningless, e≠hf. The derivation of the blackbody spectrum does not require the assumption e=hf. Planck's blackbody spectrum is incorrect since it is cavity dependent. If e=hf, then, the energy of a continuous spectrum of any bandwidth will be infinite. If e=hf, spectrum cannot be continuous. If the spectrum is continuous, energy cannot come in energy quanta e=hf. e≠hf.

The energy e=hf simply the average kinetic energy per unit cycle of a particle of mass oscillating at frequency f. The h here is a function of the mass of the oscillating particle and the amplitude of oscillation. The average electromagnetic potential energy of light or electromagnetic waves is not given by e=hf. For light e=hf has no meaning, e≠hf.

Mechanical energy is continuous. Mechanical

energy has no associated frequency unless it is an oscillation of a mass at frequency f. Even for an oscillation of a mass m at frequency f, the energy e=hf with a universal constant h has no meaning. Mechanical energy, e_m or the energy associated with a mass m does not come in quanta and hence $e_m \neq hf$. Without invalid quantization of mechanical energy of a particle, and the invalid representation of the mechanical energy of a particle as hf, there would not be a Schrodinger equation or Wavefunction. If you divide hf by c², what you get is nonsense, not a mass, m≠hf/c². Light has no mass, no momentum. You cannot generate a mass just by dividing hf by c². The claim that a hypothetical photon has an equivalent mass hf/c² is simply ridiculous. The mass of an object has nothing to do with the speed of light. The speed of light cannot limit the speed of a mass. Light has no mass, no momentum. You cannot give the massless a momentum by proclamation. Einstein developed Special Relativity by forcing a hypothetical momentum on light. Einstein assumed light to be relative and came up with the Relativity Factor γ and used that as the Transformation Factor in the Lorentz Transform to prove that light is relative, which is a circular argument. Einstein's Relativity Factor is directional [15]. Maxwell equations cannot be transformed onto inertial frames [16,4]. Propagating waves cannot have momentum. Light has no momentum. Light cannot consist of photons or light guanta of momentum.

Mechanical energy has a belonging since mechanical energy cannot exist without associating with an object of mass. There is no massless energy. The massless has no temperature. The massless has no entropy. Light has no energy. What light has is electromagnetic potential energy. Potential energy is not energy unless it is converted to the kinetic energy of charge particles of mass. Unlike electromagnetic potential energy, mechanical energy is not free flowing; its distribution is through collision. Mechanical energy is not waves. Mechanical energy does not propagate.

The collision of charged particles generates electromagnetic waves that propagate. If the propagating electromagnetic waves come across charge particles, then, the interaction generates momentum or energy on charge particles; this interaction is not a collision of momenta since light has no momentum. This is why Compton's prize-winning derivation of Compton wavelength is false. Compton's treatment of light as a collision of momenta in the derivation of Compton wavelength is ridiculous. total nonsense. If the propagating electromagnetic waves come across electrically neutral particles, there is no interaction. Interaction of light and particles of mass is not a collision of momenta, not momentum transfer; it is light generating momentum on charge particles. Light does not have momentum to transfer. A closed system is not closed if light enters into it. The momentum of a closed system of charge particles is not conserved if light enters into it. The momentum of a charge particle is not conserved in the presence of light. Momentum

of light is an oxymoron. Light particles, light quanta, and particle waves are oxymorons. There are no photons. There are no particle waves.

Any quantity that has a specific belonging cannot be quantized since the belonging information is lost if that quantity is quantized. Any entity that has a direction cannot come in guanta. Vectors cannot come in guanta. Mechanical energy is specific to an object of mass. Coherent light beams cannot consist of spatially random light guanta or photons; this is where Einstein's derivation of photons went wrong [8]. Light quanta, if exists, belongs to a specific light wave or light ray, but quantum has no means to carry that belonging information. If any entity comes in quanta, the quanta in nature have no mechanism to carry belonging information. As a result, any entity in nature cannot come in guanta. Mechanical energy cannot be quantized. Mechanical energy cannot come in quanta. Energy cannot be quantized. Light comes in wave bursts, not as light particles, photons, or light quanta, e≠hf. The concept of light particles, quanta, or photons are not well thought out, both mathematically and conceptually flawed, and simply preposterous. Einstein's photons or light quanta laid the foundation for voodoo physics.

Lemma:

Any quantity that has a specific belonging cannot be quantized since nature has no mechanism to carry belonging information in quanta.

Natural Property:

Not all the energies are the same. Electromagnetic potential energy and Mechanical energy are not the same. Energy cannot come in quanta and cannot be represented by a universal energy quanta e=hf since frequency has no existence without amplitude, kinetic energy of a mass has no associated frequency unless it oscillates at frequency f, and light has no kinetic energy. Kinetic energy of a mass traveling at speed v on a linear path has no associated frequency. Light comes in wave bursts. The electromagnetic potential energy of a light burst can be represented by e=hf if the amplitude of wave bursts is to be frequency independent. A coherent beam of light cannot consist of spatially random light quanta of photons of energy e=hf. Electromagnetic potential energy of light is not energy unless it is converted to kinetic energy of charged particles. The h is not a universal constant. The h depends on the mass of an oscillating charge particle that generated the electromagnetic waves since the speed of the charge is determined by the mass for a given momentum.

The relationship λ =h/p is meaningless for light since light cannot be a collection of spatially random particles as it was hypothesized by Einstein in the derivation of spatially random photons. Spatially random particles cannot be on a linear path that light takes. Light cannot take a coherent linear path if light consists of spatially random particles or photons. If light has an equivalent mass, light cannot travel at constant speed even in a vacuum in the presence of a gravitational force. Since a force cannot act on light, light cannot have momentum. Light is not relative [4,17]. Light does not propagate relative to observers [15,20]. Maxwell equations for light cannot be transformed onto inertial frames [4,16]. Since light is not relative, light does not behave as golf balls and have no equivalent mass.

When light is not relative, a vertically oriented pulse of light from the bottom of a moving train travels vertically while shifting against the motion of the train at the speed of the train relative to passengers on the train [15,20]. A vertical light burst travels vertically relative to passengers on the train and observers outside the train and hence time it takes for the light burst to hit the ceiling is observer independent; time is not relative, Mass is not relative [15,4,5]. Einstein's claim that time is relative is moronical. In Einstein's t'= γ t, γ is the Einstein's Relativity Factor (Moronicality Factor) that turned Physics into Voodoo-Physics. If time is relative, time will be directional and the Relativity Factor γ will be directional. The Relativity Factor γ depends on the angle θ of a light beam to the direction of a moving frame [15] and hence,

 $t'(\theta) = \gamma(\theta)t$,

where, $\gamma(\theta) = \gamma^2 [(v/c)\cos(\theta) + (1-(v^2/c^2)\sin^2\theta)^{1/2}], -\pi \le \theta \le \pi,$

 γ is $\gamma(\theta)$ at $\theta=90^{\circ}$, $\gamma=\gamma(90^{\circ})$,

 $\gamma = 1/(1 - v^2/c^2)^{1/2}$.

It is only for the angle θ =90° that Einstein Relativity Factor γ =1/(1-v²/c²)^{1/2}. Each direction has its own Relativity Factor and hence there are infinite Relativity Factors if time is assumed to be relative. The path of light cannot be altered relative to observers and hence time cannot be relative and Special Relativity is utter nonsense, garbage. Einstein's Relativity Factor does not apply for any other direction except for θ =90°. For the direction of motion of the frame θ =0°, the Relativity Factor is γ^2 . Einstein shrewdly retained the Relativity Factor in the direction of the frame to be γ by forcing the length for the average forward and backward motion to contract by the factor $1/\gamma$.

You cannot make γ the Relativity Factor for the entire frame just by forcing it in the direction of the motion of the frame. If you define relative time as the average forward and backward time of a beam of light, it does not apply for one-way real-time systems. Einstein's Special Relativity does not apply for real-time systems [15]. Forcing the γ in the direction of motion of the frame does not make it the Relativity Factor for any direction θ . If time and mass are relative, then what we have in Special Relativity is $t'(\theta)=\gamma(\theta)t$ and $m'(\theta)=\gamma(\theta)m$. In Special Relativity, the relative mass m' is angle dependent $m'(\theta)=\gamma(\theta)m$. Einstein's relative mass m'= γm is meaningless.

The mass of an object cannot be relative. The amount of matter in an object cannot change relative to observers. The amount of matter in an object cannot change with its speed. The mass is a fundamental property of matter. Time is a definition. Time and mass are absolute. An observer cannot alter the mass of an object and time just by running away from it. The motion of an observer cannot affect the physical properties of other objects. It is the measuring device that is speed dependent, not what is being measured. Observers cannot alter reality. Physical Reality is not determined by observers. If it is there to observe, then, the observation of it does not alter it. All that can take place relative to an observer is the displacement against the motion of the observer; nothing is altered relative to observers. The displacement against the motion of an observer cannot alter anything in the moving entity.

Lemma:

A moving entity is displaced relative to an observer against the motion of the observer. Nothing is altered by the displacement of an entity against the motion of an observer relative to the observer. It is there to observe and the observation of it does not alter it.

The relationship $\lambda = h/p$ does not hold true even for light or electromagnetic waves since light is not relative. De Broglie's extension of $\lambda = h/p$ for massless hypothetical photons to any particle of mass is invalid and meaningless. The wavelength $\lambda = h/p$ derived for a hypothetical photon or a wave particle cannot be extended to a particle of mass since they do not have the same energies and properties. The energy of a so-called hypothetical photon or wave particle of hypothetical momentum p is not the same as the energy of a particle of mass of momentum p; they are two different types of energies. Not all energies are equal. It is the de Broglie's false assumption that the hypothetical particle waves of particles of momentum p have the same wavelength as the wavelength of equally hypothetical massless photons or wave particles of the same hypothetical momentum p that led to the mysterious Quantum Spin-1/2 and meaningless Boson and Fermion categorization. There are no Bosons. Waves are not particles. Electric field between two charges cannot be an exchange of photons since photons have no existence without electric fields.

Matter particles do not behave as waves. Momentum of a particle does not have an associated wave, nor does it generate a wave or behave as a wave. If a particle of mass m behaves as a wave, the wavelength must be unique to that particle, but it is not. The momentum, p is not unique. As a result, the wavelength $\lambda = h/p$ is not unique to a particle. Try to explain the working of a string musical instrument with Broglie conjecture. You cannot. It is a de contradiction. Larger the mass, the wavelength cannot be shorter; if this is the case, you could increase the resolution of a Particle Microscope by using a beam of particles of larger mass. Working of Electron Microscopes has nothing to do with particle waves [19].

Even if you want to assume particles behave as waves, the de Broglie wavelength λ =h/p of a particle is incorrect, meaningless. We are going to see how we can obtain the fitting wavelength for a matter particle of momentum p and see why de Broglie wavelength is incorrect and to what extent. If you still want to stick religiously to the invalid idea that particles behave as waves and also to its equally invalid extension Quantum Mechanics, the good news is that we can easily correct the mistake by associating a multiplication factor into the Planck constant in Quantum Mechanics; with that, now, you can remain in the religious cult of particle-wave believers and keep practicing voodoo-physics.

We are also going to show how Quantum Spin-1/2 and Quantized Spin disappear, in general, from existence with the use of the fitting wavelength that the energy of a particle of mass m and momentum p can support in place of the incorrect de Broglie wavelength that the energy of no particle of mass can support. Quantum Spin 1/2 is what turned physics into voodoo-physics where reality turned into anybody's guess or into what one sees on the clairvoyance's 8th-Ball.

Voodoo-fication:

De Broglie's misguided false assumption that the hypothetical Particle Waves are of the same wavelength as the hypothetical Photons or Wave Particles led to the mysterious, meaningless, and invalid Quantum Spin-1/2, which has no real existence. Quantum Spin-1/2 that has been deceptively substantiated by misinterpretation or bogus interpretation of the Stern-Gerlach Experiment is the origin of the proclaimed bizarreness of microscopic particles, voodoo physics. The energy of a hypothetical photon of hypothetical momentum p is not the same as the energy of a particle of mass with momentum p. You cannot substitute the momentum of a particle of mass in place of a hypothetical momentum of a hypothetical momentum of a hypothetical photon or light guanta. The momentum of a particle of mass does not have the same properties as a so-called photon of light. To use one in place of another, they must have the same properties. Particles of mass and photons do not have the same properties.

Spin Quantum is meaningless and non-existent. There is no such thing called Spin Quanta. Spin cannot come in quanta. Spin is Bipolar. Bipolar Spins cannot have unipolar Up and Down Quanta. Up has no existence without Down and Down has no existence without Up. There are no unipolar Up and Down. Spin cannot be quantized. Up and Down of a Spin exist only relative to an observer. One observer's Up can be another observer's Down. Up has no existence without Down and vice versa. Up and Down that have no existence without an observer cannot exist as a state of a particle, and cannot come in quanta.

Spin is a vector. Vectors cannot be quantized. If energy e=hf, then the energy of a Spectrum would be infinite and hence energy cannot come in energy quanta e=hf. A realistic interpretation of the observations of the Stern-Gerlach experiment does not require spin quanta or probability. The

Stern-Gerlach experiment is deterministic. Nothing in nature is probabilistic. We make the assumption that an entity is probabilistic does not mean it is probabilistic. As we will see later, the magnitude of the Spin is a constant for Atoms with a given atomic number. The magnitudes of the spin of electrons are the same. Stern-Gerlach Experimental Interpretation is wrong, an experimental blunder. The claim that a particle can be in multiple states simultaneously is nonsense, not science; voodoo physics. The state of a particle of mass is unique at any instant of time. Particles do not behave as waves. Particles are not waves. The position and momentum of a particle cannot behave as a wave; it is self-contradictory. If a particle has a constant momentum, it cannot be a wave since a wave requires the momentum to be not a constant.

The state of a particle is unique and cannot be defined by a wave function. If the position and momentum of a particle is assumed to behave as a wave hypothetically, the Position Operator cannot be the position itself. A particle cannot be in multiple places without costing energy and the passing of time. A particle cannot behave as a wave without costing energy. There cannot be momentum without changing the position and passing of time. There cannot be a change of position without passing of time. A particle cannot have a fixed position in the presence of momentum. If time is fixed, there would be no momentum. IF it has a momentum, it cannot have a fixed position. If it has momentum, time cannot be fixed. As soon as time is considered to be fixed. momentum disappears. This is why the position and momentum of a particle cannot be a Fourier Transform pair.

The derivation of the Schrodinger wave function depends on the invalid assumption that mechanical energy is quantized and has an associated frequency. Kinetic energy of a mass does not have an associated frequency. The Schrodinger equation is nothing more than the time derivative of the plane wave equation under the false assumption that a particle behaves as a wave under the energy constraint of a particle [7,13].

A single cannot tango. A single wave cannot propagate. Propagation requires a conjugate wave pair. The Schrodinger wave equation does not have a conjugate partner wave. The Schrodinger wave equation is not a propagating wave. Mechanical energy has no associated frequency and it is not Quantized. Parameters of a system cannot be represented by eigenvalues of operators since the eigenvalues are not unique. Matrix Operators cannot be the Operators of observables in Quantum Mechanics since Matrix Operators do not satisfy the non-commutative relationship in Quantum Mechanics. Matrices of infinite dimension do not have eigenvalue representation and hence cannot be Operators of Observables.

Momentum has no existence without the change of position. Position cannot remain unchanged in the presence of a momentum. Position and Momentum

are mutually dependent and hence cannot be a Fourier Transform pair. Momentum cannot have multiple values without the change of position and the passing of time. For a given position, momentum cannot be a wave. If the position is fixed, a particle cannot have a momentum. If the time is fixed, a particle cannot have momentum. If the time is fixed, a particle cannot have a change of position. For a given momentum, position cannot be a wave. Although the position and the wavenumber represent a wave, the position and momentum of a particle of mass do not represent a wave. The wave number k of a wave equation cannot be replaced by momentum p of a particle of mass since they are not equivalent, $p \neq \hbar k$. The position and momentum cannot be a Fourier Transform pair. As a result, the Heisenberg Uncertainty Principle is invalid [13,7]. Much celebrated Heisenberg Uncertainty Principle has no existence. The Heisenberg Uncertainty Principle is Blind Physics.

Lemma:

Although the position x and the wavenumber k represent a wave, the position x and momentum p of a particle of mass do not represent a wave. The position x and momentum p of a particle cannot be a Fourier Transform pair. The position and momentum of a particle must be unique at any time.

Precision of the momentum of a particle is not inversely related to the precision of the position of the particle. In fact, the precision of the momentum of a particle is directly proportional to the precision of the position of the particle and vice versa. Position and momentum of a particle must be unique at any time. As we are going to see, Spin-1/2 disappears when the fitting wavelength that the energy of a particle of mass can support is used if the particle is falsely assumed to behave as a wave, and with that the voodoo behavior of Spins cease to exist; the end of voodoo-Spins. The end of voodoo-Physics requires a complete overhaul of Physics discarding all of Einstein Theories and Quantum Mechanics.

The Reality:

If the momentum is fixed, the position takes either a linear or circular path, not a wave. If the position is fixed, momentum has no existence. Momentum has no existence without change of position and the passing of time. The precision of momentum is directly related to the precision of position. The position cannot change without the passing of time. Position, Momentum, and time are mutually dependent, and hence not a Fourier Transform pair. A major fallacy of QM and Heisenberg Uncertainty Principle is the false assumption that the position and momentum of a particle are a Fourier Transform pair. The mass of a particle cannot be a Fourier Variable.

D. What is Generated When A Charge Particle is Stopped is Electromagnetic Waves, Not Particle Waves

If a moving charge particle is stopped suddenly,

the stopping of the moving charge generates electromagnetic waves. If a moving electron of momentum p is stopped, it generates electromagnetic waves of wavelength proportional to 1/p since an electron is the minimum mass required for the existence of charge. This does not hold for any charge particles of momentum p. The wavelength of electromagnetic waves generated by the stopping of any charge q of mass m and momentum p is not proportional to 1/p. The proportionality of the wavelength that is generated by the stopping of a charge particle of momentum p to its inverse momentum 1/p only holds for electrons. The mass of a moving charge particle is a hindrance to the generation of radiation when it is stopped. It is the motion of electric charge q at speed u or the chomentum gu of the charge that is responsible for the generation of radiation when it is stopped, not the motion of the mass or the momentum p=mu.

The wavelength of electromagnetic waves generated by the stopping of a moving charge q of mass m and speed u is inversely proportional to the chomentum qu, not to the momentum mu, $\lambda = \eta/qu$, $\lambda \neq h/p$. where, p=mu, λ is the wavelength, and η is the radiation constant. If q=nq_e, where n is the number of electron charges in q, and q_e is the charge of an electron, $\lambda = n/ng_e u$. If we want, we can write $\lambda = n/ng_e u$ as $\lambda = \eta_e / np_e$, where, $\eta_e = \eta m_e / q_e$, the m_e is the mass of an electron, $p_e = m_e u$ is the momentum of an electron, and $\eta_e = \eta m_e/q_e$. The radiation parameter $\eta_e = \eta m_e/q_e$ is a constant since the mass of an electron me and the charge of an electron q_e are constants. Note that the wavelength λ is inversely proportional to the momentum of an electron, not to the momentum of an object that carries charge q. The wavelength $\lambda = \eta_e/p_e$ is the wavelength of electromagnetic waves generated by the stopping of a moving electron of momentum p_{e} . There is no reason for the radiation parameter η_e to be the Plank constant h. The Planck constant has no existence. The value of η_e can be obtained by the Double-Slit Experiment.

Consider a beam of charge particles of mass m and charge q traveling at speed u. Assume that the charge q is equivalent to n electron charges. If we use this beam of particles in the Double-Slit experiment, the particles are stopped at the Double-Slit Barrier. As a result of this stopping, the wavelength of the generated electromagnetic waves will be $\lambda = n_e/np_e$. where, np_{a} is the momentum of n electrons, $p_{a}=m_{a}u$. and m_e is the mass of an electron. The generated electromagnetic waves have a wavelength that is inversely proportional to the number of electron charges times the momentum of an electron; it is not inversely proportional to the momentum of mass m. These waves are not particle waves. There are no particle waves. Particles are not waves. The momentum of a particle neither behaves as waves nor generates waves. Waves are not particles.

Lemma:

The wavelength of electromagnetic waves generated by the stopping of a charged object of

mass is inversely proportional to the momentum of electrons, not to the momentum of the object of mass. These generated radiation waves are real; these are not some hypothetical particle waves or de Broglie waves.

E. Light Cannot Have Mass

Frequency of a wave has no energy. Frequency of light has no energy. Light has no energy. The massless has no energy. Light has electromagnetic potential energy. Potential energy is not energy unless it is converted into kinetic energy of particles of mass. Light is not particles. Light cannot consist of photons or light particles. If light consists of light quanta or photons of energy e=hf, the energy of even the narrowest continuous spectrum will be infinite since there are infinitely many frequencies between any two frequencies. The frequency Spectrum of light cannot be continuous if e=hf. Planck's conjecture e=hf is meaningless. Planck's blackbody Spectrum derivation is cavity dependent [19]. Frequency has no energy. To represent energy as e=hf, frequency must have an independent existence. Frequency has no existence without amplitude. Energy is the kinetic energy of particles of mass. There is no energy without particles of mass. There is no massless energy. Einstein's claim that light comes in hypothetical particles of energy e=hf is silly, meaningless. Planck's conjecture e=hf does not apply for light. Planck's conjecture e=hf with the universal constant h is false. What the relationship e=hf represents is the average energy of a particle of mass oscillating at frequency f with h that is dependent on the mass and the amplitude of the oscillation; h is not a universal constant. The relationship e=hf does not apply for light; it is not the average energy per unit cycle for light. Light has no energy. Electromagnetic potential energy is not energy unless it is converted to kinetic energy of charge particles.

The mass is a fundamental property of a particle. The mass of an object determines the momentum and its energy, not the other way around. The momentum or energy do not determine the mass of an object. It is only that you can use the momentum and energy of an object to estimate the mass. The energy is the kinetic energy of matter. There is no massless energy. There is no massless temperature. There is no massless heat. There is no massless entropy. Since there is no massless energy, it is only that the energy associated with a mass can be used to obtain the mass. Energy cannot determine the mass of an entity unless the energy is associated with a mass. Electromagnetic potential energy is not associated with a mass. Energy of a hypothetical photon is not associated with a mass. An entity with mass cannot propagate. A propagating entity cannot have a mass or momentum. The forcing of momentum on light in Special Relativity is self-contradictory. If light has a momentum, we should be able to stop light by applying equal and opposite momentum; this shows the mockery of Special Relativity.

Any entity that has no standstill existence cannot

have a mass, cannot have momentum. If it has a mass or momentum, it must be stoppable. Light has no standstill existence and hence light is not stoppable, and cannot have a mass or momentum. massless The cannot have momentum. Electromagnetic potential energy of light cannot be attributed to an energy of a mass. The existence of electromagnetic potential energy does not require a mass, does not require momentum. Any entity anchored to a mass cannot propagate. If so-called light guanta or photons have mass, light cannot propagate. If photons have mass, light cannot exist. In Einstein theory of photons, light consists of photons only at high frequencies. So, if photons have mass, it is only the electromagnetic waves at high frequencies that have momentum. If photons are claimed to have mass, it is only the light at high frequencies that have mass. So in Einstein's theory of photons, light has no momentum at low frequencies. If the interaction of light through the collision of photons and there are no photons at low frequencies, how do the light at low frequencies interact with objects of mass? What determines the critical frequency above which electromagnetic waves act as photons of momentum and below which they behave as waves? Light does not have a mechanism for determining a critical frequency above which light behaves as particles. Electromagnetic waves interact with charged particles irrespective of frequency. The interaction of electromagnetic waves with matter is through electrons or charge particles, not a collision of momenta. Electromagnetic waves have no interaction with neutral particles. Compton's derivation of Compton Wavelength is invalid. Photons or light quanta are blind physics.

You do not need to run experiments to find out if light has mass. If Einstein's hypothetical photons of energy e=hf has a mass, you will feel it because you would be knocked down by the punch of it. If light has a mass, you are going to feel its punch; it will be an unforgettable punch. If a hypothetical photon has a mass, the mass of a beam of even the narrowest band of light will be infinite. If light has mass, you will be knocked out by an infinite force. If so-called photons have mass, photons will not be prevented from leaving by the gravitational force of a star. Any entity with mass or momentum cannot escape the gravitational force.

Light does not propagate relative to observers. Light that does not have a standstill existence cannot be relative. The energy $e=mc^2$ is the kinetic energy of a stationary mass m if the mass has speed c relative to light. A stationary mass cannot have rest energy $e=mc^2$ relative to light since light is not relative and has no standstill existence, $e\neq mc^2$. For a stationary mass m to have speed c relative to light or for $e=mc^2$, light must be stoppable. The rest kinetic energy of a mass is an oxymoron. Kinetic energy of a particle of mass m is not the same as the electromagnetic potential energy. The e=hf does not apply for light. You cannot give a photon or light quanta of hypothetical energy hf a mass m just by dividing the hf by c^2 , $m \neq hf/c^2$. If you divide hf by c^2 , what you get is nonsense, not a mass. The e=hf with h as a universal constant does not apply for light or particles of mass. Light has neither a mass nor an effective mass. Light does not consist of light quanta or photons. Light bursts we see if a light source is dimmed enough are wave bursts; they are not particles; those light bursts go through both slots in the Double-Slit experiment and generate an interference pattern because they are waves [2].

Light is not relative. Light has no momentum. Frequency has no energy. Light has no kinetic energy. There is no kinetic energy without mass. What light electromagnetic has is potential energy. Electromagnetic potential energy is not energy unless it is converted into energy of charge particles. Light has no effect on electrically neutral particles. The interaction of light with matter is never a collision of momenta since the massless light has no momentum. entity with momentum cannot propagate. An Compton's derivation of Compton wavelength is invalid since light cannot consist of particles or photons of energy e=hf and hypothetical photons cannot have mass or momentum. Light is a momentum generator on charge particles. The momentum of a charge particle is not conserved in light. Momentum is conserved in a closed system when there is no light entering into the system. Light cannot do any work in the absence of charge particles. Light is useless in the absence of matter.

The radiation pressure cannot be attributed to a hypothetical momentum of light. The massless has no momentum. Light has no momentum. Radiation pressure is not a result of light colliding with matter. Radiation pressure arises from the temperature difference caused by the vibration of the electrons by light. Even though light has no momentum, light generates momentum on charge particles which in turn generates a temperature gradient and a pressure gradient.

The warmth we feel in the presence of light is not a result of collision, it is a result of the vibration of the or electrons by light or charge particles electromagnetic waves. The collision of light with electrically neutral particles does not generate a force. Collision cannot take place with the massless. Collision is between masses. Light does not collide with an object. When charged particles or electrons encounter light, they undergo oscillation. Light oscillates electrical charges. Light has no interaction with electrically neutral particles. Light is useless without charge particles. There is no light without charge particles of mass. There cannot be particles of fractional charge of an electron unless an electron is splittable into fractions. The non-splitability of electrons is an indication that there cannot be fractional charges. Subatomic particles claimed to be discovered in particle colliders cannot be real since the discovery is based on relativistic energy that has existence. Relativistic energy is a result of no Einstein's Special Relativity. Special Relativity is a mathematical and conceptual blunder [15,16,4].

Lemma:

If light consists of hypothetical photons of energy e=hf and the mass of a hypothetical photon is given by $m=hf/c^2$, then, the aggregate mass of a beam of light of even the narrowest band would be infinite. If photons have mass, you do not need experiments to verify it, you will feel a punch heavier than the greatest boxer; you will remain kissing the canvas for eternity.

Lemma:

Frequency has no independent existence and hence $e\neq hf$. Light is not relative and hence an object of mass m has no rest energy, $e\neq mc^2$. Not all energies are the same. You cannot generate mass by dividing hf by c^2 , $m\neq hf/c^2$. The kinetic energy of a mass has nothing to do with the speed of light unless the mass is traveling at the speed of light. There is nothing that prevents a mass traveling at the speed of light. Speed of an object of mass is not limited by the speed of light. Universe has no speed limit.

F. The Fundamental Particles that are Claimed to be Discovered by Colliding Particles in Particle Accelerators are Bogus, Not Real.

In Special Relativity, Einstein claimed that the mass of an object is relative and depends on the speed of the mass. m'= γ m, where $\gamma = (1/v^2/c^2)^{1/2}$. Recently, Physicists contradict Einstein's claim that the mass is relative and correctly reclaim that the mass of an object is not relative. It is true that the mass of an object is not relative m' $\neq \gamma$ m. However, the mass of an object is not relative because Special Relativity is invalid. Time is not relative. Einstein's Relativity Factor or Time Dilation Factor $\gamma = (1/v^2/c^2)^{1/2}$ does not hold for any direction, it only holds for direction orthogonal to the direction of motion of a frame [15]. You can see the invalidity of Special Relativity if you consider a beam of light at an angle in a moving train. It is not just the speed of light that cannot be altered relative to observers, the direction of a beam of light also cannot be altered relative to observers. It is not just m'= γ m that is invalid, m' $\neq \gamma$ m, the whole of Special Relativity is invalid. Time is not relative, t' $\neq \gamma t$.

You cannot claim mass is not relative while using the relativistic energy of a particle $e^2=(pc)^2+(mc^2)^2$. The relativistic energy $e^2=(pc)^2+(mc^2)^2$ is derived under the assumption the mass is relative, $m'=\gamma m$, where $\gamma=(1/v^2/c^2)^{1/2}$. Mass is not relative, $m'\neq\gamma m$. Mass is the amount of matter in an object. The amount of matter cannot vary with its speed. The energy and momentum of an object vary with its speed, but the mass does not. If the measured mass of a moving object appears to be different from the mass at standstill, it is because the measuring device depends on the speed, not the mass itself. You cannot force the dependence of a measuring device on its speed on what is being measured.

A particle of mass does not have relativistic energy $e^2=(pc)^2+(mc^2)^2$. Energy $e^2=(pc)^2+(mc^2)^2$ relationship does not hold, $e^2\neq(pc)^2+(mc^2)^2$. If a particle of mass m

is moving at speed v, the energy of the particle is $e=mv^2/2$ irrespective of the speed v of the particle. The energy of a particle is not given by e=pc. The energy of a particle of momentum p has nothing to do with speed of light, e≠pc. The energy of a particle of momentum p and mass m is simply e=p²/m. Speed of light cannot limit the speed of a particle. The energy of a particle of mass has nothing to do with the speed of light unless it is moving at the speed of light. A stationary particle cannot have relative speed c relative to light since light is not relative, $e\neq mc^2$, $e^{2} \neq (pc)^{2} + (mc^{2})^{2}$, $m' \neq \gamma m$, $t' \neq \gamma t$, $d' \neq \gamma d$. Special Relativity is mathematically invalid and conceptually flawed. Time is not relative. Special Relativity is not a valid theory of nature. Special Relativity that is based on the average forward and backward time of a beam of light cannot even apply for one-directional time; it cannot be applied to real-time systems that run on one-way time.

If you work at a particle accelerator such as LHC, you want to keep the accelerator working if you want to keep the job. If you want to keep the accelerator working, then, you have to show that it is doing what it is intended to do. Particle accelerators were built to discover fundamental particles of nature by colliding particles at high speed. So, to keep particle accelerators working, you have to show that you discovered particles at least once in a while. So fundamental particles appear not because they are real but because there is a necessity for finding particles. It is the same with LIGO. If you want to keep your job, you have to show that LIGO is doing what it is intended to do somehow. You have to show that you are detecting gravitational waves. So, there is a necessity for finding gravitational waves to keep LIGO running and to keep the jobs. If you do not find gravitational waves, LIGO is not going to continue. So, if you are paid to find fundamental particles byu colliding particles, you have to show that you are finding particles. If you are paid to find gravitational waves, you have to show you are finding gravitational waves. You are given a blueprint, a job description. You follow it. You are asked to collide particles and use relativistic energy to analyze the debris. Your job is not to question the validity of relativistic energy. Particle accelerators give data. LIGO gives data. The validity of the results depends on the method of analysis. An experiment is as good and real as its interpretation. Did they discover fundamental particles collidina particles of nature bv in Particle Accelerators? No. You cannot discover particles that have a real existence with a wrong theory. You cannot discover fundamental particles of nature by colliding charge particles. Did they discover gravitational waves at LIGO? No. Is the direction of gravitational waves that they claim they have detected in 2015 different from the simulated test signal? Why should gravity travel at the speed of light? What does gravity have to do with the speed of light? Gravity cannot be a wave. A wave is associated with propagation delay. Gravity between objects cannot have propagation delay. There cannot be orbiting systems if gravity is

associated with a time delay. Spacetime function does not exist since the Lorentz Transform cannot transform Maxwell equations for propagation of light. There is no spacetime function. Time is not relative. Special Relativity is false. Gravitational waves are fantasy waves. Propagation requires a conjugate pair. Gravitation does not have a conjugate pair. Gravitational field is static, not a wave. You cannot keep the job if you point out the mistakes and the invalidity of Special Relativity even if it is proven Special Relativity is a mathematical and conceptual blunder. If you want to see the blunder in Special Relativity, all you have to do is consider a beam of light on a moving train at an angle [15]. If you want to see the blunder in the Lorentz Transform is just try to transform the Maxwell equations onto an inertial frame using a general Transformation Factor [4,16,17]

The collisions in Particle Accelerators provide the paths of the debris of the collision. One has to model the collisions and analyze the debris in order to determine the particles in the debris. The validity of new particles derived from the data depends on the validity of the model and the equations used.

In obtaining the mass of the pieces resulting from the collision of particles in a particle accelerator, physicists analyze the tracks left behind in the collision using the relativistic energy $e^2 = (pc)^2 + (mc^2)^2$. If the relativistic energy of a particle is given by $e^{2}=(pc)^{2}+(mc^{2})^{2}$, then $e=pc+jmc^{2}$ and $e=pc-jmc^{2}$; the energy is not real, not unique [14]. The energy of a particle must be real and unique. If mass is relative. the energy is not real, not unique. The Relativistic Energy $e^2 = (pc)^2 + (mc^2)^2$ is a result of the assumption that the mass is relative in Special Relativity. Special Relativity itself is a result of a mathematical oversight and conceptual mistake [15,16,4]. Einstein envisioned Special Relativity by considering a vertical beam of light in a moving train, a special situation; it only applies to a vertical light beam. If Einstein had considered a beam of light at an angle in a moving train, he should have realized the mockery of Special Relativity [15,4]. Einstein tried to substantiate Special Relativity by trying to transform Maxwell equations onto inertial frames. Einstein exploited the non-uniqueness of the Lorentz Transform to make it look transformable. Maxwell equations for propagation of light cannot be transformed onto inertial frames [4]. Propagation of light is not relative and the Lorentz Transform cannot transform Maxwell equations [16.4]. Einstein's Relativistic energy of a particle has no existence, $e^2 \neq (pc)^2 + (mc^2)^2$. As a result, the particles discovered by using a false relativistic energy cannot have a real existence. Despite many false claims, Physicists did not discover the fundamental particles of nature by colliding particles in High-Speed colliders. Any particle discovered by using Relativistic Energy is bogus. Fundamental particles of nature cannot be obtained by colliding charge particles.

The claim that Physicists discovered the fundamental particles of nature including the illusive Higgs Boson as predicted by Standard Model by analyzing the tracks left behind by the collision in particle accelerators is false. Special Relativity is false both mathematically and conceptually. The position and momentum of a particle of mass cannot be a Fourier Transform pair and hence the Heisenberg Uncertainty Principle is false. You cannot obtain the lifetime of a particle by using the Heisenberg Uncertainty Principle. Lifetime of a particle is not given by $\Delta t=h/\Delta e$, $\Delta t\neq h/\Delta e$. Although High-Energy Colliders are costly and awe-inspiring High-Tech marvels, once the data for the tracks are collected, the actual determination of the mass reduces to simple number crunching and based on one false equation $e^2=(pc)^2+(mc^2)^2$ from Special Relativity and another false equation $\Delta e\Delta t=h$ from Quantum Mechanics, which are meaningless, $e^2\neq(pc)^2+(mc^2)^2$ and $\Delta e\Delta t\neq h$.

Further, when high speed charge particles are brought to a stop at a collision, it generates radiation. This radiation is a contaminant that must be removed from the site if one wants to analyze the real tracks of the broken pieces left behind by the collision. These radiations alter the actual track if they are not removed from the site. The radiation resulting from stopping high speed charge particles at a collision cannot be separated from the radiation that results from the splitting of the particles. As a result, it is not possible to obtain the fundamental particles of nature by colliding charge particles.

G. The Genesis of Voodoo Physics

The turning point of Physics into voodoo Physics was Einstein's Special Relativity with false conclusions that t'= γ t, m'= γ m, and e=mc², Planck's energy quanta e=hf, Einstein's invalid derivation of light quanta or photons of energy e=hf that is strictly limited to high frequencies with unknown lower frequency limit, and de Broglie's bizarre particle wavelength λ =h/p for a particle of mass m with momentum p with no clue to what particle waves are. The Lorentz Transform, which is a mathematical deception, provided a false justification for Special Relativity.

Special Relativity and Planck's energy quanta e=hf together with the false assumption that the position and momentum of a particle behaves as a wave of de Broglie wavelength λ =h/p and invalid representation of the position and momentum of a particle as eigenvalues of Operators laid the foundation for Quantum Mechanics. Hubble's misrepresentation of redshift of a star in a galaxy led to the meaningless Hubble's law v=Hd obtained using a Least Squares fit for scattered radial speed v of a galaxy and the radial distance d to the galaxy for different galaxies, and henceforth the bizarre concept of universe expansion.

Einstein's invalid Equivalence Principle paved the way for bizarre spacetime warping and General Relativity. There is no acceleration without motion and the Equivalence Principle is invalid. Even if it is falsely and unrealistically assumed that space is warpable, mass cannot warp space since it is not the mass of an object that occupies space. If the space is warpable, it must be the volume of an object that must warp space, not the mass, since it is the volume that occupies space, not the mass. Space is not warpable. The position and momentum of a particle of mass must be unique. A particle with constant momentum and the momentum of a particle behaving as a wave are contradictory. A particle with constant momentum cannot behave as a wave. The position and momentum of a particle cannot be a wave. The position and momentum cannot be mutually independent.

The position and momentum of a particle are mutually dependent. The position and momentum of a particle cannot be a Fourier Transform pair. Heisenberg's Uncertainty Principle is false and it cannot hold. Planck's e=hf cannot hold. Light cannot be particles. There are no photons or light quanta of energy e=hf. The Schrodinger equation is meaningless. Orbits cannot be quantized. For an orbiting particle to change the orbit, a particle cannot disappear from one orbit and reappear in another, voodoo physics. A particle is not Houdini. Bohr Houdinified the Atom. Bohr's Atomic model is hypothetical, not real.

Matrix Operators cannot be in Quantum Mechanics. Bipolar Spins cannot come in unipolar Up and Down quanta. Pauli's 2D Spin Matrices cannot exist. Dark Matter is a result of underestimation of the orbits of stars. Dark energy is a result of misinterpretation of star redshift as a universe expansion. Dark matter and Dark energy are not required. The position and momentum of a particle that must be unique cannot be modeled as the eigenvalue of Operators since eigenvalues are not unique. If the position and momentum of a particle is forced to behave as a wave, the Position and Momentum Operators are described by the wave and they commute.

The non-commutation of the Position and Momentum Operators in Quantum Mechanics is a result of the contradictory choice of the Position Operator as the position itself. The Position Operator cannot be the position itself if the position and momentum of a particle are assumed to behave as a wave. Particles cannot behave as propagating waves. Sinusoidal oscillation of a particle in its orbit is not a propagating wave. Sinusoidal oscillation of a particle on its orbit or on its path cannot be modeled as a propagating wave. Oscillation of a particle on its path is deterministic. The oscillation of an electron at frequency f in its orbit is deterministic. The momentum of a particle does not make the particle oscillate. It is the presence of electromagnetic waves that make an electron orbiting in an Atom to oscillate. An oscillating electron emits electromagnetic waves.

Einstein's Special Relativity is both mathematical and conceptual blunder. If you want to see the mockery of Einstein's Special Relativity, all you have to do is consider a beam of light released from the bottom of a moving train at an angle to the direction of motion of the frame [15]. Maxwell equations for propagation of light are not transformable onto inertial frames [4,16]. Propagation of light is not relative. The Lorentz Transform does not exist [17]. If light has momentum, we will be crushed by the force of it. There is no massless momentum. If light has a mass, we will be beaten to the ground by the mass of it.

The claim that the universe is any dimension other than 3D is preposterous. Time is not a dimension. Time cannot be a dimension. We cannot even stand up if the universe is any dimension other than 3D. If the universe is 4D or any higher dimension, we would not be able to stand up or function. It is not just us, no species can function if the universe is any dimension other than 3D. If the universe is 4D or higher, no species can survive. The claims in Physics that the universe is 4D, 5D, 10D, 11D, 12D are utter nonsense. Nature did not leave the determination of the dimension of the universe to Physicists. Every species has evolved with their own mechanism for determining the dimension. We have our dimension detector in our ears, and according to that the universe is 3D. If Einstein's claim that the universe is 4D is correct, we will not be even able to stand up. If Einstein had had his ears checked, he would not have made such a nonsensical mistake. If you are one of the Physicists who goes on claiming that the universe is 4D or any higher dimension, you should make an appointment to see a medical Doctor to get your ears checked. We cannot survive in a 4D or any higher dimension universe. No species can survive if the universe is not 3D.

An experiment is a double edge sword. An experiment as good as or as real as its interpretation. There is rarely a physics experiment that has not been misinterpreted in Modern Physics. It is the misinterpretation of experiments that has given a false justification to invalid and unrealistic theories in Physics turning Physics into voodoo Physics. In Physics. Modern experiments have been misinterpreted in support of invalid theories. The Double-Slit experiment had been misinterpreted to justify De Broglie's bizarre particle wave conjecture even though it is obvious that a wavelength of a particle is meaningless and the concept of particle waves is preposterous. The interference pattern in the Double-Slit experiment is not a result of particles hitting the screen. The interference pattern in the Double-Slit Experiment is a result of the electromagnetic radiation generated by the stopping of the electrons at the Double-Slit Barrier. Interpretation of the Stern-Gerlach experiment is invalid. There is no probability involved in the Stern-Gerlach Device. The Up and Down split beams in the Stern-Gerlach Magnetic Field are volatile.

Anderson's two spirals of opposite orientations in the cloud chamber are not the same, and they cannot be interpreted as the paths of the particles of the same mass. How can anybody interpret two unequal spirals of opposite orientations as the paths of an electron and a positron? Two unequal paths of opposite orientations cannot be a result of particles of equal mass. Mutual opposite but unequal spiral pairs in the Andersons cloud chamber cannot be the paths of electron-positron pairs. Spiral pairs in Anderson's cloud chamber must be the paths of unequal masses with opposite charges; one spiral for a particle of much lesser mass than the mass of the particle for the other spiral, just like the spirals for an electron and a proton, not like an electron and a hypothetical positron.

Gravity has no direct effect on light. Gravity has no effect on time. Gravity has no effect on frequency of light. Gravity has no effect on the speed of light in a vacuum. Gravity has no effect on wavelength of light in a vacuum. The conclusions of the Pound-Rebka experiment is a result of an experimental misinterpretation. If the Pound-Rebka experiment had been carried out in a vacuum, there would not have been a wavelength shift. Arthur Ellington's solar eclipse data interpretation in support of General Relativity is invalid; it is pure deception, an observation misinterpretation to obtain a desired result. Hubble's law is nonsense. The redshift of a star in a galaxy cannot be attributed to a radial motion of the galaxy. If the redshift of a star in a galaxy is a result of the radial motion of the galaxy, then, all the billions of stars in the galaxy must have the same redshift.

Compton's wavelength is a result of an experimental misinterpretation and a theoretical blunder. Light has no momentum. Light cannot consist of particles or photons of energy e=hf. You cannot claim time is relative by taking a clock around the world. Clocks do not determine time; clocks break down a defined time into finer intervals. You cannot claim time depends on gravity by taking a clock onto a mountain. The dependence of a clock on its speed and gravity cannot be forced onto time itself. Time cannot be relative. The dependence of clocks on speed and gravity says nothing about time.

The Dark Matter is a result of Orbits underestimation of star orbiting systems. You cannot use the same analysis used in the solar system to analyze star orbiting systems [6]. There is no relativistic energy. Mass is not relative. The fundamental particles that had been discovered using relativistic energy in high-speed colliders are not real, they are bogus. You cannot get real particles using relativistic energy that does not have real existence. Special Relativity and relativistic energies are bogus.

The fundamental particles of nature cannot be obtained by colliding charge particles. LIGO is a fantasy wave detector. Gravity cannot be a wave. There are no gravitational waves. The claim that the gravitational waves had been detected in the LIGO is a pure deception. The Higgs field cannot exist. A single field cannot propagate. A single field cannot exist without anchorage to a source. A single field cannot be perturbed. There cannot be Higgs Bosons. The claim that the Higgs particles had been discovered in the LHC is a false claim, a pure deception. LHC is like an 8th ball. You can prove anything with that. The fundamental particles of nature cannot be obtained by colliding charge particles.

Millikan's photoelectric experiment is incomplete and conclusions are false. Lenard' photoelectric experiment is incomplete and conclusions are wrong. Millikan's experiment cannot substantiate Einstein's invalid claim that light consists of photons or light quanta of energy e=hf. Neither Millikan nor Lenard carried out photoelectric experiments for varying amplitude [19]. You cannot alter the amplitude of light by dimming a light source.

Modern Physics is a bundle of invalid theories and experimental blunders zealously guarded by the people who profit and earn living by it. The fallacy of Modern Physics is open for everyone to see but for some reason nobody wants to see; the emperor's new clothes. If you point out the fact, you will lose your head. So, Modern Physics keeps chugging on. They keep preaching what is in the text and claim Einstein is a genius and Special Relativity and Quantum Mechanics are the greatest inventions in physics. Modern Physics has been practiced and promoted as a new religion. A few narrow-minded but stubborn persistent individuals have turned Modern Physics into voodoo Physics in the twentieth century. There is no justification required for voodoo Physics. The voodoo Physics is justified by chanting the text and practicing it as a religion. How can a doctrine that preaches a particle of mass can be in multiple places simultaneously be science? Modern Physics is not science.

H. Sherlock Holmes-ing: Shining Light on Blind Physics

There cannot be a Quantum without an identifier. Nothing in nature can come in guanta. Vectors cannot be quantized. Energy in a continuous Spectrum cannot come in quanta. Any entity that has a belonging cannot come in guanta. Metamorphosis of Physics into mysterious voodoo Physics started with the illogical and false concepts of energy quanta, momentum quanta, Spin quanta, light quanta in Quantum Mechanics, and relative time, relative mass, relative length, relative light, and relativistic energy in Special Relativity, together with the mysterious/bizarre concept of wave-particle duality, and hypothetical mass-energy duality. Mass and energy are not equivalent, and cannot be equivalent since there is no massless energy. Electromagnetic potential energy is not energy unless it is converted to energy of charge particles. Light has no momentum. An entity that has no standstill existence cannot have momentum. Interaction of light with matter is not a collision of momenta.

Particles are not waves and waves are not particles. Einstein's invalid forcing of the mass of an object to increase with its speed and reach infinity as it reaches the speed of light in Special Relativity gave a particle relativistic energy that is dependent on the speed of light. There is no relativistic energy. The energy of a particle has nothing to do with the speed of light unless it is moving at the speed of light. Speed of light cannot limit the speed of an object. Mass of an object is a fundamental property of matter. Mass is absolute. Mass is speed independent. It is the mechanism of a measuring device that is speed dependent, not what is being measured. The speed dependence of measuring devices cannot be forced onto what is being measured. Mass is not relative. Time is not relative. Propagation of light is not relative. Observers cannot bend light. Einstein's invalid forcing of light to be relative and behave as golf balls in Special Relativity gave a mass imaginary rest kinetic energy. A rest mass cannot have rest kinetic energy e=(mc)c relative to light since light is not relative. Rest kinetic energy is an oxymoron.

If mass is relative, energy will not be real. Einstein's Relativistic Energy does not exist, and it cannot be used in analyzing the tracks left behind by the collision of high-speed particles in high-energy particle colliders to discover the fundamental particles of nature. Special Relativity is false and there is no relativistic energy. New particles that have been discovered in high energy particle accelerators are not real. Any new particle discovered by analyzing the collider data based on relativistic energy of particles is bogus since Special Relativity is a result of mathematical and conceptual blunder. Fundamental particles of nature cannot be obtained by colliding charge particles unless the radiation that results from the stopping of charge particles at a collision is isolated from the radiation that result from the splitting of the particles and its debris.

The loss of momentum of a charge particle generates electromagnetic radiation. Electromagnetic radiation generates momentum on charge particles. Momentum, mass, and energy of a closed system is conserved. However, the momentum of a charge particle moving at constant speed does not remain moving at constant speed in the presence of light. Momentum of an electrically neutral particle moving at constant speed remains moving at constant speed in the presence of light. Light is a momentum generator on charge particles. There is no momentum conservation in the interaction of light with charge particles. Light has no momentum. There is no massless momentum. The massless is not relative. Compton's wavelength derivation is invalid.

Mysterious Relative Time, Relative Mass, particle waves, wave particles, Spin Quanta, and a Universe Expansion have transformed Physics into voodoo Physics, one big joke where unrealistic claims or misconstrued realities are construed as science. Blind to the reality, universities shamelessly carry on teaching voodoo Physics as science and Journals and media praises voodoo Physics and reject or turn a blind eye to the proven fact that they are wrong. Voodoo-fication of science started with Einstein's bizarre and false proclamation that time is relative. Time cannot be relative. Clocks do not determine time. Relativity of a clock does not make time relative. Einstein's Relative time is a result of mathematical oversights in transforming Maxwell equations onto inertial frames, shortsighted thought experiment mishaps, and experimental misinterpretations. Special Relativity based on the average forward and backward time of a beam of light cannot be applied to on-line systems that run on forward time. Both theoretical as well as experimental blunders are

abundant in Modern Physics.

The redshift of a star in a galaxy cannot be attributed to a doppler effect. The redshift of a star in a galaxy cannot be attributed to a radial motion of the galaxy. Radial motion of galaxies cannot be attributed to universe expansion. If a galaxy is moving radially, all the stars in the galaxy must have the same redshift. Expanding universe cannot alter the intergalactic distances of gravitationally bound galaxies since galaxies are not anchored to space. Expanding universe cannot stretch the wavelength of light since light is not anchored to space. An anchored entity cannot move or propagate. Space cannot expand or contract. It is the medium that expands or contracts. Mass cannot warp space. Mass warps a medium. The warped a medium diffract light. Gravity does not bend light in a vacuum. Gravity has no effect on light, the massless.

The path of light cannot be altered relative to observers. Einstein's Special Relativity is invalid and unnecessary. The path of a moving entity cannot be altered relative to observers. A moving arrow does not tilt relative to observers. Galileo Relativity is incorrect since observers cannot derail trains. Einstein's Special Relativity is incorrect since observers cannot derail light. Light cannot be particles, light quanta, or photons since a quantum cannot propagate and cannot divide into reflected and transmitted parts at a boundary. If light comes in photons, photons will be in limbo at a boundary. If light consists of hypothetical photons of energy e=hf, the energy of a continuous Spectrum will be infinite since there are infinitely many frequencies between any two frequencies. Coherent light cannot consist of spatially random photons.

The energy e=hf has a physical meaning only if h is not a constant, and it is not an energy quantum. For an oscillating mass m at frequency f, the energy e=hf is the average kinetic energy per cycle and h is a function of the oscillating mass m and the amplitude of the oscillation. The h is not a universal constant and it is zero if the mass is zero or the amplitude of the oscillation is zero. Energy e=hf does not apply to light, the massless. Light cannot be claimed to consist of photons of energy e=hf even hypothetically. There are no photons.

No experiment is required to find out if hypothetical photons have a mass, because the number of photons is so immense that if photons have a mass, you will be knocked out by the sheer force of it. Light has no momentum, no energy, no mass, no heat, no entropy, no temperature. Maxwell equations for propagation of light cannot be transformed onto inertial frames. Light is not relative. Lorentz-Einstein Physics is a result of a mathematical oversight. Special Relativity is both mathematically and conceptually false. Light does not have a Lorentz Force. The force F=q(E+vB) for a charge q traveling at speed v in the fields E and B applies only for static electric fields E and static magnetic fields B; it does not apply for light. Maxwell equations are not transformable onto inertial frames.

Spin is Bipolar. Bipolar Spins cannot come in

Unipolar Up and Down Spin quanta. Bizarre Spin quanta are a result of misinterpretation of the Stern-Gerlach experiment. Particles are not waves and cannot be assumed to behave as waves. Bizarre particle waves are a crafted prophecy based on Einstein's misguided false theory of Special Relativity and the misinterpretation of the Double-Slit experiment for a beam of electrons. The direction of a Spin is not a parameter of the state of a particle. Spin-Up and Spin-Down are observer perspectives, not a state of a Spin. There cannot be Up and Down Spin quanta since Up has no existence without Down and vice versa.

Every spinning particle does not have a Spin Magnetic Field. Every Magnetic Field is not a Spin. Spin Magnetic Field is static. The propagating magnetic field of light is not a Spin. Polarization of light is unipolar, not a Spin. The existence of Vertical Polarization does not require a Horizontal Polarization and vice versa. Polarization is not limited to Horizontal and Vertical Polarization. Although there are infinitely Polarizations and their existence are many independent of observers, Spin can only be Up or Down and only exist relative to observers. Polarization is unaltered relative to observers. Unipolar Polarization cannot represent Bipolar Spins.

The Existence of Polarization does not require an Observer. However, Spin-Up or Spin-Down has no existence in the absence of an Observer. Although Spin-Up cannot exist without Spin-Down and vice versa, Horizontal Polarization can exist without Vertical Polarization and vice versa. Polarization is not equivalent to Spin. Polarization of light cannot be used to simulate the Spin of particles. Both Horizontally and Vertically polarized waves can be present in a light beam simultaneously. However, a particle cannot be both Spin-Up and Spin-Down simultaneously.

Spin Quanta are a result of misinterpretation of the Stern-Gerlach experiment. Up or Down Spin cannot be decomposed into the superposition of mutually independent Up or Down Spin components in x, y, z axes. Up or Down Spin cannot have x, y, and z axes components that are also Up or Down. The components of a Spin as Up or Down on x, y, z axes have no independent existence physically, and hence the representation of the x, y, z components of a Spin by mutually independent Pauli's Matrix Operators has no physical meaning. A Spin Operator cannot be represented by mutually independent Up or Down Spin Operators on x, y, and z axes. Up or Down component Spins on axes have no existence. Pauli's Spin matrices have no existence. If the x, y, and z axes component of a Spin is replaced by the Pauli's Spin Matrix Operators, the resulting Spin Matrix has no eigenvalue representation and hence cannot represent an Operator of an Observable.

Hypothetical Spin Quanta that defies reality replaced common-sense with nonsense. Quantum Mechanics (QM) was founded upon the conjecture that particles behave as waves of de Broglie wavelength, which is proportional to the reciprocal of the momentum of the particle. Momentum of electrically neutral particles neither can generate waves nor behave as a wave. De Broglie wavelength is incorrect and meaningless. Particle waves and wave particles are oxymorons. Wavelength has no independent existence. A wave does not come into existence just because de Broglie concocted a wavelength. There is no wavelength without amplitude. If a particle has a wavelength determined by the momentum of a particle, what determines the amplitude of the wave. Amplitude must have an existence for the existence of wavelength. A wave has no existence without amplitude.

Even under the false and meaningless de Broglie conjecture, no particle of mass has the energy required to be at de Broglie wavelength. A particle of mass only has 1/2 the required energy to have de Broglie wavelength. Spin 1/2 is a direct manifestation of the incorrect de Broglie wavelength. Meaningless and inexplicable Spin 1/2 simply disappears when the fitting wavelength that the energy of a particle of mass can support is used. Integer Spins are meaningless. Particle waves and wave particles are oxymorons. Moving particles do not generate waves if they are electrically neutral and stable. Spinning particles do not generate a magnetic field if the particle is electrically neutral. Only the moving charges generate electromagnetic radiation waves when the charges stopped, accelerated, or decelerated. The are wavelength of radiation due to the stopping of a particle of mass m, charge q, and speed u is inversely proportional to the chomentum gu, not to the momentum p=mu.

It is only for electrons, the electromagnetic wave resulting from the stopping of an electron of momentum p has a wavelength that is proportional to the 1/p since the mass of an electron charge is constant and charge has no existence without the mass of an electron. Generated electromagnetic waves due to the stopping of moving charge particles are not particle waves; they are not anchored to a particle. These generated waves can oscillate other electrons. A propagating electromagnetic wave cannot describe the position and momentum of a charged particle that generated the wave.

The interference pattern in the Double-Slit experiment is due to the electromagnetic waves generated by the stopping of the electrons at the Double-Slit barrier. In the case of a particle of mass m with charge q, speed u, and momentum p, the wavelength of the electromagnetic wave that is generated by the stopping of the charge is proportional to 1/qu, not to 1/p; this is not a particle wave. A particle does not have a momentum wave. The position and momentum of a mass must be unique. A mass cannot be in multiple places simultaneously. An electrically neutral particle of generate momentum cannot waves. р Electromagnetic waves generated by the stopping of a charged particle are not anchored to the particle and hence they do not describe the state of the particle.

The momentum of a particle does not generate an oscillation. The momentum of a particle does not

make it behave as a wave. A charged particle in the presence of light oscillates irrespective of whether the particle has momentum or not. If an electron moving at constant speed v oscillates orthogonally at frequency f, then the electron takes a sinusoidal path of wavelength v/f; this is not a wavelength of a propagating wave. If an orbiting electron in an Atom oscillates, it is not necessary for the length of the orbit to resonate with an integer number of wavelengths of oscillations. Bohr's Atomic model is based on an orbit in resonation with an integer multiple of wavelengths v/f of oscillations under the false assumption that any particle of momentum p oscillates with frequency f=e/h or de Broglie wavelength h/p. A particle of energy e does not have an oscillating frequency f=e/h or de Broglie wavelength h/p. Bohr's Atomic model is not real. In Bohr's Atomic model, the change of orbit requires for an electron to disappear from one orbit and reappear in another orbit, a Houdinification.

Momentum does not make a particle behave as a wave. It is only that a charge particle oscillates at frequency f in the presence of electromagnetic waves of frequency f irrespective of whether the particle has a momentum or not. An electron of momentum p generates electromagnetic waves of wavelength proportional to 1/p if the electron is stopped. A particle does not have relativistic energy. A particle of mass m at rest cannot have rest energy e=(mc)c relative to light since light is not relative. The energy of a particle of momentum p has nothing to do with the speed of light and the energy of a particle of momentum p is not e=pc. De Broglie wavelength h/p is hypothetical and meaningless. The momentum p of a particle does not make it oscillate and does not have a wavelength. A charge particle oscillates in the presence of electromagnetic waves or light irrespective of whether the particle has momentum or not. A particle of momentum is not a wave. A particle wave is an oxymoron.

Nothing in nature is probabilistic. Probability is a human invention. Everything that happens in the Stern-Gerlach experiment is deterministic. Probability interpretation of the Stern-Gerlach Experiment is simply bogus. A Spin cannot be spatially quantized as Up and Down. Vectors cannot be quantized. Any quantity that has a specific belonging cannot be quantized due to unavailability of a mechanism to integrate the belonging information into the guanta. Unlike data quanta in the Internet where belonging information is carried in the header, any belonging information is lost if the Spin and the Angular Momentum is quantized. Angular Momentum is specific to an orbiting system, and that information, without which the orbiting system has no existence, is lost if the Angular Momentum is guantized, and hence Angular Momentum and Spin cannot come in quanta. Vectors cannot come in quanta. Energy that belongs to a mass cannot come in guanta. There is no massless energy.

Light cannot be particles. There are no Bosons. Fractional or integer Spin quantization has no logical or physical meaning, and hence, Boson and Fermion

categorizations are meaningless. A particle has no Spin unless it is a particle that has been ejected from an Orbiting System. Spin is an inherent property of an Orbiting System to counteract the Angular Momentum of the Orbiting System. Even though an Atom is electrically neutral, an Atom has a Spin Magnetic Moment (SMM) since it is an Orbiting System of charge particles. The net SMM of an Atom due to the Spins of electrons is zero since the SMM of neighboring electrons are of opposite polarities due to magnetic coupling of neighboring electrons. When Orbiting Systems such as Atoms Spin, the spinning nucleus takes all the bound electrons on a Merry-Go-Round ride creating circular current loops that generate a SMM. Merry-Go-round SMM cancels out with the Orbit Magnetic Moment (OMM) since they are equal and opposite. SMM of an Atom is mainly due to the Spin of the nucleus itself. The Orientation of an Atom is its direction of SMM, the Spin. The SMM of neighboring Atoms are of opposite polarities due to magnetic coupling of neighboring Atoms. What is responsible for splitting a beam of Silver Atoms into two beams of equal number of Atoms by a Stern-Gerlach Magnetic Field (SGMF) is the magnetic coupling of the SMM between neighboring Atoms. There is nothing mysterious or probabilistic about the split of a beam of Atoms by a Stern-Gerlach Device.

The neighboring Atoms in an incoming beam are of opposite Spin. The fact that the SGMF splits a beam of Atoms into Up and Down beams of equal number of Atoms is an indication that Stern-Gerlach Experiment has no probability involvement. When the SGMF is rotated, split beams will also rotate in-phase. Spin of an Atom or a charge particle set by SGMF is volatile. No permanent Spin setting of an Atom or a charge particle is possible. Stern-Gerlach Device is neither a Spin setting device nor a spin measuring instrument. SGMF cannot provide the component of a Spin on an axis. It is the whole Spin that aligns with SGMF, not a component of Spin in the direction of the SGMF. Components of Spin Magnetic Moment along axes cannot be obtained using Stern-Gerlach Device. It is the whole Spin that aligns with an External Magnetic field, not a component of the Spin along the magnetic field. If a beam of electrons is used in place of an electrically neutral beam of Atoms, the Split Beams will take spiral paths. For electrically neutral a beam of Atoms, the Split Beams take linear paths.

A particle does not have a memory of its direction of Spin. Spin has no Up or Down direction without an Observer. The direction of Spin is Observer dependent. The direction of Spin that has no existence without an Observer cannot be a parameter of the state of a particle. An Atom does not have unipolar Spin-Up or Spin-Down states since Spin is Bipolar. A Bipolar Spin does not have Up or Down signatures unto itself. Up has no existence without Down and vice versa.

When the first Atom in a beam of Atoms enters SGMF, it always aligns towards the SGMF and drifts Up, unless the Atom enters with the orientation against the SGMF, in which case, it drifts Down. The orientation of the Atom that follows is always against the orientation of the previous Atom due to magnetic coupling. If an Atom is deflected toward SGMF (Spin-Up), it only means that the actual orientation of SMM or the Spin of an Atom was not against SGMF. SGMF is blind to the actual direction of the Spin Magnetic Moment or the Spin of an Atom or a charged particle. SGMF cannot split an electrically neutral beam of particles. Independent of the actual Spin of an Atom and the direction of the Stern-Gerlach Device, the Spin of any Atom in the SGMF is either aligned with (Spin-Up) or against (Spin-Down) the SGMF. You are either with us or against us, the Bushism — if you are not against us, we will torque you Up; if you are against us, we will send you Down.

When Spin-Up and Spin-Down split beams are out of the SGMF, they are no longer Spin-Up, or Spin-Down beams since the Spins realign themselves in the absence of an external magnetic field due to the magnetic coupling of neighbors; they will be just like the original beam that entered the SGMF except that each outgoing beams now has only a half of the Atoms of the original beam. If you send the Spin-Up beam from a SGMF through a second SGMF placed in series and in-phase with the first SGMF, the beam will pass through without a split since it is equivalent to the extension of the length of the first SGMF; no Berlin-Hagen interpretation or collapsing wave function is called for.

If the second SGMF is in series but out-of-phase, electrons have to leave the first SGMF to enter the second SGMF and as a result, once the Up beam leaves the first SGMF, the orientation of the spins of the neighboring Spins will be opposite to each other due to magnetic coupling of neighbors. The beam entering the second SGMF will be just as the original beam entering the first Stern-Gerlach Device, but with half the number of electrons. Just as in the case of the original beam, an Up or Down beam entering the second out-of-phase SGMF will re-split the beam into two beams of equal number of atoms.

There is nothing spooky about the beam splitting in SGMF. There is no probability involved in the Stern-Gerlach Device. Nature does not do probability. Spin-Up and Spin-Down are not states of a particle since they have no existence without Observers. Entities that have no existence without an Observer cannot be a parameter of the state of a particle. Entities that have no existence without an Observer cannot come in quanta. Spin-Up for one observer can be Spin-Down for another observer and hence cannot come in Up and Down quanta. Up has no existence without Down and Down has no existence without Up.

Any two neighboring electrons have opposite Spin due to the attraction and repulsion of magnetic polarities of SMM; it is not an exclusion principle; no Pauli matrices required. If the x, y, and z components of a Spin Operator **S** are replaced by Pauli's 2D Spin Matrices, the resulting Matrix **S** is no longer square, no longer Hermitian, no longer invertible, and does not have eigenvalue representation, and hence the resulting Matrix **S** does not represent a Spin Operator of an Observable. Pauli's Spin Matrices cannot exist. Spin is 3D and hence the Spin Matrices cannot be 2D Operators.

The components of a Up or Down Spin on axes cannot be replaced by independent Up or Down operators. A Bipolar 3D Spin cannot be represented by 2D unipolar orthogonal Up and Down vectors. Angular Momentum and Spin Operators have no existence without Position and Momentum Operators. For Angular Momentum and Spin to be Matrix Operators, the Position and Momentum must also be Matrix Operators. Position and Momentum Matrix Operators cannot exist in QM since matrices do not satisfy non-commutative relationships, and the eigenvalue representation of Observables based on the Matrix Operators is not unique. The representation of Observables must be unique. Neither the finite dimensional nor the infinite dimensional matrix Operators can be in Quantum Mechanics. Quantum Mechanism has broken the fundamental principle of modeling that the model must be unique and realistic.

If the position and momentum are assumed to behave as a wave, the Position Operator cannot be defined as the position itself. If the Position Operator is defined as the position itself, the position and momentum cannot be assumed to behave as a wave. The Position and Momentum Operators in Quantum Mechanics are mutually contradictory; they cannot co-exist. If the position and momentum are assumed to behave as a wave, the Position and Momentum Operators are predefined by the plane wave itself and they are a complementary or conjugate pair; they commute.

The eigenspaces of the Position and Momentum Operators must be unique. If the Position is assumed to be the position itself, the eigenspace of the Position Operator is not unique and the eigenspace of the Momentum Operator is also an eigenspace of the Position Operator, and as a result, the Position and Momentum Operators have a shared eigenspace; the position and momentum are simultaneously measurable. There is no measurement problem since the momentum at any given position is given by the rate of displacement at that position per unit mass and as a result, the precision of momentum and the precision of position are directly related, not inversely. The Heisenberg Uncertainty principle contradicts the definition of momentum and it is meaningless. The position has to change for the momentum to exist at a position. There is no momentum without the change of position and the passing of time. It is not the measurement of position that alters the momentum or the measurement of momentum that alters the position, the very existence of momentum alters the position and there will not be a momentum if the position is unchanged. The position and momentum are simultaneously measurable. A single radar pulse provides the position and momentum of any particle simultaneously.

Matrices of infinite order cannot be in QM since they are not invertible, not guaranteed to be Hermitian, and have no eigenvalue representation. An

Operator without eigenvalue representation is not an Operator of an Observable and useless in Quantum Mechanics. A Spin Operator with Pauli matrices as its x, y, and z axes components has no eigenvalue representation and has no existence. Quantization of Spin as Spin-Up and Spin-Down and representing them by 2D orthogonal vectors from Pauli's 2D Matrix Operators cannot be done without magnetic monopoles or Spin monopoles. Pauli's 2D Matrix Operators cannot represent Observables. There are no magnetic monopoles or Spin monopoles. There is no Spin-Up without Spin-Down and vice versa; Spin-Up and Spin-Down are non-separable and cannot be in a superposition. Only the unipolar entities are separable and can be in a superposition. Polarization of light can be in a superposition. The Spin of an Atom or charge particle cannot be in superposition.

A Quantum Bit or Q-Bit based on the Polarization of light has nothing to do with Spin; it is just an Optical Processor, an Optical Bit or O-Bit. Polarization is Unipolar. Spin is Bipolar. Polarization is not Spin. Spin is not Polarization. Spin Magnetic Moment is static. A propagating magnetic field is not a Spin. Every Magnetic Field is not a Spin. Every Spin does not generate a Spin Magnetic Moment. Unlike the Spin of a particle, both Horizontally and Vertically polarized waves can be present in light simultaneously: they can also be separated since Polarization is Unipolar. Although Spin can either be Up or Down, and Spin-Up or Spin-Down can only exist relative to an Observer. there can be infinitely many Polarizations. Polarization of light is independent of Observers. Horizontal Polarization can exist without Vertical Polarization and vice versa, but this is not the case for Spin. There cannot be a Q-Bit based on the Spin of an Atom since the Spin-Up and Spin-Down are not states of an Atom and cannot be in a Superposition. Entanglement of the Spins of neighboring Atoms is the magnetic coupling, and it is real. The Entanglement of Spins of neighboring particles is natural and no Stern-Gerlach Device is required for Entanglement. However, there is no long distance entanglement of Spins that goes beyond the range of magnetic coupling, which is very limited

The probability distribution for finding a particle at a position cannot consist of zeros. A propagating wave has zero crossing and the amplitude of a wave is subjected to attenuation. A normalized square amplitude of a propagating wave with zeros cannot be a probability distribution. A propagating wave has no anchorage to a particle that generated it and hence it cannot describe the probability of finding the particle. The electromagnetic waves resulting from the stopping of a charged particle are not anchored to the particle and they do not have the information of the position and momentum of the particle at any time. There are no particle waves.

Without change of time, the position of a particle cannot change and the momentum has no existence. The momentum of a charge particle cannot change without radiation loss. Momentum has no existence without change of position and passing of time. The position and momentum of a particle cannot have multiple values without mass being able to be at multiple places simultaneously, which is not possible. The position and momentum of an electron in an atom cannot be uncertain since the uncertainty of the position and momentum breed radiation. An electron in an Atom orbiting at constant speed on a circular orbit does not radiate but an electron with uncertain position and momentum will radiate. Quantum Mechanics defeats the very purpose it was invented for, self-contradictory.

Probability distribution only exists for the past, not for the present. Probability is a human invention, not a nature's process. Nature does not do probability. Nothing in nature is probabilistic. Probability is a result of our ignorance of the underlying physics of nature. Waves have no existence without propagation, and propagating waves are subjected to attenuation and wavelength shift. A propagating wave cannot describe the state of the particle that generated it since a propagating wave has no anchorage to the particle. Oscillation of an orbiting particle in an Atom is deterministic, not probabilistic; it is not a wave. Oscillation of an electron generates electromagnetic waves and electromagnetic waves oscillate electrons. Nature does not normalize, and Quantum Mechanics existence without normalization. has no The wavelength of an electromagnetic wave generated by the stopping of a charged particle can be used to obtain the speed of the particle when it was stopped, but it says nothing about the momentum or the position of the particle at any other time. Electromagnetic waves generated from the stopping of a charge particle are not anchored to the particle and hence cannot provide the position and momentum of the particle.

There is no measurement problem. Position and momentum do not have to be obtained separately. The position and momentum can be obtained simultaneously. The momentum requires the change of position by the definition of momentum. There is no momentum without the change of position and the passing of time. Momentum has no existence if position is fixed. The position and time must change for the existence of momentum. The position and momentum are simultaneously measurable. One radar pulse is all that is required to simultaneously obtain both position and momentum of a particle. The precision of momentum is directly proportional to the precision of position, not inversely. Heisenberg's Uncertainty Principle is meaningless. A particle of mass cannot be a wave and the oscillation of a particle in its orbit is not a wave, and hence the Schrodinger equation is meaningless. The claim that a particle moving at constant momentum behaves as a wave is self-contradictory.

There is no acceleration without motion in the direction of the force. An orbiting object on a circular path does not have an acceleration in the direction of the centrifugal force since there is no radial motion. A force is not acceleration unless there is a motion. An

orbiting electron does not have motion in the direction of the centrifugal force and hence has no acceleration or change of momentum. There is no radiation without the change of momentum of a charge particle. An electron orbiting in a circular path at constant speed has no change of momentum in any direction and hence orbiting electrons in an Atom do not radiate; no Quantum Mechanics is required. Although there is no acceleration without a force, the existence of force does not require acceleration. Newton's second law F=ma does not apply to objects at standstill, where F is the external force, m is the mass, and a is the acceleration; it applies only for objects in motion.

If the momentum is constant, the position of a particle takes a linear or circular path, not a wave. The momentum of a particle has no existence without change of position, and the change of position cannot take place without the passing of time. The position and momentum are mutually dependent and hence not a Fourier Transform pair. Position-momentum function is non-separable from the time-frequency function in the wave equation since there is no change of momentum without passing of time. A particle of mass cannot be in multiple states simultaneously; to claim otherwise is voodoo physics, not science. The Heisenberg Uncertainty Principle is false since the oscillation of a particle in its orbit is not a propagating wave and the position and momentum cannot be a Fourier Transform pair. An object of mass cannot be part of a Fourier Transform pair. The position and momentum of a mass must be unique; to claim otherwise is voodoo Physics.

The precision of the momentum is directly proportional to the precision of the position and hence Heisenberg's Uncertainty Principle is not real, it is contradictory and meaningless. State of an electron in an Atom must be certain since uncertainty leads to radiation loss. Electrons in circular orbits in Atoms do not radiate and hence Quantum Mechanics is not real and not required. Oscillating particle in its orbit is not a wave and hence the de Broglie wavelength and the Schrodinger wave equation is meaningless. A particle of mass cannot disappear from one orbit and reappear in another orbit without crossing distance in between and hence Bohr's Atomic model is voodoo Physics. Lorentz Transform and Einstein's Special Relativity are not the same. Lorentz Transform cannot transform Maxwell equations for propagation of light onto inertial frames. Einstein's Special Relativity is a mathematical and conceptual blunder. Spin of an Atom or a charged particle in an external magnetic field is volatile; the alignment of the Spin of the particle with the external magnetic field does not remain when the particle is out of the magnetic field. The setting of the Spin of a particle by an external magnetic field is volatile.

Particle waves and wave particles are oxymorons. Particles are not waves. Waves are not particles. Polarization is not Spin. Spin is not Polarization. Spin Magnetic Moment is static. The direction of the magnetic field of light is not static. Electromagnetic radiation waves due to the change of momentum of a

charged particle is real and exists at any instant of time whereas probability distribution only exists for the past, not for the present. A propagating wave cannot be anchored to a particle and hence cannot represent а probability distribution of the position and momentum of a particle. The momentum of electrically neutral particles do not generate waves; they do not behave as waves. A particle behaving as a wave cannot have constant momentum, and a particle of constant momentum cannot behave as a wave. A propagating wave cannot represent a probability distribution. Maxwell equations for propagation of light are not probability distributions for finding hypothetical photons or light quanta. Light is not particles. Magnetic field of light is not a Spin of a photon. A particle can exist without Spin Magnetic Moment. Spin magnetic field is not required for the existence of a particle. An electrically neutral particle has no Spin Magnetic Moment. Any particle that has not been ejected from an orbiting system has no Spin. Light has no existence without a magnetic field. Spin Magnetic Moment is static while magnetic field of light is not. Light does not have a Spin. Hypothetical photons do not have Spin.

Electron Microscopes have nothing to do with motion of mass, momentum, hypothetical particle waves, or Quantum Mechanics; they have everything to do with motion of a charge and the speed of the charge, chomentum, the product of the charge and the speed of the charge. In Particle Microscopes, particles are just chauffeurs for charges since a charge has neither an existence nor a motion without a particle of mass. Image resolution of Particle Microscopes decreases with the increase of particle mass due to the decrease in speed for fixed momentum, and increases with the increase of charge and speed; no image is generated if particles are neutral and stable, which are direct contradictions to de Broglie wavelength and QM.

What generates an image in Electron Microscopes is motion of charges, chomentum, not the motion of mass, momentum, or particle waves. Electromagnetic radiation resulting from the stopping of charged particles by a specimen generates an image of the specimen in an Electron Microscope. Wavelength is inversely proportional to the chomentum qu (the product of the charge q and the speed u), not to the momentum mu (the product of the mass m and the speed u): the proportionality factor or the radiation parameter can be determined by using the Double-Slit experiment. For a beam of electrons, the product of the charge q and its speed u or the chomentum qu is proportional to the momentum p of electrons. It is not the wavelength of hypothetical particle waves or de Broglie waves that is proportional to 1/p, it is the wavelength of electromagnetic waves generated by stopping of electrons that is proportional to 1/p.

Mass is not relative. The mass of an object cannot depend on its speed. If the measured mass of an object depends on the speed, it is the measuring instrument that is speed dependent, not the mass itself. The dependence of a measuring instrument on its speed cannot be forced onto mass itself. If the mass is relative, the energy e will not be real, e=pc+j(mc)c or e=pc-j(mc)c. Einstein's relativistic energy is not real. Einstein's relativistic energy of a particle is meaningless and cannot exist.

It does not matter how costly or awe-inspiring particle accelerators are, high energy particle accelerators only provide data. The discovery of particles by analyzing the data from particle accelerators is based on a single equation, Einstein's relativistic energy of a particle. Einstein's Special Relativity is both mathematically and conceptually invalid and hence the particles that have been discovered by using the Relativistic Energy are not real, they are bogus. The whole process of the discovery of fundamental particles of nature using the collision of particles in high-energy Particle Colliders is deceptive. You cannot obtain the fundamental particles of nature by colliding charge particles, protons.

The claim that all the fundamental particles of nature including the illusive Higgs Boson as predicted by the Standard Model have been found by colliding particles at high energy particle accelerators such as LHC is false and those discovered particles are not real, bogus. The Higgs Boson cannot even exist since a single field cannot propagate. The Higgs field cannot even exist as a static field without a Higgs source. Propagation of light is not relative and hence Einstein's relative energy has no existence. Although Particle Accelerators are awe inspiring, they only provide the data. The validity of discoveries depends on the validity of the analysis of the data. The analysis of data for finding new particles relied upon Einstein's relativistic energy in Special Relativity. Special Relativity is invalid both mathematically and conceptually, and hence the claims of discoveries of new particles in particle colliders are bogus; they are not real. Fundamental particles of nature cannot be obtained by colliding charged particles. Fundamental particles of nature cannot be obtained by using the Relativistic Energy; Relativistic Energy does not exist. Energy is not relative. Mass is not relative. Light is not relative. Observers cannot bend light. Gravity cannot bend light in a vacuum.

Reality does not depend on Observers. A train does not derail relative to observers. Speed of light or the frequency of a light source does not alter relative to observers. The motion of a light source does not alter the speed of light or the frequency of light of the source. The path of light does not alter relative to observers. We cannot alter the frequency of a light source by running towards it although our measurement of it is different. We cannot make a sedentary obese person lose weight by running away from the person. Observers cannot derail trains. Observer cannot derail light.

Any entity that has no existence without observers is not a state of a particle. The state of a particle has an existence independent of observers. It is the Observer misinterpretation of experiments and the building of false theories based on those experimental misinterpretations in Physics that has turned common-sense into non-sense, and physics into voodoo-physics. If it is nonsense, it is a religion; it ain't science. All the religious doctrines are stone-age nonsense accepted blindly under coercion. How can the stone-age and flat-earth or earth-centric era men who did not have a clue to what orbits what be messengers of a creator or prophets? Modern Physics is voodoo-Physics that is blindly accepted by students under coercion in many forms just like religions; they learn what is in the text and chant faithfully or they won't graduate or find employment; parayas.

Particle waves and gravitational waves are fantasy waves. Probability is a result of our ignorance of the underlying physics. Probability does not provide an understanding of nature. Probability provides a means for providing а temporary pseudo-objective explanation of nature until the underlying physics is discovered. Probabilistic description is never a means to an understanding. Bipolar Spin cannot have Unipolar Up and Down states. Polarization is Unipolar. There is no Up or Down in a Polarization. Horizontally and Vertically Polarized light cannot simulate Up and Down Spin of a particle. There are infinitely many Polarizations that can exist simultaneously.

Polarization is not a Spin. Magnetic field of a propagating wave is not a Spin. Spin Magnetic Moment is Static, not a wave. Particles are not waves. Waves are not particles. Nothing in nature can come in guanta without means to carry the belonging information. Energy cannot be quantized as e=hf since frequency has no independent existence. A moving charge particle generates propagating waves; these waves do not describe the state of the particle that generated them. Light cannot consist of light quanta or photons of energy e=hf. The claim that Millikan's and Lenard's photoelectric experiments proved Einstein's photon theory is false, a pure deception. Neither Millikan nor Lenard carried out photoelectric experiments for varying amplitudes of light. Amplitude of light cannot be varied by dimming the light. Dimming the light only changes the rate of light burst released from a source, not the amplitude. That is the reason when a light source is dimmed low enough, we are able to observe individual light bursts. These individual wave bursts are waves, not particles or photons. To change the amplitude, light bursts must be sent through a semi-transparent reflector before light reaches the Atoms in electron electrons. There is a frequency cut-off as well as an amplitude fut-off for photoelectric effect. If light comes in energy guanta e=hf, the spectrum cannot be continuous and vice versa. Photons are a result of theoretical, conceptual, and experimental blunder.

A train does not derail relative to observers. The path of light is not altered relative to observers. Einstein Special relativity is false. Time cannot be relative. Mass is not relative. The mass of an object cannot warp space. If the space is warpable, it is the volume of an object that warps the space, not the mass. Space is not warpable. It is the medium that is warped by a mass. There is no spacetime function since Maxwell equations are not transformable onto frames and Special Relativity is a inertial mathematical and conceptual blunder. There is no acceleration without motion. Gravity is not acceleration. Einstein's Equivalence Principle is false. Time is a definition, not a dimension. Universe is 3D. No species can exist without a mechanism to detect the dimension of space. For us humans, the detector for determining the dimensions of space is in our ears. Every species has a mechanism for detecting the dimensions of space. No species can function without a mechanism to detect the dimensions of space. Space is 3D. Einstein's Special Relativity and General Relativity are false and meaningless. Time and mass are absolute. If Einstein had considered a beam of light at an angle to the direction of motion of a train instead of a light beam orthogonal to the direction of a moving train, he should have realized the mockery of Special Relativity. IF time is relative, time will be directional. Observers cannot tilt a moving arrow. Observers cannot bend light. Gravity cannot bend light. Gravity cannot shift frequency. Gravity cannot slow down time itself.

The blueshift or redshift of light near a gravitational object is not a direct result of gravity affecting light. Neither the gravity nor observers can bend light. There is no redshift or blueshift of light near a gravitational object in the absence of a medium, in a vacuum. Clocks are affected by gravity just as any other mass is affected by gravity. Clocks do not determine time. Clocks measure time. Time cannot be defined as the average of a forward and backward time of a beam of light. Special Relativity with time defined as the average forward and backward time of a beam of light does not apply to real-time systems.

Universe cannot expand. Expanding universe cannot stretch the wavelength or a redshift of light since waves are not anchored to space. Radial motion of galaxies cannot be attributed to a universe expansion since the inter-galactic distances of gravitationally bound galaxies cannot be altered by a universe expansion; galaxies are not anchored to space. Redshift of a star in a galaxy cannot be attributed to a radial motion of the galaxy. If a galaxy has a radial motion, all the stars in the galaxy must have the same redshift. Hubble's law v=Hd is false, utter nonsense. You cannot discover natural laws by least squares plots. The Hubble constant is an experimental blunder. Age of the universe cannot be given by the inverse of Hubble's Constant since age cannot be a constant. You cannot use the redshift of a star in a galaxy to make the false claim that the galaxy is moving away. The radial motion of galaxies cannot generate redshifts. Expanding space cannot cause redshifts. Space cannot expand.

The redshift of a star is due to the negative density gradient of the medium along the path. The increasing redshift of a star is a result of the increasing density of the medium due to the accumulation of material ejected from the stars over time. The variation of the redshift or blueshift is a result of the variation of the density gradient of the medium along the path. The increasing redshift cannot be attributed to an accelerated expansion of the universe. Universe is neither expanding nor accelerating. There never was a bigbang. Blackholes are not holes, they are dense objects. Black Holes cannot prevent radially outgoing light from escaping and radially incoming light from partially reflecting back; however, outgoing light is subjected to a large redshift due to the large negative density gradient of the medium surrounding the blackhole shifting the wavelength into below visible region.

The visible universe is a moving horizon determined by the wavelength shift with the distance in the infinite universe. Kepler's laws do not apply to orbiting systems of stars. The Dark Matter is a result of the underestimation of star orbiting systems. The Dark energy is a result of misinterpretation of star redshift. Hypothetical Dark Matter and Dark Energy are not required; they do not exist. Special Relativity is not required for light to propagate at constant speed on its path relative to observers since observers cannot derail trains. Propagation of light is not relative. Observers cannot bend light. A moving arrow does not tilt relative to observers. Gravity cannot bend light in a vacuum. Time and mass are not relative.

Physical reality is observer independent. Lorentz-Einstein Physics and Quantum Mechanics are a result of mathematical and conceptual blunders falsely validated by experimental misinterpretations. If the energy is guantized as e=hf, the frequency spectrum cannot be continuous, and the energy of even the narrowest band spectrum will be infinite. Planck's blackbody Spectrum is cavity dependent. Planck's conjecture e=hf is meaningless since frequency has no existence without amplitude and energy has no existence without an association of particles of mass. There is no massless energy. Potential energy is not energy unless it is converted into energy. There is no negative energy. Energy must be positive. Energy cannot be given by e=hf. Frequency has no energy. There is no massless energy. Modern Physics is a boondoggle in need of a total overhaul.

Modern Physics, Astrophysics, and Cosmology are a boondoggle; they are a collection of mathematical oversights or deceptions, bizarre experimental misinterpretations, and conceptual faux pas. Modern Physics falls apart since light is not relative and Special Relativity is false and unnecessary. No Special Relativity is required since the path of light is unaltered relative to observers. Since light is not relative. Quantum Mechanics fails in its foundation. The Position operator cannot be the position itself if the position and momentum of a particle is assumed to behave as a wave. The position and momentum of a particle must be unique. The position and momentum cannot be assumed to behave as a wave. There is no wave particle duality. The false and mysterious claim that a particle is a wave and a wave is a particle and a particle can be multiple places is voodoo physics, not physics. Modern Physics has turned to a religion.

II. FITTING WAVELENGTH FOR HYPOTHETICAL PARTICLE-WAVES

Assumption Credibility:

A particle wave is an oxymoron. The concept of particle waves is meaningless. Particles cannot behave as waves. Momentum of a particle can neither behave as a wave nor generate waves. If you are going to assume particles to behave as waves of de Broglie wavelength, for that assumption to be credible, the energy of a particle must be sufficient for the particle to be at that wavelength. The energy of a hypothetical photon of momentum p is not the same as a particle of mass of the same momentum p. No particle has the energy required to be at de Broglie wavelength. The energy of a particle of mass of momentum p is not given by e=pc that is used in deriving the de Broglie wavelength. Light has no momentum, e≠pc. If you make the false assumption that light is particles or photons of energy e=hf and also make the false assumption that photons have momentum p, then you will have photons of energy e=pc. If you claim that if light behaves as particles, then, particles also must behave as waves, you cannot simply replace the momentum p in e=pc for a photon by the momentum p of a particle of mass since the momentum of photon is not the same as the momentum of a particle of mass due to the inability of a mass to have a constant speed from the start. The energy of a particle of momentum p is not given by e=pc. The energy of a particle of mass has nothing to do with the speed of light. The energy of a particle of mass m and momentum p is given by $e=p^2/2m$, not by e=pc.

For a particle of mass m and momentum p, $e\neq pc$. You cannot replace the momentum p in the energy of a hypothetical photon e=pc by the momentum p of a particle of mass since photons and particles of mass do not have equivalent properties. De Broglie's derivation is not just wrong, it also lacks the assumption-credibility. Einstein's hypothetical photons or light quanta cannot be assumed to have momentum since photons do not have standstill existence. Any entity that has momentum must be able to be stopped by applying equal and opposite momentum. An entity that cannot be stopped cannot have momentum.

Theorem: Fitting Wavelength

If a particle of mass m and momentum p is assumed to behave as a wave, the fitting wavelength for the particle that the energy of the particle can support is given by λ =2h/p, where p is the momentum of the particle, h is the Planck constant.

There are no particle-waves. A particle cannot be a wave. A wave cannot be a particle. The massless cannot be given momentum by proclamation. An object of mass cannot be turned to a wave by proclamation and experimental misinterpretation [2]. Having said that, however, if you still want to continue along the bizarre Quantum Mechanics based on the hypothetical particle-waves, it is essential, at least, to use the fitting wavelength of a particle-wave that the energy of a particle of mass can support. The use of the fitting wavelength will eliminate those mysterious outgrowths such as the meaningless Quantum Spin-1/2 and the Quantum Spin matrices in general. Let us see how to obtain the fitting wavelength of a hypothetical particle-wave.

Let us consider a matter particle of mass m and momentum p. The energy, e of the particle is given by, $e=p^2/2m$ (2.1)

where p²=p•p.

Now, as it is done in the Quantum Mechanics, if we incorrectly assume that the kinetic energy of a particle of mass m also quantized, we have,

(2.2)

e=hf where, h is the Planck constant and f is the frequency of hypothetical particle-wave. Not so surprisingly, nobody seems to know what is waving here at frequency f in a mass. Now, we have

p²/2m=hf	(2.3)
If the velocity of the particle is u, Eqn. (2.3) can be
written as,	

p(mu)/m=2hf	(2.4)

P (()
pu=2hf	(2.5)

where, $u^2 = u \cdot u$.

For a particle-wave of frequency f and wavelength λ traveling at speed **u**, we have,

··		
u 1/1.		

(2.6) Substituting for u in the equation. (2.5), we have, λ=2h/p. (2.7)

Since de Broglie wavelength is h/p, the actual particle wavelength is twice the de Broglie wavelength,

 λ =2(de Broglie wavelength). (2.8)In other words, the de Broglie wavelength is one half of the fitting wavelength. It is this wavelength error by a factor of one half that led to the mysterious Spin 1/2 that spooky-fied reality. If de Broglie had not made the mistake of getting the wavelength wrong in Quantum Mechanics, we would not be talking about or come across Spin-1/2.

If a particle is assumed to behave as a wave, the actual wavelength of the particle should be λ =2h/p. De Broglie wavelength for a particle should be the fitting wavelength for the energy of the particle, not the energy of a hypothetical light particle or a photon if such light particles exist; no such photons or light particles can exist. A particle does not have a wavelength. The concept of particle waves is moronical. De Broglie's wavelength for a particle of mass is moronical. The wavelength of a particle is meaningless. Coherent light cannot be spatially random particles or photons. The concept of photons or light particles is moronical. Einstein's Special Relativity and photons are moronical [15,16,4,6]. Light cannot be photons of energy e=hf. Plank's e=hf does not apply to light. Frequency has no energy. Wave burst is not a particle. The wavelength of a photon cannot be transferred to a wavelength of a particle of mass directly since the energy of a hypothetical photon of momentum p is not the same as the energy
of a mass of momentum p. There are no photons or light particles. Light is always a wave, never a particle [8]. A particle does not behave as a wave. The oscillation of a particle is not a propagating wave.

Only a particle such as hypothetical photons that start and remain at constant speed c can have energy e=pc and de Broglie wavelength λ =h/p if light is falsely assumed to be particles of momentum p. Unlike hypothetical photons, a real particle with a mass m does not start and remain at constant speed or momentum. A particle with a mass always starts at standstill or zero momentum and gradually builds up the speed or momentum.

If a matter particle of mass m, velocity **u** and momentum **p** is to have a hypothetical de Broglie wavelength λ =h/p, then, the particle must have kinetic e=pc; this is an amount of energy no real particle of mass m can have. Unlike a hypothetical photon that has speed c from the start, a particle of mass cannot start at constant speed. Any particle of mass m contains only one-half of the energy that is required for a particle to have de Broglie wavelength.

De Broglie Wavelength of a matter particle is incorrect, $\lambda \neq h/p$. Only a Double-Slit Blunder [2] can validate de Broglie wavelength; no real genuine experiment can. The fitting hypothetical wavelength must be,

λ=2h/p.

It is the de Broglie wavelength, which is used in Quantum Mechanics, being off by one-half from the actual wavelength λ that has given the one-half the prominence it does not deserve in Quantum Mechanics. The so-called dreaded, mysterious, and meaningless Quantum Spin 1/2 that nobody is capable of explaining what it really is, yet only a few spin-doctors who enthusiastically talk about it as if only they have the intelligence to comprehend it even though they also have absolutely no clue to what it really is, disappears completely when the actual wavelength of a matter particle λ =2h/p is used in Quantum Mechanics.

Not surprisingly, there is not a single book that explains clearly, without any ambiguity, what Quantum Spin-1/2 is. Spin-doctors just go on babbling like politicians answering a question from a journalist when they have no answer to the question; they just keep talking to occupy time until the questioner backs away in confused frustration. Nobody has a clue what Spin-1/2 is because there is no such thing. They just repeat what is written in the textbooks like parrots without having any clue to what they are talking about; that is exactly what most Professors do in the class. One thing is clear though, anybody who has a real understanding of Spin-1/2 is not going to consider it as real, because it is total nonsense just like a religious dogma. For some unknown reason, religiously accepted doctrines, however inaccurate, happen to be protectively guarded while rejecting any contrary view, however accurate, as uncivilized. In some cases, it is done militarily by countries still run by such backward flat-earth and earth-centric era religious doctrines, while in other cases through censorship by various cults under disguise as journal editors and reviewers. Spin-1/2, Quantum Mechanics, and Relativity have taken the statute of religious doctrines. No one is allowed to question their validity; practitioners are blind to their invalidity.

With the fitting wavelength in place, not only the disappears, Quantum Spin-1/2 Spin Matrices disappear completely since spin cannot be 2D. Matrices cannot be Operators of observables in Quantum Mechanics. Heisenberg's derivation of Quantum Mechanics based on matrix operators of infinite dimensions cannot hold since matrix Operators of infinite dimensions cannot represent Operators of Observables. For an Operator to be the Operator of an Observable, the Operator must have eigenvalue representation. The matrices of infinite dimension do not have eigenvalue representation and hence matrices of infinite dimensions cannot be Operators of Observables.

Even if one chooses to take the wrong path of pretending particles to be waves, it is important to use the fitting wavelength that the energy of a particle of mass can support. If the fitting wavelength had been used in Quantum Mechanics, we would not have heard of some strange thing called Quantum Spin-1/2 and Quantum Spin in general, or even the most bizarre 2-Dimensional Quantum Spin Operators such as Pauli's Spin Matrices. How can there be 2-Dimensional Spin Operators when a particle cannot even exist in 2-Dimensional Space? Spin operators of Particles cannot be two dimensional. No Particle Spin can take place in 2-Dimensional space. An Up or Down Spin Operator cannot be represented by mutually independent Up or Down x, y, z axes Spin Operators. Pauli's 2D Spin Operators have no existence.

Lemma:

Bipolar Spins cannot have unipolar Up and Down states.

Lemma:

Bipolar Spin of particles of mass cannot be simulated by the Polarization of Light. Polarization of light is Unipolar. Horizontal and Vertical Polarization cannot be used to simulate the Up and Down Spins. Time varying magnetic field of photons is not a Spin. The magnetic field of light is not a Spin. Spin Magnetic Moment of a spinning charged particle is Static.

All we have to do to make the de Broglie wavelength fits the energy of a particle of mass m and momentum p is to replace Planck constant h by 2h everywhere except the time progression operator or the energy operator. Wavelength error has no direct effect on the time progression operator; the effect is indirect through Hamiltonian.

Lemma:

If a particle is assumed to behave as a wave, the wavelength that fits the energy of a particle of mass m

and momentum p is twice the de Broglie wavelength, $\lambda=2h/p$. De Broglie wavelength is $\lambda=h/p$.

Hypothetical Fitting Wavelength for a Particle:

If a particle of mass m and momentum p is falsely assumed to behave as a wave as de Broglie did, the fitting hypothetical wavelength for the particle in place of de Broglie wavelength is λ =2h/p,

Fitting Wavelength=2(de Broglie Wavelength).

III. QUANTUM MECHANICS OPERATORS UNDER THE FITTING WAVELENGTH λ=2h/p

The fact is that if the momentum of a particle is a constant, it cannot be assumed to behave as a wave. The constant momentum and wave assumption are mutually contradictory. If a particle is assumed to behave as a wave, it cannot have a constant momentum. If a particle has a constant momentum, it cannot behave as a wave. For a particle to behave as a wave requires a source of energy. The change of momentum cannot take place without work being done. Oscillation of an electron in its orbit is not a wave. If the position and momentum of a particle are probabilistic, the particle cannot behave as a wave. If the position and momentum of a particle are probabilistic, the partial derivatives $\partial/\partial x$ and $\partial/\partial p$ with respect to position and momentum are not defined; the Momentum Operator has no existence since the partial derivative with respect to position cannot be defined. If the position and momentum of a particle is assumed to behave as a wave, the Position Operator cannot be defined as the position itself. If the position and momentum of a particle is assumed to behave as a wave, the position and momentum of the particle cannot be probabilistic. The claim that the position and momentum of a particle are probabilistic are in contradiction with the assumption that the position and momentum of a particle behave as a wave. If the position and momentum of a particle is probabilistic, the Position and Momentum operators are not defined. The change of a position of a particle must be continuous; it cannot be probabilistic.

Theorem: Quantum Operators

The Time Evolution Operator or the Energy Operator ${\cal E}$ is the differential of the plane wave equation,

 $\psi(\mathbf{r}, \mathbf{k}, \omega, t) = A[\psi(\mathbf{r}, \mathbf{k}][\exp(-j\omega t)], where \psi(\mathbf{r}, \mathbf{k}] = \exp(j\mathbf{k}\cdot\mathbf{r})$ with respect to time t under the false assumption that the mechanical energy e is quantized as $e=\hbar\omega$ and the energy e is given as the eigenvalues of the Time Evolution Operator or the Energy Operator \mathcal{E} . The Momentum operator **P** is the differential of the plane wave equation $\psi(\mathbf{r}, \mathbf{k}, \omega, t)$ with respect to the position **r** under the hypothetical assumption $\lambda=2h/p$ or $k=p/2\hbar$. The Position Operator **r** is predefined as the differential of the plane wave equation $\psi(\mathbf{r}, \mathbf{k}, \omega, t)$ with respect to the momentum **p**. The position Operator cannot be assumed to be the position itself if the position and momentum are assumed to behave as a wave. Lemma: No Probability Wave Functions

Wave equation $\psi(\mathbf{r},t)$ cannot represent probability distribution since it has zero crossings and the area against neither r nor t can be unity. Function of run time or run position cannot be normalized for the area to be unity. Wave propagation is not a probability of finding a particle. The wave equation is not a probability of finding photons. Maxwell equations are not probabilities of finding photons. A normalized square amplitude of a wave cannot represent a probability distribution since а wave has zero-crossings. The Normalized square amplitude of a propagating wave for one cycle cannot represent a probability distribution.

Lemma:

A wave function $\psi(\mathbf{p},\mathbf{r})=(1/2\pi)^{1/2}\exp[(j/2\hbar)\mathbf{p}\cdot\mathbf{r}]$ that is normalized only for a duration of wavelength, does not represent a probability distribution. For a function to be a probability distribution, the area under the curve must be unity for the entire range of r and p, not just for a duration of a wavelength.

Particles cannot be waves. Waves cannot be particles. However, if you still want to consider particles as waves, for a particle of mass m and the momentum \mathbf{p} , we have the fitting wavelength λ that is consistent with the energy of the particle,

 $\lambda = 2h/p$ (3.1) The wave number k or the angular srequency, which is the frequency in spatial domain, is given by,

aomain,	 9	~,	
			(3.2)

(3.3)

Now, we have,

 $k=2\pi/\lambda$

k=p/2ħ

where *ħ*=h/2π.

Although this relationship $k=p/2\hbar$ stem from the hypothetical assumption that a particle of mass m and momentum p behave as a wave of wavelength λ =2h/p, the momentum p does not have the same characteristics as the wavenumber k. As a result, the momentum of a particle of mass cannot take the place of the wavenumber k in the wave equation. Quantum Mechanics have conveniently disregarded this incompatibility of the wave number k and momentum have Although can multiple values р. k simultaneously, the momentum of a particle of mass have multiple simultaneously. cannot values Momentum has no existence for a fixed time. Momentum has no existence for a fixed position.

At any time t, the plane wave $\psi(\mathbf{r},t)$ of wavenumber k and angular frequency ω is given by,

 $\psi(\mathbf{r},t)=A \exp(j\mathbf{k}\cdot\mathbf{r}) \exp(-j\omega t).$ (3.4) Substituting for k in eqn. (3.4) from equation (3.3), the hypothetical wave equation, $\psi(\mathbf{r},t)$ for a particle of momentum **p** at position **r** is given by,

 $\psi(\mathbf{r},t)=\mathbf{A} \exp[(j/2\hbar)\mathbf{p}\cdot\mathbf{r}] \exp(-j\omega t) \quad (3.5)$ where, $\mathbf{r}=(x,y,z)$, $\mathbf{p}=(p_x,p_y,p_z)$.

Lemma:

The wavenumber k in the wave equation cannot be replaced by the momentum of a particle p since

momentum does not have the same characteristics as the wavenumber k.

If we incorrectly assume a particle to behave as a wave, this $\psi(\mathbf{r},t)$ is the particle wave under the fitting wavelength that the energy of a particle can support if the Hamiltonian is an Identity Operator. Now, we can obtain the Operators for this hypothetical particle wave. It is only the Momentum Operator that is affected by the change of wavelength. The rest remains the same except the Hamiltonian if it is not an Identity Operator. The Hamiltonian in general is affected by the change of wavelength.

A. Momentum Operator:

By differentiating $\psi(\mathbf{r},t)$ with respect to \mathbf{r} , the Momentum operator \mathbf{P} is given by,

 $P=(2\hbar/j)\partial/\partial r$ (3.1.1) It is twice the Operator under de Broglie wavelength.

Lemma:

If the Position Operator is $\mathbf{P}=(2\hbar/j)\partial/\partial r$, then, the position of the particle cannot be probabilistic. If the position and momentum of a particle are probabilistic, the partial derivative with respect to the position is not defined and hence the Position Operator has no existence. The claim that the position and momentum of a particle are probabilistic and the definition of the Position Operator of a particle in Quantum Mechanics as $\mathbf{P}=(2\hbar/j)\partial/\partial r$ are mutually contradictory.

B. Position Operator:

If the position and momentum of a particle is assumed to behave as a wave, the Position and Momentum Operators are predefined by the plane-wave equation. However, in Quantum Mechanics, the fact that the Position Operator is predefined by the plane-wave equation was disregarded and the Position operator **R** is conveniently defined as the position itself,

R=rl (3.2.1) where **I** is the identity operator, and $\mathbf{r}=(x,y,z)$. This itself demonstrates the invalidity of Quantum Mechanics. You cannot define the Position Operator as you please if you assume a particle to behave as a wave. On the other hand, if you define the Position Operator as the position itself, the position and the momentum of a particle cannot be assumed to behave as a wave.

If the position and momentum of a particle is assumed to behave as a wave, there must be a mutual symmetry between the Position and Momentum Operators. The Position and Momentum Operators that emerge from the wave equation are mutually symmetric.

When the Position Operator is the position itself, the Position operator is unaffected by the change of the wavelength from de Broglie wavelength to the fitting wavelength that the energy of a particle can support. The Position Operator is unaffected by the change of wavelength. Lemma:

If the Position Operator **R** is defined to be the position itself, **R**=r**I**, then, the position and momentum of the particle cannot be assumed to behave as a wave. If the position and momentum are assumed to behave as a wave, then, the Position Operator must be given by \mathbf{R} =(2 \hbar /j) $\partial/\partial p$.

C. Energy Operator:

By differentiating $\psi(\mathbf{r},t)$ with respect to t, we	e have,
$\partial [\psi(\mathbf{r},t)]/\partial t = -j\omega\psi(\mathbf{r},t)$	(3.3.1)
Using operators, we have,	
∂/∂t =-jωl	(3.3.2)
where the energiar Lie on Identity Operator	

where, the operator I is an Identity Operator. Under the invalid assumption that the mechanical energy e is quantized, we have,

0,	e=ħω				(3.3.3)
ere	e=enerav	of the	narticle	iр	the kinetic energy

where, e=energy of the particle, i.e. the kinetic energy and the potential energy of the particle.

Substituting for ω in equation (3.3.2), we have,

 $\partial/\partial t = -j(e/\hbar)I$ (3.3.4) If the Hamiltonian or the energy operator of the particle is **H**, we have,

 $H\psi(\mathbf{r},t)=e\psi(\mathbf{r},t)$ (3.3.5) The energy e of the particle is an eigenvalue of the Hamiltonian or the energy Operator H.

From eqns. (3.3.4) and (3.3.5), we have the time evolution operator of the particle, **H** given by,

 $H=(-\hbar/j)\partial/\partial t$ (3.3.6) This is the Schrodinger Equation. There is nothing more to the Schrodinger Equation. Schrodinger equation is simply the differentiation of the plane wave equation with respect to time under the invalid assumption that the position and momentum of a particle behave as a wave and the Mechanical Energy of the particle is Quantized as e=hf. Mechanical Energy is continuous. Mechanical energy has no associated frequency and hence e=hf is meaningless for a particle of mass, e≠hf.

There is nothing called relativistic Schrodinger equation since Einstein's Special Relativity is a result of a mathematical and conceptual blunder [15,16,4]. Mass is not relative. Time is not relative. The propagation of light is not relative. A mass does not have relativistic energy. Since Special Relativity is false, Dirac equations have no existence.

Mechanical energy has a belonging. The energy of a particle belongs to that particle. An entity with a belonging cannot come in quanta. Mechanical Energy cannot come in Quanta and as a result, Schrodinger Equation is invalid. There is nothing waving in the Schrodinger Equation or the wave equation of a particle. Schrodinger wave does not have a conjugate partner wave. A wave without a conjugate partner wave cannot be a wave, cannot propagate.

Propagation requires a conjugate pair. A single field cannot propagate. Schrodinger wave equation does not have a conjugate partner. The Schrodinger wave equation cannot represent a wave. The claim that a particle with constant momentum p behaves as a wave is self-contradictory. The time evolution operator has no direct effect by the change of the de Broglie wavelength. However, it is indirectly affected by the wavelength since the Hamiltonian is affected by the change of wavelength through the Momentum Operator.

Lemma: Hypothetical Schrodinger Equation [7]

If a particle of Momentum **p** at Position **r** is incorrectly assumed to behave as a wave, $\psi(\mathbf{r},t)$, under the equally invalid assumption that the mechanical energy e of a particle is quantized, the Schrodinger equation,

 $\hat{H}\psi(\mathbf{r},t)=(-\hbar/j)\partial\psi(\mathbf{r},t)/\partial t$ (3.3.7) is nothing more than the time derivative of the plane wave $\psi(\mathbf{r},t)$ given by,

 $\psi(\mathbf{r},t)=A \exp[(j/2\hbar)\mathbf{p}\cdot\mathbf{r}] \exp[(-je/\hbar)t]$ (3.3.8) If **H** is the Energy Operator or the Hamiltonian of the particle, then,

 $H\psi(\mathbf{r},t)=e\psi(\mathbf{r},t). \tag{3.3.9}$ where,

H=P²/2m+V(r)I	(3.3.10)
P =(2ħ/j)∂/∂ r	(3.3.11)

 $V(\boldsymbol{r})$ is the potential energy and \boldsymbol{I} is an Identity operator.

The plane wave equation $\psi(\mathbf{r},t)$ under the energy constraints and the boundary condition of a particle is the Schrodinger equation. Wave function has no conjugate partner and hence cannot be a wave and cannot propagate.

Proof is straightforward since the Schrodinger equation is simply the time derivative of $\psi(\mathbf{r},t)$ under the false assumption that $\psi(\mathbf{r},\mathbf{p})=A \exp[(j/2\hbar)\mathbf{p}\cdot\mathbf{r}]$ is time independent. The position of a particle with momentum is time dependent. Momentum has no existence without the change of time. There is nothing more to the Schrodinger Equation. The position and momentum of a particle cannot be represented by a wave equation since the position and momentum of an object of mass must be unique. If you consider the momentum to be a constant, it cannot behave as a wave.

Lemma: Non-Separability

For a particle of Momentum **p** and Position **r**, the wavefunction $\psi(\mathbf{r},\mathbf{p})$ is time dependent since the position **r** and momentum **p** of a particle are time dependent. The position and momentum cannot vary without the change of time. The position and momentum cannot have multiple values at a given time. The wavefunction $\psi(\mathbf{r},t)$ cannot be separated into time dependent $\psi(e,t)$ and time independent $\psi(\mathbf{r},\mathbf{p})$ component functions. Quantum Mechanics has no existence without this separation.

Momentum **p** has no existence without the change of position and the passing of time. Position of a particle depends on momentum. The position **r** of a particle and momentum **p** are mutually dependent. There is no change of position and momentum without passing of time. As a result, wavefunction $\psi(\mathbf{r},\mathbf{p})$ is not time independent. Although the wavefunction $\psi(\mathbf{r},\mathbf{p})$ is time dependent, the derivation of the Schrodinger equation makes the invalid assumption that $\psi(\mathbf{r},\mathbf{p})$ is time independent. The derivation of the Schrodinger equation assumes incorrectly that the particle wavefunction $\psi(\mathbf{r},t)$ can be decomposed into time dependent $\psi(\mathbf{e},t)$ and time independent $\psi(\mathbf{r},\mathbf{p})$ component functions. We can write $\psi(\mathbf{r},t)$ as,

ψ(**r**,t)=A² ψ(**r**,**p**)ψ(e,t)(3.3.12)

where,

ψ(r , p)=A exp[(j/2ħ) p•r]	(3.3.13)
--	----------

$$\psi(e,t) = A \exp[(-j/\hbar)et]$$
 (3.3.14)

It is this separation allowed Schrodinger to represent the energy of a particle e as the eigenvalues of Hamiltonian **H**,

 $H\psi(\mathbf{r},\mathbf{p})=e\psi(\mathbf{r},\mathbf{p}) \qquad (3.3.15)$ where, $H=(-\hbar/j)\partial/\partial t$.

Since $\psi(\mathbf{r},\mathbf{p})$ is time dependent, this relationship does not hold in reality.

However, it is important to note that $\psi(\mathbf{r},\mathbf{p})=A \exp[(j/2\hbar)\mathbf{p}\cdot\mathbf{r}]$ is not time independent since there is no momentum without passing of time and the position of a particle with momentum is time dependent. Momentum cannot be time independent unless it is a constant. If the momentum is a constant the path is linear or circular, not a wave. However, there cannot be momentum without the change of time. Momentum cannot change without change of time. Momentum cannot change without change of position of a particle. Position of a particle cannot have a wave representation. The position and momentum of a particle cannot be a Fourier Transform pair.

Position of a particle cannot remain unchanged in the presence of momentum. The position of a particle cannot remain unchanged with the change of momentum. Position of a particle depends on momentum, and the momentum depends on time, and hence the position of a particle is also dependent on time. At any given instant of time, $\psi(\mathbf{r}, \mathbf{p})$ is a constant since the position and the momentum of a particle at any instant of time must be unique. As a result, the Schrodinger equation is false and the assumption that a particle behaves as a wave is invalid. The concept of particle waves is not just bizarre, it is meaningless.

You cannot assume $\psi(\mathbf{r},\mathbf{p})=A \exp[(i/2\hbar)\mathbf{p}\cdot\mathbf{r}]$ to be time independent when it is not. For $\psi(\mathbf{r},\mathbf{p})$ to be a wave function of a particle, the position **r** of a particle has to be able to change for a fixed momentum **p**, and the momentum **p** has to be able to change for a fixed position **r** of a particle at any fixed time t; this is impossible for a particle. You cannot just assume them to be so when they cannot be in reality. That is a major flaw in Quantum Mechanics; the position and momentum of a particle cannot be a wave; a particle of momentum does not have a wavelength. A particle is not going to behave as a wave just because somebody cooked up a wavelength by dubious means to obtain a PHD. You cannot claim that a particle can be in multiple places simultaneously, or at the same time, when it cannot be in reality. There is no mass restriction for a particle in the de Broglie wavelength or in the Schrodinger equation.

The mass is not an emergent property of a collection of particles. If the mass of a particle is m, the mass of the pile of n particles will be nm irrespective of whether the masses are stationary or moving at any speed. The mass is a fundamental property of a particle. Mass is not relative. The mass of a particle is independent of its speed or acceleration. The mass of a particle is independent of motion. The mass of a particle is independent of observers.

Lemma:

The mass of an object is not an emergent property of a pile of particles. If the mass of a particle is m, the mass of a pile of n particles is nm. The mass of an object is observer independent. The mass is a fundamental property of a particle. There is no particle without mass. The fundamental property of an entity is observer independent. Observers cannot alter reality. Observers cannot derail trains, cannot tilt arrows, or cannot bend light.

Lemma:

The Schrodinger equation is nothing more than the time derivative of the plane wave equation under the false assumption that the mechanical energy e is quantized as e=hf.

Lemma:

Eigenvalues are not unique and hence the state of a particle cannot be represented by eigenvalues. The state of a particle must be unique. The state of a particle is observer independent. The state of a particle cannot be represented by Operators.

Lemma:

Since the state of a particle is unique, parameters representing the state of a particle must be unique. Eigenvalues of a matrix Operator is not unique and hence cannot represent the state of a particle.

Lemma:

Mechanical Energy e of a particle has no associated frequency and hence mechanical energy cannot be quantized, e≠hf. The relationship e=hf is meaningless since frequency has no existence without amplitude. As a result, the Schrodinger equation does not hold true.

Lemma:

Irrespective of the size, a particle of mass does not behave as a wave. There is nothing waving in a mass. As a result, the Schrodinger equation does not hold true.

Property:

The Schrodinger equation is not a probability distribution since no wave equation can satisfy the properties of a probability distribution. Propagating waves cannot be normalized for the entire range and hence cannot represent a probability distribution. Wave normalized for the range of wavelength cannot represent a probability distribution. Nature does not do probability. Nature does not normalize. Particle waves are meaningless. A wave that consists of zero crossings cannot represent a probability distribution. The squaring of amplitude and normalization cannot eliminate the zeros. A particle cannot perform a disappearing act as Houdini did to cross zeros in a probability distribution.

D. Nature of Probability:

- Probability says what happens in the past, not what is about to happen.
- Nature has its own blueprint. Nature does not need probability.
- We do not have nature's blueprint. So, for us to make decisions today, we cannot wait till we find Nature's blueprint. As a temporary measure, we turn to probability in making decisions. Flipping Hamburgers as a temporary job is fine as long as you keep trying for a real job.
- Probability is a human creation, not a nature's process. It was invented to resolve a gambler's dilemma; how to divide a bet between betters when the match had to be stopped before completion due to bad weather.
- Run time function cannot be normalized for the area to be unity.
- Run position function cannot be normalized for the area to be unity.
- Wave of position, momentum, and time cannot be normalized for the area to be unity.
- Wave function normalized for the duration of a wavelength cannot represent a probability distribution.
- Waves have no existence without propagation. Wave equation is a run time function. A run time function cannot be normalized for the area to be unity for the entire range since the range is progressively changing.
- Probability distribution is not a wave. Wave is not a probability distribution.
- For the position and momentum to be a wave, the position and momentum must be deterministic. There is no probability here. A wave is deterministic.
- The area under probability distribution must be unity. Area under a propagating wave cannot be unity. Propagating waves cannot be normalized for the area to be unity. Propagating waves are subjected to attenuation and wavelength shift.
- Nature does not normalize. Probability cannot exist outside the human domain.
- Nature does not do probability. Nature does not have to do probability since there is no ignorance about the underlying physics of nature for nature. We rely on probability due to our ignorance about the underlying physics of nature.
- Probability is not a science, and science is not probability. A chance of event's happening says nothing about the actual happening of that event. A chance of a particle being at a certain location

says nothing about the actual position of the particle.

- Location of a particle must be certain for the particle itself even though it is unknown to us. We don't know where a particle is does not mean the particle is everywhere. A particle is where it is whether we know where it is not. A particle is where it is whether we measure it is not. Just because I don't know where you are at this moment does not mean you are everywhere.
- Wave function contains zero-crossings. A function with zero-crossings cannot be turned into a probability distribution of a state of a particle by squaring and normalizing. Probability distribution of the state of a particle cannot contain zeros. If a particle is trapped between zeros, a particle has no way to come out of it making probability distribution meaningless.
- We cannot assume a particle has the ability to disappear from one place and reappear at another place when a particle has to cross a zero crossing in a probability distribution. A particle has to cross all the in between positions when the particle has to move from one location to another.
- An electron in an Atom cannot disappear from one orbit and appear in another orbit without crossing all the in between orbits.
- Probability distribution says nothing about the present or the future. It is only about the past.
- Probability is a human decision-making tool. Not nature's decision-making tool. Nature has the blueprint. Nature does not need probability.

E. Heisenberg Uncertainty Principle

Lemma: Hypothetical Uncertainty Principle [7,13]

If the Momentum \mathbf{p} and the Position \mathbf{r} of a particle at any time instant is falsely assumed to be a Fourier Transform pair, then,

$$\Delta p \Delta r \ge 2\hbar \tag{3.5.1}$$

where Δp is the bandwidth or the precision of Momentum p, and Δr is the bandwidth or the precision of the position r.

Proof is straightforward. Under the false assumption that a particle behaves as a wave, for a particle of momentum \mathbf{p} and position \mathbf{r} , the wave function at any time t is given by,

 $\psi(\mathbf{r},\mathbf{p})=A \exp[(j/2\hbar)\mathbf{p}\cdot\mathbf{r}]$ (3.5.2) Here, $\psi(\mathbf{r},\mathbf{p})$ is a Fourier function of variables $(1/2\hbar)\mathbf{p}$ and \mathbf{r} . If we extend the (time, frequency) domain fact that a function cannot be both time limited and frequency limited into the (position, momentum) pair under the false assumption that the position and momentum can be a Fourier Transform pair, we have,

(1/2ħ)∆p∆r ≥ 1	(3.5.3)
∆p∆r ≥ 2ħ	(3.5.4)

We know that if we have a time domain signal, both time and frequency cannot be band limited. This is so since frequency and time are mutually independent; for a given frequency, time can take any value, and for a given time, frequency can take any value. Similarly, if we have position domain momentum signal, then, the position and the momentum cannot be both band limited. In other words, both precision of position and the precision of momentum cannot be achieved at the same time if and only if the assumption that the position and momentum pair of a particle is a Fourier Transform pair does hold true.

The problem is that the position and momentum cannot be a Fourier Transform pair. Entities that involve the mass of an object cannot be a Fourier Transform pair. For a given position, momentum cannot take any value and for a given momentum, position cannot take any value. The position and momentum of a particle are unique at any time, and must be unique.

A mass cannot be in multiple positions simultaneously. If the position is fixed, a particle cannot have momentum. If time is fixed, position cannot change and momentum has no existence. There is no momentum without change of the position and the passing of time. There is no change of position without passing of time.

Lemma:

The position and momentum cannot change without the passing of time and hence the (position, momentum) function and the (time, frequency) function are non-separable.

Lemma:

For a given position, a particle cannot have multiple momentums simultaneously. For a given momentum, a particle cannot have multiple positions simultaneously. The position and momentum of a particle of mass must be unique. The momentum determines the change of position and there is no change of position without momentum. The position and momentum are mutually dependent. The position and momentum of a particle of mass cannot be a Fourier Transform pair. Heisenberg's Uncertainty Principle is fundamentally false.

F. The Reality:

The momentum of a particle is given by $\mathbf{p}=m\partial \mathbf{r}/\partial t$. There is no momentum if $\partial r=0$. There is no momentum without displacement. The acceleration $a = \partial r^2 / \partial t^2$. There is no acceleration without displacement. An object sitting on a gravitational object has no acceleration since $\partial r=0$. Gravity and acceleration are not equivalent. Einstein's equivalence principle is false. A falling apple has acceleration, a=F/m, where F is the gravitational force and m is the mass. An apple on a tree has no acceleration, $\partial r=0$, a=0, a≠F/m,

Space is not warpable. Even if the space is assumed to be warpable, the mass of an object cannot warp space since it is the volume that occupies the space, not the mass. Einstein's General Relativity is meaningless. Mass cannot warp space. The measurement of the momentum at any position \mathbf{r} requires a change of the position since there is no

momentum without the change of position. Momentum is dependent on the change of the position. The position and momentum are not mutually independent entities. Mutually dependent pair cannot be a Fourier Transform pair.

If you want to consider the reality or real physics, then, the position and the momentum pair of a particle are unique. No object can be in different places at the same time except in voodoo-physics. The position and momentum pair cannot be a Fourier Transform pair [7,13]. Further, the precision of momentum is directly proportional to the precision of position since the momentum is a derived quantity from the rate of change of the position irrespective of the size of the particle, $\mathbf{p}=m\partial \mathbf{r}/\partial t$, where m is the mass of the particle. As a result, there is no uncertainty of position and the momentum of a particle. Position and momentum are not independent variables.

Lemma:

The position and momentum of an electrically neutral particle is unaffected by light, unaffected by observation.

A particle has a unique position irrespective of observers. Momentum has no existence without change in position and the passing of time. If the momentum is fixed, the position must be on a linear path or on a circular path, not a wave. If the position is fixed, there is no momentum. Position and momentum of a particle are mutually dependent. Position and momentum of a particle cannot change without change of time. Wave function $\psi(\mathbf{r},\mathbf{p})=\text{Aexp}[(j/2\hbar)\mathbf{p}\cdot\mathbf{r}]$, which is also equal to $\psi(\mathbf{r},\mathbf{p})=\text{Aexp}[(j/2\hbar)(m\partial r/\partial t)\cdot\mathbf{r}]$ is not time independent since p has no existence without the change of time and \mathbf{r} cannot change without change of time.

A particle with constant momentum cannot behave as a wave. If the position operator of a particle is the position itself as it is assumed in Quantum Mechanics, the particle cannot behave as a wave. In fact, at any given time, $\psi(\mathbf{r},\mathbf{p})$ is a constant since neither **r** nor **p** can change without change of time.

The position and momentum of a particle can be obtained simultaneously. All it takes is just a single radar pulse in determining the position and the momentum of a particle simultaneously; they do not have to be measured separately. There is nothing preventing obtaining position and momentum of a particle separately. A pulse of radar has no effect on an electrically neutral object. A pulse of radar does not alter the position and momentum of an electrically neutral object.

A pulse of radar only affects charged particles. In the case of charge particles, when a radar pulse is fired at a charge particle, a part of the radar pulse is reflected while the other part of the pulse oscillates the charge particle. However, the reflected pulse only contains the actual position and momentum of the charge particle. The fraction of the radar pulse that contributed to the oscillation of the charge particle is not reflected. Irrespective of whether a particle is electrically charged or neutral, both the position and momentum of a particle can be obtained simultaneously using a pulse of radar. Time delay of the radar pulse provides the position information and the frequency shift provides the momentum information.

In Quantum Mechanics, since the Position Operator is incorrectly assumed to be position itself, the eigenspace of the Position Operator is not unique. The eigenspace of the Momentum Operator is also an eigenspace of the Position Operator. The Position and Momentum Operators have a shared eigenspace. As a result, in Quantum Mechanics, the position and momentum are simultaneously measurable; this is in direct contradiction to Heisenberg's uncertainty. If the Position Operator is the position itself, position and momentum cannot be assumed to behave as a wave, which remains as a contradiction in Quantum Mechanics. The precision of momentum is directly related to the precision of position since the momentum is directly related to the change of position, $\mathbf{p}=m\partial \mathbf{r}/\partial t$.

Reality Theorem:

In the case of a particle, Momentum has no existence without change of position, and no change of position without change of time. Position of a particle cannot remain fixed in the presence of momentum. If the momentum is fixed, the position is either on a linear path or on a circular path, not a wave. Position, momentum, and time are mutually dependent, $\mathbf{p}=m\partial \mathbf{r}/\partial t$. Position and momentum cannot be a Fourier Transform pair; simply impossible. You cannot assume the impossible.

Lemma:

Assumptions must be real. For momentum $p=m\partial r/\partial t$ of a particle of mass m and wavenumber $k=2\pi/\lambda$ of a plane wave, p and k are not equivalent, $p\neq\hbar k$; they do not have the same characteristics. Properties of a mass m are not the same as the properties of a massless wave.

In the case of electromagnetic waves, the wave number k can have multiple values at any given time independent of time. However, the momentum of a particle cannot change without the passing of time and cannot have multiple values at any given time independent of time. Although the momentum can be constant, the momentum cannot remain constant or change without the change of time. This is where the representation of the behavior of a particle as a wave fails, $p\neq\hbar k$.

Just because we do not know the momentum of a particle at any given time, we may assume the momentum of the particle to be at any value if we want. However, that does not mean the particle itself is at all the momentums at any given time. A particle at any given time has a unique momentum as far as the particle itself is concerned. Similarly, since we do not know the position of a particle, we may assume that a particle can be at any position at any given time. However, that does not mean a particle is at all the positions at any given time. The position and the momentum of a particle at any given time are unique. Our ignorance of the state of a particle does not make the state probabilistic.

Lemma:

Irrespective of whether a particle is electrically charged or neutral, both the position and momentum of a particle can be obtained simultaneously using a pulse of radar. Time delay of the radar pulse provides the position information and the frequency shift provides the momentum information.

G. Defendant Cannot be Both Innocent and Guilty:

Consider a defendant on trial. Defendant is either innocent or guilty; though unknown to us, that is the reality. Since we do not know what exactly it is, we assume that the defendant is innocent until proven guilty. So, we remain unbiased to the position of the defendant, we do not take sides. We consider in our mind, only in our mind, the defendant to be both innocent and guilty until we make observations to support one or the other. Our assumption has no effect on the reality of the defendant. That does not mean the defendant is both innocent and guilty for the same event. Our assumption does not change the physical reality of the defendant. Whether we are aware or not, dependent is either innocent or guilty. not both for any given event. Our assumption does not alter the state, change reality. The reality is that the defendant him/herself knows with certainty that he/she is guilty or not. The reality of an event does not require our knowledge of the event for it to exist with certainty. Our ignorance about reality does not change reality.

As far as natural reality is concerned, the state of the defendant is certain; there is no probability here. Defendant knows with certainty that he/she is innocent or not; our verdict does not alter the reality. Probability only appears in human decision making far removed from reality.

No wave in nature can represent a probability distribution. Probability distribution is purely a human concoction from the past for the past. Reality has no association with probability. Our uncertainty about an event does not make the event itself uncertain. The position and momentum of an electron in an Atom cannot be uncertain since uncertainty breeds radiation. Probability only comes into play relative to a human observer. There is no probability without the people who are aware of what probability is. There is no probability in the absence of a human observer who has studied probability. Nature does not do probability. Nature does not gamble; nature does not have to because nature has the blueprint.

The position and momentum of a particle is not random. If the position of a particle is random, the momentum Operator is not defined in Quantum Mechanics. On the other hand, there is no Quantum Mechanics if the position and momentum of a particle is not random. Quantum Mechanics is a self-contradiction.

H. Particle is Either Here or There, Not at Both

It does not matter what the size of the particle is, there cannot be a Momentum without change of the Position. There cannot be a change of position without the passing of time. There cannot be momentum without the passing of time. There cannot be momentum if the position is fixed. The position of a particle must change with momentum irrespective of the size of the particle whether you like it or not; you have no control over it. If the momentum is fixed, then, the particle takes either a linear or circular path, not a wave. If the momentum is fixed, no particle can behave as a wavefunction. On the other hand, for the position and the momentum to be a Fourier Transform pair, we must have:

- 1. For a fixed position, a particle should be able to have infinite momentums at the same time, which is not possible for a particle.
- 2. For a fixed momentum, a particle must be able to have infinite positions at the same time, which is also impossible for a particle.

As a result, the position and momentum pair cannot be a Fourier Transform pair [7,13]. Without the position and momentum pair of a particle being a Fourier Transform pair, there would not be an Uncertainty Principle. As a result, the Uncertainty Principle does not hold true. Irrespective of size, the state of a particle cannot be uncertain.

You can only talk about an Uncertainty Principle hypothetically in voodoo-physics that is outside the bounds of physical reality. Anything and everything is allowed in voodoo-physics since it is a human Crafted Prophecy (hCRAP), which has nothing to do with physical reality, just like a religion. Losing your Quantum Mechanics religion is the only way to comprehend reality. Losing my religion... is the only way forward.

Lemma:

A particle cannot have momentum if the position is fixed. Particle takes either a linear or a circular path If the momentum is fixed. Position and the momentum of a particle are mutually dependent, and hence they cannot be a Fourier Transform Pair. The Heisenberg Uncertainty Principle is false; it cannot hold.

Lemma:

The precision of momentum is directly proportional to the precision of the position since the momentum per unit mass is the rate of change of position, $p/m=\partial r/\partial t$.

Proof is straightforward since the Momentum of a particle is a derived quantity from the rate of change of the position of a particle.

Misinterpretation of the Double-Slit experiment and Stern-Gerlach experiment brought probability into Quantum Mechanics. As we are going to show, there is no probability involved in the outcome of the

Stern-Gerlach and Double-Slit experiments. The result of the Stern-Gerlach Experiment is deterministic; there is no uncertainty in it. The result of the Double-Slit experiment is deterministic; no particle crosses the Double-Slit barrier [2,13].

Heisenberg's derivation of Quantum Mechanics relies on the matrices of infinite dimensions. The claim that the matrices of infinite dimensions can be in Quantum Mechanics is incorrect and invalid. Matrices of neither finite nor infinite dimensions can be in Quantum Mechanics.

Matrices of infinite dimensions do not have eigenvalue representation and hence cannot represent Operators of Observables. Matrices of infinite dimensions cannot be square matrices and hence cannot be Hermitian. The matrices that are not Hermitian cannot be in Quantum Mechanics. The matrices of finite dimension have multiple eigenvalues and hence cannot be used for a unique representation of the Observables. The matrices that are of finite dimension cannot be in Quantum Mechanics since they cannot satisfy the non-commutative relationship that is fundamental to Quantum Mechanics. In fact, irrespective of whether matrices are finite or infinite, Matrices cannot be the Operators of Observables in Quantum Mechanics. Matrix Operators have no place in Quantum Mechanics.

Lemma:

The momentum is a derived quantity from the change of position, and hence the precision of the momentum is as good as the precision of the position is. Precision of the momentum is directly related to the precision of the position measurement. Heisenberg's Uncertainty Principle is a direct contradiction to the definition of momentum.

Lemma:

There is no probability in the absence of a human observer. Nature does not do probability. Nature does not have to do probability since it has the knowledge of the underlying physics.

Lemma:

Matrices cannot be in Quantum Mechanics irrespective of whether they are finite or infinite. Matrix operators do not satisfy the non-commutative relationship between Position and Momentum of Operators that is fundamental for Quantum Mechanics. Operators with multiple eigenvalues cannot represent the state of a particle since the state of a particle must be unique. A mathematical model must be unique. The model of the position and momentum of a particle in Quantum Mechanics is not unique.

/. Angular Momentum Operator:

Angular momentum operator \mathcal{L} is given by,	
∠=r×P	(3.9.1)
Substituting for r and P , we get,	
ℒ=r×(2ηħ/j)∂/∂r	(3.9.2)
£=(2ηħ/j) r × ∇	(3.9.3)

where, $\eta = 1/2$ for de Broglie waves with energy of a particle given by e=pc, η =1 for particle waves with energy of a particle given by $e=p^2/2m$.

r= (x,y,z)	(3.9.4)
$\nabla = (\partial \partial x, \partial \partial y, \partial \partial z)$	(3.9.5)
$\mathcal{L}=(\mathcal{L}_{x},\mathcal{L}_{y},\mathcal{L}_{z})$	(3.9.6)
Now, we have,	
$\mathcal{L}_{x} = (2\eta \hbar/j)(y \partial/\partial z - z \partial/\partial y)$	(3.9.7)
$\mathcal{L}_{y} = (2\eta \hbar/j)(z\partial/\partial x - x\partial/\partial z)$	(3.9.8)
$\mathcal{L}_{z} = (2\eta \hbar/j)(x\partial/\partial y - y\partial/\partial x)$	(3.9.9)
We also have [1],	
$[\mathcal{L}_x, \mathcal{L}_v] = (2\eta\hbar)\mathcal{L}_z$	(3.9.10)
$[\mathcal{L}_{v},\mathcal{L}_{z}]=(2\eta\hbar)\mathcal{L}_{x}$	(3.9.11)
$[\mathcal{L}_z, \mathcal{L}_x] = (2\eta\hbar)\mathcal{L}_v$	(3.9.12)
where the commutations	

ommutations,

 $[\mathcal{L}_{x},\mathcal{L}_{y}]=[\mathcal{L}_{x}\mathcal{L}_{y}-\mathcal{L}_{y}\mathcal{L}_{x}],$ $[\mathcal{L}_{y},\mathcal{L}_{z}]=[\mathcal{L}_{y}\mathcal{L}_{z}-\mathcal{L}_{z}\mathcal{L}_{y}],$

 $[\mathcal{L}_{z},\mathcal{L}_{x}]=[\mathcal{L}_{z}\mathcal{L}_{x}-\mathcal{L}_{x}\mathcal{L}_{z}].$

The \mathcal{L} =**r**×**p** can represent the Angular Momentum of an orbit. Quantum Mechanics replaces the momentum by a Momentum Operator under the assumption that the position and momentum of the particle behave as a wave. Contrary to the assumption of a wave behavior, the Position Operator of a particle is kept as the position itself. When the position and momentum of a particle are assumed to behave as a wave, the Position Operator cannot be the position itself; this is the mockery of Quantum Mechanics.

Although *L*=**r**×**p** represents angular momentum of an orbit, if the momentum **p** is replaced by a Momentum Operator P obtained under the assumption that the position and momentum of a particle behave as a wave, the Angular Momentum Operator \mathcal{L} can no longer represent an orbit. The oscillation of a particle in its orbit is not a wave. The oscillation of a particle in its orbit cannot be represented by the Momentum Operator derived under the assumption that a particle behaves as a plane wave equation that propagates. If the position and momentum of a particle is probabilistic, the Momentum Operator is not defined. The assumption that the position and momentum of a particle is probabilistic and the definition of the Momentum operator as the derivative with respect to position are contradictory.

J. Square Angular Momentum Operator:

Square angular momentum operator \mathcal{L}^2 is given by, $\mathcal{L}^2 = \mathcal{L}_x^2 + \mathcal{L}_y^2 + \mathcal{L}_z^2$ (3.10.1)Note that in \mathcal{L}_x , \mathcal{L}_y , and \mathcal{L}_z , \hbar has been replaced $2\hbar$ when the fitting wavelength that the energy of a particle of mass m and momentum p can support is used. That is the only difference. All the operators except the time evolution operator for the fitting wavelength $\lambda = 2h/p$ can be obtained simply by replacing h in the operators under de Broglie wavelength by 2h.

Momentum Operator **P** for the direction **r** is given by,

$$\mathbf{P} = (2\eta \hbar/j)\partial/\partial r \tag{3.10.2}$$

where η =1/2 for de Broglie wavelength for a particle with energy e=pc, and η =1 for a particle with energy e=p²/2m.

The Angular Momentum Operator ${\cal L}$ in the direction ${\bm r}$ is given by,

 $\mathcal{L}=(2\eta\hbar/j)r\partial/\partial r$ (3.10.3) The Square Angular Momentum \mathcal{L}^2 is given by,

uare Angular Momentum \mathcal{L}^2 is give	en by,
ℒ ² =(2ηħ/j)r∂[(2ħ/j)r∂/∂r]/∂r	(3.10.4)
ℒ²=(2ηħ/j)²r∂[r∂/∂r]/∂r	(3.10.5)
$\mathcal{L}^{2} = (2\eta \hbar/j)^{2} \partial [r^{2} \partial^{2}/\partial r^{2} + r \partial/\partial r]$	(3.10.6)
$\mathcal{L}^{2}\varphi = (2\eta\hbar/j)^{2}\partial[r^{2}\partial^{2}/\partial r^{2} + r\partial/\partial r]\varphi$	(3.10.7)

If the eigenvalues of the Angular Momentum Operator $ir\partial/\partial r$ is ℓ , we have,

$\mathcal{L}^2 \varphi = - \mathcal{I}(\ell + 1)(2\eta\hbar)^2 \varphi$	(3.10.8)
jr∂φ/∂r= <i>l</i> φ	(3.10.9)
$\mathcal{L}\varphi = -(2\eta\hbar) \ell \varphi$	(3.10.10)
£ _x φ=-(2ηħ) / _x φ	(3.10.11)
$\mathcal{L}_{v}\varphi = -(2\eta\hbar)\ell_{v}\varphi$	(3.10.12)
$\mathcal{L}_{z}\varphi = -(2\eta\hbar)\ell_{z}\varphi$	(3.10.13)

where, $\eta = 1/2$ for de Broglie waves with energy of a particle given by e=pc, and η =1 for particle waves with energy of a particle given by $e=p^2/2m$. $(2\eta\hbar)\ell_x$, $(2\eta\hbar)\ell_y$, and $(2\eta\hbar)\ell_z$ are the eigenvalues of Operators \mathcal{L}_x , \mathcal{L}_y , and \mathcal{L}_z . The eigenvalues ℓ_x , ℓ_y , and ℓ_z do not come in quanta. Eigenvalue relationships in equations (3.10.8) ... (3.10.13) do not indicate an Angular Momentum guantization. Angular Momentum cannot come in quanta. The quantization has been forced upon the Spin as a result of the misinterpretation of the Stern-Gerlach Experiment. Bipolar Spins cannot come in guanta. If the eigenvalues of the Angular Momentum Operator $jr\partial/\partial r$ is ℓ , and $\mathcal{L}=(2\eta\hbar/j)r\partial/\partial r$, then, the eigenvalues of the Square Angular Momentum Operator \mathcal{L}^2 is given by $-\mathcal{L}(\mathcal{L}+1)(2\eta\hbar)^2$, where $\mathcal{L}^2 = (2\eta \hbar/j) r \partial [(2\hbar/j) r \partial/\partial r] / \partial r$.

For de Broglie wavelength, η =1/2. A particle of momentum p does not have energy e=pc that is required for the de Broglie wavelength and hence de Broglie wavelength is hypothetical and meaningless. Whether η =1/2 or η =1, it does not matter, the position and momentum cannot behave as waves. The position and momentum of a charged particle behave as a wave in the presence of electromagnetic waves or light and this wave behavior has nothing to do with the momentum of the particle. There are no particle waves. A particle cannot be assumed to behave as a wave. Particles move. Waves propagate. Motion is not propagation. Particles are not waves. Waves are not particles.

K. Angular Momentum:

Angular momentum is a vector. The direction of the angular momentum is observer dependent. Observer dependent entities do not come in quanta. Angular momentum cannot be quantized. Angular Momentum is Bi-Polar, and hence cannot be Quantized. There are no Angular Momentum Monopoles. There are no Spin Monopoles. There are no Magnetic Monopoles. Spin cannot be Quantized without Spin Monopoles and Magnetic Moment Monopoles. Spin Magnetic Moment has no favored direction. We can choose the coordinate system so that the direction of Spin relative to us is in the direction of x-axis, y-axis, or z-axis; the choice is up to us. Although the z-direction has been chosen in Physics as the direction of the Spin Magnetic Moment, there is no reason for it. Spin Magnetic Moment does not have to be in z-direction; it is not a state of a particle. The observer dependent Up or Down of the direction of a Spin is not a parameter of the state of a particle.

Angular momentum belongs to an orbiting object. Angular momentum cannot exist without ownership. If angular momentum is quantized, angular momentum quanta have no way of identifying which orbiting object it belongs to. Angular momentum quanta do not have means to carry belonging information unlike a data packet on the Internet. In a jumble of Angular momentum soup, no angular momentum quantum has any idea where it is or which object it belongs to. In other words, angular momentum quantum has no way of finding out its parents, the orbiting object and the orbiting system.

No quantity that has a belonging can come in quanta without the means to carry the belonging information. A quantity that belongs to a specific entity cannot be quantized. As soon as a quantity is quantized, its belonging or owner information is lost. Angular momentum and Spin have no existence without ownership. If angular momentum and Spin are quantized, orbiting systems cannot exist. Angular momentum and Spin cannot come in guanta. The eigenvalues of the Angular Momentum Operator do not indicate a quantization. Quantization of Spin was a result of the misinterpretation of the Stern-Gerlach device. The misinterpretation of the Stern-Gerlach Device has been forced into the Spin Magnetic Moment Operator to claim that the Angular Momentum is quantized. The eigenvalues of the Angular Momentum Operators or Spin Operators are not quantized. Spin cannot be quantized. Vectors cannot come in guanta.

If the position and momentum of a particle is assumed to be a wave, it is not just the Momentum Operator that is given by $\mathbf{P}=(2\eta\hbar/j)\partial/\partial x$, the Position Operator is also given by $\mathbf{X}=(2\eta\hbar/j)\partial/\partial p$. You cannot just replace the momentum alone by the Momentum Operator $\mathbf{P}=(2\eta\hbar/j)\partial/\partial x$, you must also replace the position by the Position Operator $\mathbf{X}=(2\eta\hbar/j)\partial/\partial p$. If the position and momentum of a particle is assumed to be a wave, there is a mutual symmetry between the Position Operator and the Momentum Operator. If the position and momentum of a particle are assumed to behave as a wave, the Position Operator cannot be assumed to be the position itself.

If the momentum of an orbiting object of mass is replaced by the Momentum Operator $\mathbf{P}=(2\eta\hbar/j)\partial/\partial x$ that is derived under the assumption that the position and momentum behave as a wave, the angular momentum is not unique and it can no longer represent the angular momentum of the orbiting object of mass. The angular momentum of an orbiting object must be unique.

Lemma:

Spin is bipolar. Bipolar spin cannot have unipolar Spin-Up and Spin-Down states.

Lemma:

Spin is not a fundamental state of a particle. Spin is an acquired state of a particle. Spin is a property of an orbiting system. If a particle has a spin, it must be a particle that has been ejected from an orbiting system. A particle that had never been in an orbiting system has no Spin.

Lemma:

Angular Momentum is Bi-Polar. Spin is Bi-Polar. Magnetic Moment is Bi-Polar. Bi-Polar quantities cannot be Quantized without Monopoles. There are no Angular Momentum Monopoles. There are no Spin Monopoles. There are no Magnetic monopoles.

Lemma:

Angular Momentum and Spin belong to a specific orbiting object. If they are quantized, the ownership information will be lost. Angular Momentum cannot be quantized or cannot come in quanta.

Lemma:

Under the assumption that the position and momentum of a particle behave as a wave, ff the momentum of a particle is described by the Momentum Operator $\mathbf{P}=(2\eta\hbar/j)\partial/\partial x$, then, the position of the particle is predefined by the Position Operator $\mathbf{X}=(2\eta\hbar/j)\partial/\partial p$. Position Operator $\mathbf{X}=(2\eta\hbar/j)\partial/\partial p$ and Momentum Operator $\mathbf{P}=(2\eta\hbar/j)\partial/\partial x$ commute.

Lemma:

If the position and momentum of a particle is assumed to behave as a wave, the position Operator **X** cannot be defined as the position itself, $X \neq xI$.

IV. THERE IS NO QUANTUM SPIN 1/2

Definition: Orientation of a Particle

The Orientation of a Particle is defined as the direction of the Spin Magnetic Moment (SMM). Spin of a particle is the direction of its Spin Magnetic Field.

Spin is a property of an orbiting system. Spin is not a property of a particle. Spin Magnetic Moment is limited to charge particles in an Atom or ejected from an Atom. Spin Magnetic Moment (SMM) is static. Magnetic field of a propagating electromagnetic wave is not a Spin. Magnetic field of hypothetical photons or light quanta is not a Spin. Light has no Spin. Photons have no Spin. Electrically neutral particles do not have Spin Magnetic Moment. Photons have no Spin Magnetic Moment. A particle that has never been in an orbiting system does not have a Spin. Spin is a property of particles in an orbiting system.

Property of the Orientation of Spin:

The direction of SMM or the orientation of an Atom, which is orthogonal to the plane of Spin, can either be positive or negative relative to an observer. Orientation of the Spin is observer dependent. The

orientation of the spin magnetic field is not a state of the particle.

Lemma:

All the Spins do not have Spin Magnetic Fields. All the Magnetic Fields are not Spins. Spinning Neutral Particles have no Spin Magnetic Moment (SMM). Spinning charge particles have Spin Magnetic Moment and it is static. A Neutral Atom has a Spin Magnetic Moment since it is an orbiting system of charge particles.

Lemma:

Spin is 3D. There are no 2D Spins. A 3D Spin cannot be represented by 2D Operators or vectors. Spin-1/2 is Meaningless.

Lemma:

The orientation of the Spin of a Particle is determined by the population the Particle is a part of, as well as, any magnetic field of the environment the particle is in. Orientation of a particle is observer dependent. Nature cannot quantize observer dependent entities.

Lemma:

Spin is Bipolar. Bipolar Spin has no unipolar Up and Down states. There is no Up without Down. There is no Down without Up. Up and Down of a Spin is not orthogonal cand cannot be represented by orthogonal basis vectors. Up and Down that has no existence without an observer cannot come in Up and Down Quanta.

The self-cross-product of the Angular Momentum Operator under the fitting wavelength λ =2h/p is given by,

$\mathcal{L}{ imes}\mathcal{L}{=}j(2\eta\hbar)\mathcal{L}$	(4.1)
where, $\mathcal{L}=(\mathcal{L}_x,\mathcal{L}_y,\mathcal{L}_z)$, $\eta=1/2$ for de Broglie Wave	elength
with e=pc, and η =1 for the same particle wave	elength
with e=p ² /2m. For the de Broglie wavelength	ιλ=h/p
that is obtained under the false assumption the	hat the
energy of a particle is given by e=pc, η=1/	2. The
energy e=pc only applies for light under	er the
assumption that light is quantized and cons	sists of
photons of momentum p traveling at speed c, ir	ו which
case e=pc.	

For a particle of mass m of momentum p, the actual energy of the particle is given by $e=p^2/2m$. When the actual energy of a particle is used, the wavelength is $\lambda=2h/p$. For the fitting wavelength that is obtained for the actual energy of a particle of mass m, $e=p^2/2m$, $\eta=1$. Note the factor 2 in equation (4.1) is there when the actual fitting wavelength of a particle is used. There is no factor 2 when the de Broglie wavelength is used [1].

Any orbiting mass at position \mathbf{r} with momentum \mathbf{p} in 3D space generate an angular momentum described by the angular momentum operator \mathcal{L} ,

 $\mathcal{L}=\mathbf{r}\times\mathbf{P}$ (4.2) The angular momentum operator \mathcal{L} also satisfies the self-cross-product relationship,

	$\mathcal{L} \times \mathcal{L} = j(2\eta\hbar)\mathcal{L}$		

(4.3)

However, the reverse is not necessarily true. Any operator that satisfies the self-cross-product relationship does not represent an angular momentum operator.

Forward Angular Momentum Lemma:

Any angular momentum operator \mathcal{L} satisfies the self-cross-product relationship, $\mathcal{L} \times \mathcal{L}=j(2\eta\hbar)\mathcal{L}$.

Reverse Contradictory Angular Momentum Lemma:

Any Operator \mathcal{L} that satisfies the self-cross-product relationship, $\mathcal{L} \times \mathcal{L}=j(2\eta\hbar)\mathcal{L}$, does not represent Angular Momentum Operator.

Lemma:

Matrix operators that satisfy the self-cross-product relationship, $\mathcal{L} \times \mathcal{L}=j(2\eta\hbar)\mathcal{L}$, do not represent Spin Operators. Matrix Operators cannot be in Quantum Mechanics.

When the self-cross-product relationship in Eqn. (4.3) is satisfied, we have,

$j(2\eta\hbar)\mathcal{L}_x = \mathcal{L}_y\mathcal{L}_z - \mathcal{L}_z\mathcal{L}_y = [\mathcal{L}_y,\mathcal{L}_z]$	(4.4)
$j(2\eta\hbar)\mathcal{L}_{y}=\mathcal{L}_{z}\mathcal{L}_{x}-\mathcal{L}_{x}\mathcal{L}_{z}=[\mathcal{L}_{z},\mathcal{L}_{x}]$	(4.5)
$j(2\eta\hbar)\mathcal{L}_{z} = \mathcal{L}_{x}\mathcal{L}_{y} - \mathcal{L}_{y}\mathcal{L}_{x} = [\mathcal{L}_{x},\mathcal{L}_{y}]$	(4.6)
$\mathcal{L} = [\mathcal{L}_{x}, \mathcal{L}_{y}, \mathcal{L}_{z}]^{T}$	(4.7)
$\mathcal{L}\varphi = -(2\eta\hbar)\ell\varphi$	(4.8)

where ℓ is the eigenvalue and φ is the eigenfunction of the Angular Momentum Operator $jr\partial/\partial r$, and $(2\eta\hbar)\ell$ is the eigenvalue of the Angular Momentum Operator \mathcal{L} .

An angular momentum \mathcal{L} has components on the x, y, and z axes, $\mathcal{L}=[\mathcal{L}_x,\mathcal{L}_y,\mathcal{L}_z]^T$. However, the Angular Momentum Operator $\ensuremath{\mathcal{L}}$ is not a superposition of mutually independent components of Angular Momentum Operator on x, y, z axes since the components have no independent existence simultaneously. Any Angular Momentum Operator L with the components $\mathcal{L}_x,\ \mathcal{L}_y,\ \mathcal{L}_z$ that satisfy the commutation relationships in equations (4.4), (4.5), and (4.6) are not guaranteed to be an Operator of an Observable. An angular momentum \mathcal{L} with components Square Matrices \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z that satisfy the commutation relationships in equations (4.4), (4.5), and (4.6) do not represent an Operator of an Observable. The Matrix $\mathcal{L}=[\mathcal{L}_x,\mathcal{L}_y,\mathcal{L}_z]^T$ that contains square matrices \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z as its x, y, and z components has no eigenvalue representation.

Lemma:

Angular Momentum Operator \mathcal{L} is not a superposition of mutually independent components of Angular Momentum Operator on x, y, z axes since the components have no independent existence simultaneously.

If we falsely assume we can represent the Angular Momentum \mathcal{L} by a matrix operator **L**, we have,

$$\begin{array}{c} \mathbf{L} = [\mathbf{L}_{x}, \mathbf{L}_{y}, \mathbf{L}_{z}]^{\mathsf{T}} \\ \text{where, } \mathbf{L}_{x}, \mathbf{L}_{y}, \mathbf{L}_{z} \in \mathbb{C}^{M \times M}, \mathbf{L} \in \mathbb{C}^{3M \times M}. \\ \mathbf{L} \times \mathbf{L} = j(2\eta \hbar) \mathbf{L} \\ [\mathbf{L}_{y}, \mathbf{L}_{z}] = j(2\eta \hbar) \mathbf{L}_{x} \end{array}$$

$$\begin{array}{c} (4.9) \\ (4.10) \\ (4.11) \end{array}$$

$[L_z, L_x] = j(2\eta\hbar)L_y$	(4.12)
$[\mathbf{L}_x, \mathbf{L}_y] = \mathbf{j}(2\eta\hbar)\mathbf{L}_z$	(4.13)

$$\mathbf{L}^2 = \mathbf{L} \cdot \mathbf{L}$$
 (4.14)

$$L^{2}=L_{x}^{2}+L_{y}^{2}+L_{z}^{2}$$
(4.15)

We certainly can find Matrices L_x , L_y , $L_z \in \mathbb{C}^{M \times M}$ that satisfy the commutation relationships (4.11), (4.12) and (4.13). However, the matrix operator L, where $L=[L_x,L_y,L_z]^T$, is no longer a square matrix operator, no longer symmetric, no longer Hermitian, and has no eigenvalue representation. An Operator that has no eigenvalue representation cannot be an Operator of an Observable. The relationships,

 $\mathcal{L}\varphi = -2\eta \hbar \ell \varphi$ and $\mathcal{L}^2 \varphi = -\ell (\ell + 1)(2\eta \hbar)^2 \varphi$

We also have,

that holds for an Angular Momentum Operator \mathcal{L} do not hold for Angular Momentum Matrix Operators L. Although we have,

$$\mathbf{L}_{\mathbf{x}}\varphi = -(2\eta\hbar)\ell_{\mathbf{x}}\varphi \tag{4.16}$$

$$L_{\varphi} = -(2\eta \hbar) \dot{\chi} \varphi$$
 (4.17)

$$\mathbf{L}_{z}\varphi = -(2\eta\hbar)\ell_{z}\varphi \tag{4.18}$$

 $L=[L_x,L_y,L_z]^T$ is no longer an Operator of an Observable,

$$\mathbf{L}^{2}\varphi\neq -\ell(\ell+1)(2\eta\hbar)^{2}\varphi \tag{4.19}$$

 $L\varphi \neq -(2\eta\hbar)/\varphi$ (4.20) The matrix operator L cannot be an angular momentum operator unless L is Hermitian symmetric and has eigenvalue representation. Even when the Operators L_x, L_y, L_z are Hermitian symmetric matrices, the matrix operator L is not a Hermitian symmetric, not invertible, and has no eigenvalue representation. And hence, L cannot be an Angular Momentum Operator. The Matrix L has no eigenvalue representation. Eigenvalues of L² cannot be given by $-(/+1)(2\eta\hbar)^2$ for L $\in \mathbb{C}^{3M \times M}$ since Matrix L $\in \mathbb{C}^{3M \times M}$ has no eigenvalue ($2\eta\hbar$)/representation.

Although $\mathbf{L} \in \mathbb{G}^{3M \times M}$ does not have an eigenvalue representation, it has singular value representation $\mathsf{L}\in\mathbb{C}^{3\mathsf{M}\times\mathsf{M}},\quad\mathsf{V}\in\mathbb{C}^{3\mathsf{M}\times\mathsf{M}},\quad\mathsf{Z}\in\mathbb{C}^{\mathsf{M}\times\mathsf{M}}.$ L=VAZ, where $\boldsymbol{\Lambda} = diag[\lambda_1, \lambda_2, \dots \lambda_M], \ \boldsymbol{\Lambda} \in \mathbb{C}^{M \times M}, \ \boldsymbol{V}^H \boldsymbol{V} = \boldsymbol{I}_V, \ \boldsymbol{I}_V = diag[1, 1, \dots, 1],$ $\mathbf{I}_V \in \mathbb{G}^{3M \times 3M}, \quad \mathbf{Z}^H \mathbf{Z} = \mathbf{I}_Z, \quad \mathbf{I}_Z = diag[1,1, \dots, 1], \quad \mathbf{I}_Z \in \mathbb{G}^{M \times M}. \quad \text{The}$ diagonal of the matrix Λ represents the singular values. Singular Value representation is not unique. The representation of an observable must be unique. There are multiple Singular Values for L∈C^{3M×M} and hence the observable cannot be represented by the singular values of the Matrix $L \in \mathbb{G}^{3M \times M}$. Even if the Angular Momentum Matrix Operator L is a square, Hermitian, invertible non-singular Matrix Operator, $L \in \mathbb{C}^{n \times n}$, it still cannot represent the Operator of an Observable since there are multiple eigenvalues and hence the representation is not unique. The representation of an Observable must be unique and hence the Angular Momentum Operator cannot be a Matrix.

Lemma:

If $\mathbf{L}=[\mathbf{L}_x,\mathbf{L}_y,\mathbf{L}_z]^T$, where, where, \mathbf{L}_x , \mathbf{L}_y , $\mathbf{L}_z\in\mathbb{C}^{M\times M}$, then, $\mathbf{L}\in\mathbb{C}^{3M\times M}$ does not have eigenvalue representation and hence cannot be an Operator of an Observable, $\mathbf{L}\varphi\neq-(2\eta\hbar)\ell\varphi$.

Lemma:

Matrix Operators cannot represent Observables in Quantum Mechanics.

If we assume that there is a Spin matrix **S** satisfies angular momentum operator relationships, we have,

where, $S \in \mathbb{C}^{3M \times M}$, S_x , S_y , $S_z \in \mathbb{C}^{M \times M}$, $L \in \mathbb{C}^{3M \times M}$, Matrix $S \in \mathbb{C}^{3M \times M}$ has no eigenvalue representation,

 $\mathbf{S} \varphi \neq -(2\eta \hbar) \mathbf{S} \varphi$ (4.23) For the matrix operator **S** to represent the Spin as the eigenvalues of **S**, the matrix **S** must be a square matrix, Hermitian, and must have eigenvalue representation. Although the x, y, and z components \mathbf{S}_x , \mathbf{S}_y , and \mathbf{S}_z are Hermitian and have eigenvalue representation, the Spin Operator $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ is no longer a square matrix, no longer a Hermitian matrix, has no eigenvalue representation, and **S** is no longer an Operator of an Observable; Matrix **S** is no longer a Spin Operator.

Lemma:

Matrix $S \in \mathbb{G}^{3M \times M}$ has no eigenvalue representation and cannot represents an Operator of an Observable.

Lemma:

If the Spin Operator **S** is a Matrix consisting of Matrix Operators S_x , S_y , $S_z \in \mathbb{C}^{M \times M}$ so that,

 $S = [S_x, S_y, S_z]^T, S \in \mathbb{C}^{3M \times M},$

then, the Matrix **S** has no eigenvalue representation and hence **S** is no longer a Spin Operator.

We also have,

S ² =S•S	(4.24)
$S^{2}=S_{x}^{2}+S_{y}^{2}+S_{z}^{2}$	(4.25)

We can find matrix $\hat{\mathbf{S}}$ that satisfy the cross-product relationship,

$$\begin{split} \textbf{S} \times \textbf{S} = j(2\eta \hbar) \textbf{S} \qquad (4.26) \\ \text{where, } \textbf{S}^{\mathsf{T}} = [\textbf{S}_x, \textbf{S}_y, \textbf{S}_z], \ \textbf{S} \in \mathbb{C}^{3M \times M}, \ [.]^{\mathsf{T}} \text{ denotes transpose,} \\ \textbf{S}_x, \ \textbf{S}_y, \ \textbf{S}_z \in \mathbb{C}^{M \times M}, \ M \text{ is an integer and } M \ge 2. \end{split}$$

Using the non-commutation relationships, we have,

j(2ηħ) S _x =[S _y , S _z]	(4.27)
j(2ηħ) S _v =[S _z ['] , S _x]	(4.28)
$j(2\eta\hbar)\mathbf{S}_{z} = [\mathbf{S}_{x}, \mathbf{S}_{y}]$	(4.29)

For the non-commutative relationships to hold, the matrices must satisfy the following condition:

) The frace of each matrix must be zero,

$$Trace (\mathbf{S}) = 0$$
 inv. y. z

Trace $(S_i)=0$, i=x, y, z (4.30) 2) The matrices must be Hermitian or conjugate symmetric,

$$S_i = S_i^{H}$$
, i=x, y, z (4.31)

There are infinitely many matrices that can satisfy the self-cross-product relationship,

 $\mathbf{S} \times \mathbf{S} = \mathbf{j}(2\eta \hbar) \mathbf{S} \tag{4.32}$

where,

 η =1/2 for de Broglie wavelength.

 η =1 for the fitting wavelength.

The smallest order 2×2 matrices that satisfy the auto cross-product are given by.

$$S_x = \eta \hbar |0 1| S_y = \eta \hbar |0 -j| S_z = \eta \hbar |1 0| |1 0| |j 0| |0 -1|$$

 η =1/2 for de Broglie wavelength.

When η =1/2, \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z are the Poli's Spin matrices. The eigenvalues of \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z for η =1/2 are s=±1/2. Spins ±1/2 are for de Broglie waves for a particle with energy e=pc. A particle with mass m does not have energy e=pc and hence Spins ±1/2 have no existence.

 η =1 for the fitting wavelength.

The eigenvalues of S_x , S_y , S_z for $\eta=1$ are ± 1 .

Spins ± 1 is for particle waves for a particle with energy $e=p^2/2m$.

Trace [**S**_i]=0, i=x, y, z.

Although S_x , S_y , S_z can exist theoretically (not practically) as spin matrices, $S = [S_x, S_y, S_z]^T$ cannot exist as a Spin Operator or as an Angular Momentum Operator even theoretically since it is not Hermitian symmetric and has no eigenvalue representation.

Matrices S_x , S_y , S_z are the so-called Spin Matrices, and they satisfy the self-cross-product relationship $S \times S = j(2\eta\hbar)S$. The eigenvalues of the Spin Matrices S_x , S_y , S_z are $s = \pm 1$ for the fitting wavelength, $\eta = 1$. When the fitting wavelength that the energy of a particle can support is used, the factor 1/2 in Quantum Mechanics disappears. The eigenvalues of Spin Matrices S_x , S_y , S_z are $s = \pm 1$, and hence there is NO Spin-1/2 for a particle with energy $e = p^2/2m$ that a particle can support.

Now, the question is, "Do these so-called Spin Matrices S_x , S_y , S_z represent the angular momentum of any kind, Orbital Angular Momentum or Spin Magnetic Moment?" If these Spin Matrices represent Angular Momentum, since L=S, L must also satisfy,

 $L^2 \varphi = \mathcal{A}(\mathcal{A} + 1)(2\eta \hbar)^2 \varphi$ (4.33) where, φ is an eigenvector of order 2, and ℓ has to be an eigenvalue of L, where L=S, but the matrix operator L has no eigenvalue representation since it is not a square matrix and no eigenvalue representation.

Here, even though $(2\eta\hbar)/must$ be the eigenvalue of the angular momentum operator L=S, the matrix operator S is not square, not Hermitian. The Matrix S does not have eigenvalue representation. The matrix operator S with the spin matrices S_x , S_y , S_z as its x, y, and z components is not a Spin Operator or an Angular Momentum Operator. You cannot choose arbitrary matrices S_x , S_y , S_z that satisfy the commutation relationships (4.27), (4,28), and (4.29) call them Spin Matrices since $S=[S_x, S_y, S_z]^T \in \mathbb{C}^{3M \times M}$ is no longer a Spin Operator.

Lemma:

Although \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z of an Angular Momentum Operator \mathcal{L} satisfy the commutation relationships, any arbitrary Operators \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z that satisfy the commutation relationships do not represent an Angular Momentum Operator \mathcal{L} .

If $L=S\in\mathbb{C}^{3M\times M}$, $S=[S_x,S_y,S_z]^{T}\in\mathbb{C}^{3M\times M}$, $S_x,S_y,S_z\in\mathbb{C}^{M\times M}$ are all matrix operators, and $\mathcal{L}=R\times P$, then, there must

also be a Matrix Position Operators R=[Rx	$[\mathbf{R}_{Y}, \mathbf{R}_{Z}]$ and
a Matrix Momentum Operator $\mathbf{P} = [\mathbf{P}_{x}, \mathbf{P}_{y}, \mathbf{P}_{z}]^{T}$	such that,
L=R×P	(4.34)

where, $\mathcal{L} \in \mathbb{G}^{3M \times M}$, $\mathbf{R} \in \mathbb{G}^{3M \times M}$, $\mathbf{P} \in \mathbb{G}^{3M \times M}$.	, , , , , , , , , , , , , , , , , , ,
$\mathcal{L}_{x} = \mathbf{R}_{y}\mathbf{P}_{z} - \mathbf{P}_{y}\mathbf{R}_{z}$	(4.35)
$\mathcal{L}_{y} = \mathbf{R}_{z} \mathbf{P}_{x} - \mathbf{P}_{z} \mathbf{R}_{x}$	(4.36)
$\mathcal{L}_z = \mathbf{R}_x \mathbf{P}_y - \mathbf{P}_x \mathbf{R}_y$	(4.37)

Here is the problem. For the matrices \mathbf{S}_{x} , \mathbf{S}_{v} , \mathbf{S}_{z} to be Spin Angular Momentum Operators and for them to exist, the Position and Momentum Operators must be Matrix Operators, $\mathbf{R}=[\mathbf{R}_x,\mathbf{R}_y,\mathbf{R}_z]$, $\mathbf{P}=[\mathbf{P}_x,\mathbf{P}_y,\mathbf{P}_z]$. The Position and Momentum Operators must be finite dimensional Matrix Operators for the Spin Matrices S_x, \mathbf{S}_{v} , \mathbf{S}_{z} to exist. As it is well known [1], the Position and Momentum Operators cannot be finite dimensional Matrix Operators in Quantum Mechanics and hence the Spin matrices $\boldsymbol{S}_{x},~\boldsymbol{S}_{y},~\boldsymbol{S}_{z}$ cannot exist. Finite dimensional Position and Momentum Matrix Operators cannot satisfy the non-commutative relationship in Quantum Mechanics [1]. Infinite dimensional matrices have no eigenvalue representation and hence cannot represent the Operators of Observables. Infinite dimensional matrix Operators also cannot be in Quantum Mechanics. Irrespective of the dimension, Matrix Operators cannot be in Quantum Mechanics.

Lemma:

Spin matrices \mathbf{S}_{x} , \mathbf{S}_{y} , \mathbf{S}_{z} cannot exist in Quantum Mechanics. Pauli's Spin matrices have no existence.

Lemma:

Since the Matrix Operator $\mathbf{S}=[\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ does not represent a Spin Operator, \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z do not represent Spin magnetic moment. Matrices \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z are not Spin operators. Eigenvalues of \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z do not represent Spins. A Bipolar Spin cannot have Unipolar Up and Down Spins. A Bipolar Spin cannot be represented as Unipolar quantized entities.

It is important to note that the Angular Momentum is Bipolar and cannot be quantized. Spin is Bi-Polar and cannot be quantized. Bipolar Spin does not have unipolar Spin-Up and Spin-Down. Angular momentum Quantization that is done in Quantum Mechanics is hypothetical and it cannot be done. Angular momentum quantization is not allowed and prohibited by its very nature. Spin Quantization that is done in Quantum Mechanics is short sighted and it is not allowed and prohibited in nature. Vectors cannot come in quanta.

The matrix operator L=S, where the Matrix $S=[S_x, S_y, S_z]^T$, cannot represent an Angular Momentum Operator. Matrix operators S_x , S_y , S_z cannot represent Spins. L=S cannot represent an Angular Momentum Operator. The matrix L=S is not an Angular Momentum Operator. The matrix S is not an Operator of Spin Magnetic Moment. Substituting $L_x=S_x$, $L_y=S_y$, $L_z=S_z$ in L makes the Operator L meaningless; it prevents L from being an Angular Momentum Operator.

Lemma:

The Matrix Operator $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ with Matrices $\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z \in \mathbb{C}^{M \times M}$ as its x, y, z components has no physical meaning. Pauli's 2D Spin Matrix Operators \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z cannot exist since there are no Magnetic Monopoles or Spin Monopoles and Matrix $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ has no eigenvalue representation.

For (2×2) Spin Matrices S_x , S_y , S_z , we have,	
$S^2 φ = 3 η^2 \hbar^2 φ$	(4.38)
$\mathbf{S}_{z}\varphi = \eta \mathbf{S}_{z}\hbar \varphi$	(4.39)

where, $S^{2} \in \mathbb{C}^{2 \times 2}$, φ is a 2-dimensional eigenvector, $\eta = 1$ for fitting wavelength, $s=\pm 1$, $S^{2}=S \cdot S$ given by, $S^{2}=[S_{*}^{2}+S_{*}^{2}+S_{*}^{2}]$ (4.40)

$$\mathbf{S}_{x}^{2}+\mathbf{S}_{y}^{2}+\mathbf{S}_{z}^{2}$$
] (4.40)
hat the Spin Matrix Operator **S** is not

The problem is that the Spin Matrix Operator **S** is not a square matrix. Matrix Operator **S** is not Hermitian symmetric. The operator **S** does not have eigenvalue representation, $\mathbf{S}\varphi \neq \eta s\hbar \varphi$. Matrix Operator **S** is not an Operator of an Observable. For the eigenvalue of a Matrix Operator to represent the Angular Momentum or Spin, it must have an eigenvalue representation and for that the Matrix must be Hermitian symmetric and hence the matrix must be a square matrix. In the Spin Operator $\mathbf{S}=[\mathbf{S}_x,\mathbf{S}_y,\mathbf{S}_z]$, the operators \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z cannot be Matrix Operators. In the Angular Momentum Operator $\mathcal{L}=[\mathcal{L}_x,\mathcal{L}_y,\mathcal{L}_z]$, the operators \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z cannot be Matrix Operators.

Lemma:

Matrices that satisfy the self-cross-product relationship $S \times S = j(2\eta \hbar)S$ do not represent Angular Momentum or Spin Operators.

Lemma:

Matrix operators cannot be in Quantum Mechanics.

Lemma:

Although the Position and Momentum Operators in Quantum Mechanics generate an Angular Momentum Operator that satisfies the self-cross-product $\mathcal{L} \times \mathcal{L} = j(2\eta \hbar)\mathcal{L}$, the reverse is not necessarily true. Not all the Operators that satisfy self-cross-product relationships $\mathcal{L} \times \mathcal{L} = j(2\eta \hbar)\mathcal{L}$ represent the Angular Momentum Operators or Spin.

A. Spin Matrices Cannot be Operators of Observables

Any Operator Matrix that is Hermitian does not represent an Operator of an Observable. Although it is necessary for an Operator of an Observable to be Hermitian, it is not sufficient. For an Operator to be the Operator of an Observable, the Operator must also be Invertible. Matrix Operator **S** is not invertible, where $S \in \mathbb{C}^{3M \times M}$, $S = [S_x, S_y, S_z]^T \in \mathbb{C}^{3M \times M}$, $S_x, S_y, S_z \in \mathbb{C}^{M \times M}$. Matrix Operator **S** is not Hermitian. Since **S** is not a square matrix, eigenvalues do not exist. The Matrix **S** does not have an eigenvalue representation to be an Operator of an Observable.

When an Operator is non-invertible, there is no one-to-one relationship between the input and output of a system. There is no way to know the input for a given output. Multiple inputs can result in the same output. The input-output relationship is not unique. As a result, for an Operator to be Operator of an Observable, it is necessary that the Operator must be Invertible. If a Matrix Operator is not invertible, it has no eigenvalue representation and hence cannot be the Operator of an Observable. Matrices of infinite dimension are not invertible and cannot be Operators of Observables. The representation of an observable must be unique. A Matrix Operator has multiple eigenvalues and hence the representation of an Observable by a Matrix Operator is not unique. Matrix Operators cannot represent Operators of Observables.

The Spin Matrix Operators have the following properties:

- $\mathbf{S}_{x}, \mathbf{S}_{v}, \mathbf{S}_{z}$ are Hermitian.
- Matrix S=[S_x,S_y,S_z]^T with S_x,S_y,S_z∈^{CM×M} as its x, y, and z components is not a square matrix and has no eigenvalues and does not represent an Operator of an Observable. Matrices S_x, S_y, S_z cannot represent anything meaningful when S is not an Operator of an Observable.
- Trace (**S**_i)=0, i=x, y, z.
- $|\mathbf{S}_i|\neq 0$, i=x, y, z, where, |.| denotes the determinant and $\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z \in \mathbb{C}^{2\times 2}$. They are invertible. 2D Pauli Matrices are invertible. The Spin Matrix $\mathbf{S}=[\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ that resulted from the Pauli Matrices $\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z \in \mathbb{C}^{2\times 2}$ is not invertible and has no eigenvalue representation; **S** is not the Operator of an Observable. When S is not an Operator of an Observable, 2D Pauli Matrices do not represent anything meaningful.
- |S_i|=0, i=x, y, z, where, S_x,S_y,S_z ∈ C^{M×M}, ∀M, M>2, M is an integer. They are not invertible.

The condition Trace $(\mathbf{S}_i)=0$, i=x, y, z is required for the satisfaction of non-commutative relationships in Quantum Mechanics. Any matrix operator that does not satisfy the non-commutative relationship has no place in Quantum Mechanics.

The spin matrices $S_x, S_v, S_z \in \mathbb{C}^{2 \times 2}$ satisfy the conditions required to be spin operators. However, for the existence of x, y, and z Component Spin Matrices $\mathbf{S}_{x_1}\mathbf{S}_{y_2}\mathbf{S}_{z_1} \in \mathbb{C}^{2\times 2}$, there must be finite dimensional Position and Momentum Matrix Operators. Finite dimensional Position and Momentum Matrix Operators cannot exist since finite Matrix Operators do not satisfy the non-commutative relationship. Matrix Operators Infinite can satisfv the non-commutative relationship but infinite Position and Momentum Operators are not invertible, not guaranteed to be Hermitian, and do not have eigenvalue representation. Irrespective of the dimension, Matrix Operators cannot be the Operators of Observables.

Lemma:

Finite dimensional Position and Momentum Matrix Operators cannot be in Quantum Mechanics. Infinite dimensional Position and Momentum Matrix Operators have no eigenvalue representation and hence cannot be the Operators of Observables. Matrix Operators do not satisfy the non-commutative relationship, which is the foundation of Quantum Mechanics.

Lemma:

Angular Momentum and Spin Matrix Operators cannot exist without the inherent Position and Momentum Matrix Operators of finite dimension. Position and Momentum Matrix Operators of finite dimension cannot exist in Quantum Mechanics. Matrices of infinite dimensions have no eigenvalue representation and hence cannot be Operators of Observables. Matrices of any dimension cannot be the Angular Momentum Operators and Spin Matrix Operators in Quantum Mechanics.

B. Spin Matrices are Spin-Monopoles

For light quanta with e=pc, or for the de Broglie wavelength, η =1/2 and the eigenvalues of S_x , S_y , S_z are s=±1/2. For the wavelength of a particle with energy e=p²/2m, η =1 and the eigenvalues of S_x , S_y , S_z are s=±1. Since de Broglie's wavelength derivation does not apply for a particle of mass with energy e=p²/2m, there is no Spin 1/2. There are No Spin 1/2 Matrix Operators. Spin 1/2 is simply a manifestation of an incorrect de Broglie wavelength λ =h/p. A particle of momentum p and mass m does not have the energy e=pc required for the de Broglie wavelength. The energy e=p²/2m that a particle of momentum p and mass m has cannot support de Broglie wavelength.

De Broglie wavelength is incorrect since no particle has the energy required to be at de Broglie wavelength. When the fitting wavelength, λ =2h/p or λ =2(de Broglie wavelength) that the energy of any particle of momentum p and mass m can support is used, Spin 1/2 and Spin 1/2 Matrix Operators disappear from Quantum Mechanics. Reality is not spooky. Spin ±1/2 is meaningless both conceptually and mathematically. There is no spooky Spin ±1/2. There are no quantized Spins. Spin Matrices cannot exist if $S \in \mathbb{C}^{3M \times M}$, $S = [S_x, S_y, S_z]^T \in \mathbb{C}^{3M \times M}$, $S_x, S_y, S_z \in \mathbb{C}^{M \times M}$ since S no longer represent an Operator of an Observable. It is we, humans, who have injected spookiness into microscopic particles by misinterpretation experiments, of not nature. Physicists misinterpreted the Double-Slit Experiment, Stern-Gerlach Experiment, and many other experiments [13,9]. Modern Physics is a result of theoretical oversight experimental and misinterpretations [13, 15, 16, 4].

It is the misinterpretation of Anderson's cloud chamber experiment that gave anti-particles. If the two spiral paths represent an electron and a positron, they must be a conjugate spiral pair that spiral down at equal rate. Two spiral paths that spiral down at vastly different rates cannot be the paths of an electron and positron or particles of equal mass. The two spirals in Anderson's cloud chamber are not the same. They cannot be the paths of particles of equal mass. They are most likely the paths of electron and proton pairs. Special Relativity is both mathematically and conceptually false and hence Dirac equations based on Special Relativity are not real. Mathematica symmetry does not have to have physical symmetry. There are no anti-particles. Anti-particles are a result of misinterpretation of Anderson's cloud chamber spirals. It is the experimental misinterpretations in physics that turned physics into voodoo physics.

It is the misinterpretation of the redshift of a star in a galaxy that made the universe expand. Space cannot expand. Universe cannot expand. Hubble's ubiquitous relationship v=Hd that is used to claim that the universe is expanding is an experimental blunder, where v is the hypothetical radial speed of a galaxy, d is the distance to the galaxy, and H is the Hubble's constant. The placing of galaxies on the surface of an expanding balloon and the use of the raisins in a bread dough to explain the motion of galaxies with the expansion of the universe is simply ridiculous [12].

It is we who created the bizarre quantization of Spins, not nature. It is we who created dubious Quantum Mechanics, not nature. It is we who misinterpreted observations to claim that reality is strange, not nature. It is we who created a false universe expansion, not nature. It is we who created a creator, not nature. Time is not relative. Mass is not relative. The path of light is unaltered relative to observers. The path of a moving entity is unaltered relative to observers. Particles are not waves. Waves are not particles. There is no wave-particle duality. Mass and energy are not equivalent. There is no massless energy and hence a mass cannot be converted to energy. Mass is conserved [14]. Light has no energy unless the electromagnetic potential energy of light is converted to the kinetic energy of charge particles. The reality is observer independent. Propagation of light is not relative. Observers cannot bend light. Maxwell equations for propagation of light cannot be transformed onto inertial frames [15,16,4].

Lemma:

Spin is Bipolar. A Bipolar Spin cannot have unipolar Up and Down. Up and Down of a Spin is observer impressions. There is no Up without Down. There is no Down without Up. Spin cannot come in Up and Down Quanta.

Lemma:

Spins $\pm 1/2$ have no existence. There are no fractional Spins. There are no integer Spins. Spin does not come in Quanta. Spin cannot be quantized. A Spin is in 3D. A Bipolar 3D Spin cannot be represented by unipolar 2D orthogonal vectors. Pauli's 2D Spin matrices cannot exist mathematically, conceptually, or physically.

Lemma:

If the x, y, and z axes components of a 3D Spin **S** are represented by 2D Pauli's Spin Matrices $\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z \in \mathbb{C}^{2\times 2}$, then, $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T \in \mathbb{C}^{(3\times 2)\times 2}$ have no eigenvalue representation and hence will no longer be an Operator of an Observable. The x, y, and z axes components of a 3D Spin **S** cannot be represented by

Spin Matrices of any order $S \neq [S_x, S_y, S_z]^T \in \mathbb{C}^{3M \times M}$, where $S_x, S_y, S_z \in \mathbb{C}^{M \times M}$, $\forall M, M \ge 2$, M is an integer.

C. No Exclusion Principle is Required

When two spinning Atoms or charge particles are nearby, their direction of spin magnetic field is against each other. The direction of spin magnetic field of two neighboring electrons naturally against each other due to magnetic coupling. Spin of an electron does not have Up or Down states. Up or Down are unipolar. Bipolar spin cannot have unipolar states. Spin is not a fundamental property of a particle. Spin is an acquired property of a particle from being in an orbiting system. A particle that had never been in an orbiting system does not have a spin. No Pauli's spin matrices are required. Pauli's spin matrices as components of an Angular Momentum Operator prevents it from being an Operator.

Lemma:

3D Spin cannot have 2D states.

Instead of de Broglie wavelength λ =h/p, when the fitting wavelength λ =2h/p that the energy of a particle of momentum p can support is used, (2×2) matrix operators \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z are the same as Pauli Matrix Operators except no multiplication factor 1/2. We have seen that the eigenvalues of \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z are s=±1. It is not Spin-1/2, s≠±1/2 Spin.

When the \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z in the Angular Momentum Operator \mathcal{L} is replaced by Matrices \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z , the resulting matrix operator $\mathbf{S}=[\mathbf{S}_x,\mathbf{S}_y,\mathbf{S}_z]^T$ is no longer an Operator of an Observable and as a result, Pauli Matrices do not represent Spin Operators. The \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z in the Spin Operator \mathbf{S} cannot be replaced by Pauli's 2D Spin Matrix Operators or any other Matrix Operators without losing the identity of \mathbf{S} as an Spin Operator. The \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z in the Angular Momentum Operator \mathcal{L} cannot be replaced by Matrix Operators without losing the identity of \mathcal{L} as an Angular Momentum Operator.

Further, Spin cannot take place in 2-Dimensional space. There are no 2-Dimensional Spins. No particle can even exist in 2-Dimensional space. Particles can exist, Spin, and Orbit only in 3-Dimensional space. If it exists, Spin Matrices must be 3-Dimensional, but Spin Matrices of any order cannot exist. Spin is not a state of a particle. A Bipolar Spin does not have unipolar spin states. A Spin does not have Up or Down states. Up and Down are observer perceptions, not properties of a Spin itself. One observer's Up Spin can be another observer's Down Spin. As we are going to see later, even 3-Dimension Spin Matrices cannot exist. Matrices cannot be Operators of Observables in Quantum Mechanics. There are no Spin Matrices.

Even if there are Spin Matrices, Spin Matrices can only represent Spin Monopoles, not Spin Bi-Poles. Spin Monopoles cannot exist. Spin Matrices cannot exist without Spin Monopoles. As a result, Spin Matrices cannot exist in Quantum Mechanics. Pauli's 2D Spin Matrices have no existence. Orthogonal vectors cannot represent Up-Spin and Down-Spin

since Up cannot exist without Down.

Neighboring electrons cannot have the orientation of their Spin Magnetic Moments (SMM) facing Up-Up (\nearrow) or Down-Down (\checkmark) since the similar polarities repel and the opposite polarities attract. Up does not necessarily mean vertically up \uparrow . When two electrons of same SMM polarities come to be neighbors, they instantly re-orient themselves so that they face opposite polarities UP-Down (\nearrow) or Down-Up (\checkmark) .

The orientation of spins of two electrons can be in any direction as long as the directions are opposite to each other. No Exclusion Principle is required. It is simply the natural attraction and repulsion behavior of magnetic polarities that defines the orientation of neighboring spinning particles. Spin of a charged particle makes the particle a magnetic dipole, which is free to reorient itself depending on the polarities of neighboring particles as well as any other external magnetic fields the particle is in. The direction of Spin is not a particle's state. Bell's theorem is false and meaningless. Spin magnetic field of a charge particle does not have an inherent unique direction of Spin.

Lemma:

The direction of Spin that has no existence without an observer is not a property of a particle. The direction of Spin Magnetic Moment is not a state of a particle. A particle does not have the direction of Spin Magnetic Moment as the particle's state, as its identity. A particle cannot have a memory of its Spin Magnetic Moment since Spin Magnetic Moment has no existence without observers. Bell's Theorem is false, meaningless.

Stern-Gerlach devices neither can set the spin of a particle nor are able to measure the spin of a particle. The setting of the spin of a particle by the Stern-Gerlach device is volatile. As long as a charge particle is in the Stern-Gerlach device, the spin of the particle remains in the set direction, and when the particle is out of the Stern-Gerlach device, it reorients with the whatever the environmental magnetic field it is in without any memory of the direction of the spin it had when it was in the Stern-Gerlach device. Spin-Up and Spin-Down are a result of the misinterpretation of the Stern-Gerlach blunder.

There are no magnetic monopoles, and hence particles cannot have Spin-Up state or Spin-Down state. Spin-Up and Spin-Down are not orthogonal and cannot be represented by orthogonal basis vectors. Spin-Up and Spin-Down are non-separable from a Spin since they only exist in a Bipolar Spin relative to observers. Spin-Up and Spin-Down are not in a superposition since one cannot exist without the other. Up or Down state in a Bipolar Spin is meaningless.

Spin-Up and Spin-Down are perfectly correlated negatively and as a result, if the Spin-Up is represented by a vector $+\phi$, then, the Spin-Down vector is predetermined to be $-\phi$. Vector ϕ cannot be 2-Dimensional since Spin cannot take place in 2-Dimensional Space. Observable Spins are 3-Dimensional. 2-Dimensional spins have no

existence.

There are no Spin Matrix Operators. Whether a particle is Spin-Up or Spin-Down is determined by an Observer. Spin-Up or Spin-Down are not properties of a Spin; they are not the states of a particle itself. Spin is Bipolar and it is an acquired property of a particle. A particle that had never been in an orbiting system has no Spin. An electrically neutral particle has no Spin Magnetic Moment. State of a particle is observer independent. The direction of a Spin is observer dependent. Spin-Up for one observer can be Spin-Down for another observer. An inherent property of a particle cannot be observer dependent. The direction of Spin cannot be an inherent property of a particle.

Property:

Operators of Observables must be Hermitian, Invertible. Operators of Observables must have an eigenvalue representation. A Spin Operator S with Pauli's Matrices $S_x, S_y, S_z \in \mathbb{C}^{2 \times 2}$ as x, y, z axes components $S=[S_x, S_y, S_z]^{T} \in \mathbb{C}^{(3 \times 2) \times 2}$ is not Hermitian, not invertible, and has no eigenvalue representation, and hence Pauli Matrices cannot be Operators of Observables. If Pauli's Spin matrices are Operators of Observables, the Spin Operator S shouldn't have lost its identity as an Operator when the x, y, z components of the Spin S are replaced by Pauli's Spin Matrices. Pauli's Spin Matrices are meaningless nonsense. Pauli's Spin Matrices are not required for no two neighboring particles to have the same Spins. No two neighboring electrons can have the same Spin due to the magnetic coupling of Spin Magnetic Moment, which is natural.

Lemma:

Up and Down cannot be in a superposition since Spin-Up and Spin-Down are non-separable. Up and Down have no existence in the absence of an observer and hence they are not properties of a particle. For Spin-Up and Spin-Down to be in superposition, there must be Up and Down Unipoles, or Spin Unipoles. There are no Up and Down Unipoles. There are no Spin Unipoles. Spin is Bipolar. A Bipolar Spin cannot have Unipolar Up and Down.

Property:

Spin-Up and Spin-Down are not orthogonal. Up and Down are equal and opposite to each other, and exist in the same particle; they cannot be separated since there are no Up and Down monopoles. Spin-Up and Spin-Down are perfectly correlated negatively and hence cannot be represented by orthogonal vectors. Up and Down cannot be represented by 2D Orthogonal vectors since Up has no existence without Down and vice versa. To represent Up and Down by 2D orthogonal vectors, Up and Down must be mutually uncorrelated. Up and Down are mutually perfectly correlated negatively. Spin cannot have 2D orthogonal Up and Down without unipolar Up and Down. There are no Up and Down monopoles. A 3D Bipolar Spin cannot have unipolar 2D Up and Down.

D. Spin-Up and Spin-Down are Non-Separable; There are No Up and Down Orthogonal States

Positive-Spin (Spin-UP ↑) and the Negative-Spin (Spin-Down ↓) are not orthogonal. The Positive-Spin and the Negative-Spin are perfectly correlated negatively. The Positive-Spin and the Negative-Spin are the same except they are 180° degrees out of phase to each other; they can be at any orientation as long as they are opposite to each other. If one particle has its SMM at an angle $\boldsymbol{\theta}$ with respect to some reference direction (Spin-Up ↗), then, the other neighboring particle will rotate to orient its SMM at an angle θ +180° (Spin-Down \checkmark) with respect to the same reference direction. Atoms of the same kind (the same atomic number) have the same magnitude of SMM. The direction of the SMM or the orientation of a particle is determined by the neighboring particles as well as any other external magnetic field present. Spin-Up or Spin-Down is not a property of a particle.

Lemma:

Up and Down are for the Observers eyes only. Up and Down do not exist physically.

E. Spin-Up and Spin-Down are not orthogonal:

For Spin-Up and Spin-Down to be orthogonal, they must be Magnetic Monopoles or Spin Monopoles. Since there are no Magnetic Monopoles or Spin Monopoles, no particle can be solely Spin-Up or Spin-Down. Spin-Up Spin-Down or has no independent existence. It is not possible to represent Spin-Up as a state given by φ_{up} =(1, 0) and Spin-Down as a state given by φ_{down} =(0, 1) since Spin-Up and Spin-Down are not mutually independent, not orthogonal. Spin-Up or Spin-Down cannot stand alone and there are no two independent Spin-Up and Spin-Down states in a single particle; Spin-Up and Spin-Down in a particle are non-separable. They only have relative existence, no absolute existence. Since Spin-Up and Spin-Down are perfectly correlated negatively, if Spin-Up is represented by vector φ_{up} =(1, 0), Spin-Down must be φ_{down} = -(1, 0) or φ_{down} = - φ_{up} .

Orientations of Neighbors are Against Each Other:

Particles in a beam of Atoms or in a beam of electrons (charge particles) ejected from Atoms

F. When the First Atom in a Beam of Atoms Enters an External Magnetic Field:

If the first particle of a beam of particles enters an external magnetic field, the particle immediately aligns with the external magnetic field. It doesn't matter what the direction of Spin of the particle is, if the orientation of a particle is not against the external magnetic field, it will immediately align with the external magnetic field. If the orientation of a particle is against the external magnetic field, it remains in that orientation in the external magnetic field.

When the first particle aligns with the external magnetic field, the rest of the particles follow the suite by orienting towards or against the orientation of the first particle, which is the same as the direction of the external magnetic field, even though all the particles, except the first particle, are outside the external magnetic field. We consider a more general case where the orientation of the electrons in a beam are at an angle to the external magnetic field when the beam is outside the external magnetic field. Both Spin-Up and Spin-Down Electrons are at an angle to the external magnetic field. If the external magnetic field is in the vertical direction \uparrow , and the orientation of the particles in the beam are at an angle \nearrow (Spin-Up) or \checkmark (Spin-Down), then, when the first electron enters the external magnetic field, the orientations of electrons or the directions of the SMM are as follow:

1) Direction of External Magnetic Field is vertical, 1.

2) When all the electrons are outside the field, they are magnetically coupled with an unknown orientation so that any two neighboring electrons have their orientation one against the other:



3) The first electron entering the external magnetic field can be Spin-Up or Spin-Down. In the example we are considering, the first electron is Spin-Down but the orientation is not vertical and it doesn't have to be vertical.

When the first Spin-Down electron with an orientation that is at an angle to the vertical $\hat{}$ external magnetic field enters the external field and orient itself toward the external magnetic field that is vertical $\hat{}$, the rest of the Atoms also reorient themselves as a result of the attraction of opposite polarities and the repulsion of the alike polarities. Even though all the electrons except the first electron are outside the External Magnetic Field, all the atoms are aligned with or against the field due to the magnetic coupling of the electrons irrespective of where they are.

All electrons are Outside the External Magnetic Field:↗∠↗∠↗∠ (all outside) [Magnetic Field **B** ↑] First electron Enters the External Field, the Rest of the electrons are Outside the External Magnetic Field and Atoms Reorient themselves:

The neighboring particles will always be in opposite polarities either towards the external field (θ =0) or against the external field (θ =180°). This is the same scenario you will see if you line up compasses, no difference.

If a particle enters an external magnetic field **B**, and the angle between the Spin Magnetic Moment (SMM) μ and the External Field **B** is θ , then,

1) if $\theta=0$ or $\theta=\pm180^{\circ}$, then, the torque $\tau=0$, no alignment take place,

2) If $\theta \neq 0$, $\theta \neq \pm 180^{\circ}$, then, the torque $\tau \neq 0$, and hence the torque will always align the SMM of the electron or the Atom with the external magnetic field instantly since the External Magnetic Field **B** is strong. The original orientation information of the electron is completely lost. A particle does not have a Memory of Prior Spin Orientation.

Lemma:

When the electron Spin Magnetic Moment (SMM) aligns with an external Magnetic field, the orientation information of the electron is completely lost unless the orientation of the electron is against the External Magnetic Field. The new imposed orientation of the electron by an External Magnetic Field has nothing to do with and says nothing about the original orientation of the electron, charge particle, or an Atom.

Lemma:

The imposed orientation of an electron by an External Magnetic Field is volatile. Spin-Up and Spin-Down in an External Magnetic Field are volatile. When a particle is out of an external magnetic field, the particle has no memory of the orientation it had when it was in the magnetic field.

G. Stern-Gerlach Device is Not a Spin Measuring or Spin Setting Device:

You cannot use an external magnetic field to obtain the components of a Spin along x, y, and z axes. If the Spin Magnetic Moment (SMM) of a charged particle is μ , where, $\mu = (\mu_x, \mu_y, \mu_z)$, you cannot obtain the x-axis component μ_x by sending the charge particle through a Stern-Gerlach Magnetic Field oriented along the x-axis. Similarly, the y-axis component μ_y cannot be obtained by sending the charge particle through a Stern-Gerlach Magnetic Field oriented along the y-axis, and the z-axis component μ_z cannot be obtained by sending the charged particle through a Stern-Gerlach Magnetic Field oriented along the z-axis.

Stern-Gerlach Magnetic (SGMF) field simply changes the orientation of the charged particle as a whole to whatever the orientation of its own Magnetic Field, SGMF. SGMF is simply an enforcer. It does not care about the actual original orientation of a charged particle. When a charge particle is in the Stern-Gerlach Device, the orientation of the charge particle is either with or against the SGMF irrespective of the original orientation of the charge particle before it entered SGMF. The orientation of a charged particle is no longer toward or against the SGMF when the charge particle leaves the Stern-Gerlach Device.

Stern-Gerlach Device is not a Spin Measuring Instrument. It is the failure to realize this fact that led to the Quantum Weirdness. It is here that lies the genesis of Quantum Spin, Quantum Mechanics and Quantum Weirdness. Once this is clarified, with that the Quantum Spin and Quantum Mechanics itself ceases to exist.

If charge particles C and D are magnetically coupled, when charge particle D enters an external magnetic field and orient itself with the external magnetic field **B**, the charge particle C also orients to be against the new orientation of the charge particle D even though the charge particle C is outside the external magnetic field. This is the result of magnetic coupling. You can call it entanglement. The correlation of Spins between two neighboring atoms is always -1, one against the other or opposite to each other.

Lemma:

The orientation of a charge particle in a population of charge particles is determined by the population of the charge particles, and external magnetic fields.

Lemma:

The magnitude of the Spin of an Atom is proportional to the Atomic number.

Lemma:

Spin-Up has no existence until an Observer comes in to label it as Spin-Up; with that Spin-Down also comes into existence automatically. Spin-Up has no existence without Spin-Down and vice versa. Spin-Up and Spin-Down have no existence without an observer.

Property:

Spin-Up and Spin-Down co-exist in the same Atom. A Spin can only be Spin-Up or Spin-Down relative to an Observer. A particle does not have Spin-Up or Spin-Down state without an observer. Spin-Up and Spin-Down cannot be in a superposition since they are not uni-poles and they are not separable and have no independent existence.

Lemma:

The Spin Correlation between two magnetically coupled neighboring Atoms is always -1. This is not a result of a Quantization. This is rather a result of the magnetic coupling of neighbors, the attraction of the opposite magnetic polarities and the repulsion of the alike.

Atomic Neighbors Motto:

I am always against my neighbor and My neighbor

is always against me; the motto of the neighboring Atoms. This natural phenomenon is due to the Spin magnetic moment (SMM) of the Atoms or spinning charge particles, not a Spin Quantization. It is the same natural law that governs the orientation of two neighboring compasses.

H. Spin Matrices Cannot be 2-Dimensional

Spin of a particle cannot take place in 2-Dimensional space. Spin of a particle requires 3-Dimensional space for its existence. Spin angular momentum cannot be 2-Dimensional. Spin angular momentum is a 3-Dimensional vector. Spin angular momentum arises from a spinning of an object on its own axis through the center of gravity of the object. Spin magnetic field arises if the spinning particle has an electric charge. The direction of the spin magnetic field is in 3D. A 3D spin magnetic field cannot have 2D binary Up or Down.

Spin is bipolar. A bipolar spin cannot have unipolar Up and Down. Spin of an object takes place on a 2-Dimensional plane in a 3-Dimensional space, and the angular momentum, whether it is spin or orbital, is orthogonal to the orbiting or spinning plane. Although the spin and the orbiting take place in a 2-Dimensional plane, the spin or orbital angular momentum is a bipolar vector in 3-Dimensional Space. Up or Down of a Spin is 3D and cannot be represented by 2D vectors. There cannot be 1D or 2D without 3D. The existence of 3D does not require higher dimensions. If the universe had been in higher dimensions such as 4D, 5D, 10D, 11D or 12D, or whatever higher dimension, we wouldn't have been able to even stand up. A 3D Spin cannot be represented by 2D binary Up and Down basis vectors.

The Spin cannot be described by a 2-Dimensional vector. There are no 2-Dimensional spins. There are no 2D orbital angular momentum vectors. If exists, the Spin-Matrices must be (3×3) square matrices. Up and Down of a Spin are observer perceptions, not the states of a Spin. There is no way to stick Up and Down onto a Spin as the states of a Spin. Since any operator of an observable must be Hermitian. the Spin-Matrix must be Hermitian or conjugate symmetric. As a result, matrix operators must be square. If the components along the x, y, and z axes of a Spin Operator are square matrices, the Spin Operator is no longer a square matrix and hence has no eigenvalue representation and cannot represent a Spin Operator. The components along the x, y, and z axes of a Spin Operator cannot be matrices, cannot be square matrices. Pauli's Spin Matrices cannot exist.

Matrices of infinite order also cannot be symmetric, cannot be invertible, and cannot have eigenvalue representation. Matrix operators cannot be of infinite dimension. Heisenberg's derivations of Quantum Mechanics based on matrices of infinite dimension cannot hold, it fails theoretically.

We know that the Spin angular momentum matrix operator $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ satisfies, **S×S=**j(2ηħ)**S**

(4.8.1)

where Superscript ^T denotes the Transform. When $\eta=1/2$, we have it for the incorrect de Broglie wavelength for energy e=pc, which is the energy of a hypothetical photon. The energy e=pc cannot be the energy of a particle of momentum p and mass m and hence de Broglie wavelength cannot represent a particle of momentum p and mass m if a particle is assumed to behave as a wave hypothetically. When n=1, we have it for the fitting wavelength or the wavelength for a particle of mass that the energy $e=p^{2}/2m$ of the particle of momentum p and mass m can support. The $S \times S = j(2\eta \hbar)S$ indicates that $S \times S$ is orthogonal

to S. S×S cannot be on the same Space as S. For matrices \mathbf{S}_{x} , \mathbf{S}_{y} , \mathbf{S}_{z} to be Spin angular momentum operators, they must be in 3-dimensional matrices, $\mathbf{S}_{x}, \mathbf{S}_{v}, \mathbf{S}_{z} \in \mathbb{C}^{3 \times 3}$. It is only then, we can write

 $J^{2} = L^{2} + S^{2}$ (4.8.2) $\mathbf{J}, \mathcal{L}, \mathbf{S} \in \mathbb{C}^{3 \times 3}, \mathbf{J}$ is the total angular momentum matrix operator, \mathcal{L} is the orbital angular momentum matrix operator, and **S** is the Spin angular momentum matrix operator. If \mathcal{L}^2 is (3×3) matrix, then **S**² must also be a (3×3) matrix. There cannot be 2-Dimensional Spin Matrices.

However, there is a problem. As soon as we represent the x, y, z components of the Spin Operator **S** by Spin Matrices of any order S_x , S_y , S_z , the matrix **S** is no longer a square matrix, no longer invertible, no longer symmetric, no longer Hermitian, and no longer has an eigenvalue representation, and hence S is no longer an Operator of an Observable or no longer a Spin Operator. Matrix Operators cannot be in the relationship $J^2 = \mathcal{L}^2 + S^2$.

Lemma:

Bipolar Spin of a particle cannot take place in 2D. Bipolar Spin takes place in 3D. There cannot be (2×2) Spin Matrix Operators for 3D Bipolar Spins. A particle cannot even have an existence in a 2D. Pauli's 2D Up and Down representation requires Spin monopoles. There are no Up and Down Spin monopoles.

Lemma:

Spin-Up and Spin-Down exist for an observer's eyes only. One observer's Up can be Down for another observer. An entity that exists only for an observer's eyes cannot come in Quanta. A Particle has no clue to how observers perceive its Spin since a Spin can be Up for one observer and the same Spin can be Down for another Observer.

Lemma:

A Spin Operator with Spin Matrices as its x, y, z axes components cannot be an Operator of an observable since it becomes a matrix that is not square, not Hermitian, not invertible, and has no eigenvalue representation. Spin matrices or Angular Momentum Matrices of any order cannot represent Operators of Observables. Pauli's Spin Matrices cannot represent Operators of Observables since the substitution of the Pauli's spin matrices in an Angular Momentum or Spin Operator prevents it being an

Operator of an Observable.

/. 3-DIMENSIONAL SPIN-MATRIX OPERATORS

We have seen that there cannot be (2×2) Spin Matrix operators. Now the question is, "Can there be (3×3) Matrix Operators?" Let us consider (3×3) Matrix Operators that satisfy the relationship,

 $S \times S = j(2\eta \hbar) S$ (4.9.1) When $\eta = 1/2$, we have it for the de Broglie wavelength for e=pc that a particle of momentum p and mass m cannot support.

When $\eta=1$ we have it for the fitting wavelength for a particle of mass for $e=p^2/2m$.

The fitting wavelength is the wavelength that the energy of a particle of momentum p and mass m can support and hence $\eta=1$. No particle of momentum p and mass m has the energy required to be at de Broglie wavelength.

The (3×3) Matrices given below satisfy the self-cross product relationship $S \times S = j(a\hbar)S$.

S,=aħ	0 1 0	S_=aħ	0-j0	S,=√2aħ	100
	101	1	j 0 - j		0 0 0
	010]		0 j 0		0 0 -1

 $a=1/\sqrt{2}$ (for de Broglie wavelength) [11],

 $a=\sqrt{2}$ (for fitting wavelength)

|**S**_i|=0 and Trace [**S**_i]=0, i=x, y, z.

 \mathbf{S}_{x} , \mathbf{S}_{y} , \mathbf{S}_{z} are Non-Invertibles, and hence do not represent Operators. Operators Must be Invertible.

Operators S_x , S_y , S_z are Hermitian or conjugate symmetric. Further Trace $[S_i]=0$, i=x, y, z. Now, we can obtain the Operator S^2 ,

$$\begin{split} & \textbf{S}^2 = [\textbf{S}_x^2 + \textbf{S}_y^2 + \textbf{S}_z^2] \quad (4.9.2) \\ & \text{Substituting for } \textbf{S}_x, \ \textbf{S}_y, \ \textbf{S}_z, \text{ since } \eta = \sqrt{2} \text{ for the fitting } \\ & \text{wavelength, we get,} \end{split}$$

S ² =8ħ ² I	(4.9.3)
$S_x \varphi = S_x \hbar \varphi$	(4.9.4)
$\mathbf{S}_{\mathbf{v}}\varphi = \mathbf{S}_{\mathbf{v}}\hbar \varphi$	(4.9.4)
$\mathbf{S}_{z}\varphi = \mathbf{S}_{z}\hbar \varphi$	(4.9.4)
and the solution of the s	

where, 'I' is an identity matrix.

The Eigenvalues of S_z are s=0, s=±2. It has three orthogonal basis vectors.

It is noteworthy that the Angular momentum is Bi-Polar and hence cannot be quantized; it cannot come in quanta since there are no Spin Monopoles or Magnetic Monopoles.

Irrespective of the order of the matrices S_x , S_y , S_z , when the \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z in the Angular Momentum Operator \mathcal{L} is replaced by Matrices S_x , S_y , S_z , the resulting matrix $L=[S_x,S_y,S_z]^T$ is not a square matrix, not Hermitian, not invertible, has no eigenvalue representation, and is no longer an Angular Momentum or Spin Operator of an Observable. Spin matrices S_x , S_y , S_z cannot exist in association with an Angular Momentum Operator \mathcal{L} or Spin Operator S. The matrix $S=[S_x,S_y,S_z]^T$ does not represent an Operator of an Observable; it is not an Operator of an Observable. Lemma:

The matrix $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ is not a square matrix and does not represent an operator of an observable. The matrix \mathbf{S} is meaningless. The components \mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z in the angular momentum operator \mathcal{L} or the components \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z of Spin Operator \mathbf{S} cannot be replaced by Matrices \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z of any order.

Spin Matrix Operators S_x , S_y , S_z of any order cannot exist without the accompanying Position and Momentum Matrix Operators. As we are going to see, if there is a Spin Matrix Operator of finite dimension, there must also exist finite Position and Momentum Matrix Operators, which is a contradiction since there cannot be finite Position and Momentum Matrix Operators in Quantum Mechanics. Finite Position and Momentum Matrix Operators cannot satisfy the non-commutation relationship fundamental to Quantum Mechanics. Therefore, there cannot be any Spin-Matrices.

Lemma:

As soon as the x, y, z components of an Angular Momentum Operator are replaced with the Spin Operators \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z , the resulting Matrix Operator is no longer an Operator of an Observable; it is no longer an Angular Momentum Operator or Spin Operator.

Lemma:

There are no Spin Matrix Operators. Pauli's spin matrices have no existence. Matrices cannot represent Operators of Observables in Quantum Mechanics.

The assumption in Quantum Mechanics that the Spin or the Angular Momentum comes in quanta is false, a result of the Stern-Gerlach experimental blunder. Vectors cannot come in quanta. The concept of a quantum without a header is nonsense, it cannot exist. The direction of a vector is observer dependent. Observer dependent quantities cannot be quantized. Observer dependent quantities cannot come in quanta. Spin and the Angular momentum are Bi-Polar. Bi-Polar quantities cannot be quantized without the existence of corresponding Monopoles. There are no Spin or Angular Momentum Come in Quanta; they cannot be quantized.

J. Noteworthy:

- Stern-Gerlach Device is not a Spin Measuring Instrument. It is a volatile Spin enforcer. You are either in my direction or against it, not in between. You are either with us or against us, Bushism.
- Setting of the Spin of an Atom using SGMF is volatile; it only holds as long as an Atom is within the SGMF.
- Stern-Gerlach Device can neither set nor measure nor filter the Spin of an Atom permanently.

- SGMF forces the Orientation of an Atom or Spin to be in the direction of the SGMF, if it is not already against it, as long as the Atom is within the SGMF.
- When an Atom leaves the SGMF, Atom will no longer be in the direction of SGMF or against the SGMF. It is the failure to realize these facts that led to the Quantum Weirdness.
- Bipolar spins cannot have unipolar Up and Down. A Bipolar Spin cannot come in Unipolar Up and Down Quanta.
- Up and Down cannot be in a superposition since Up has no independent existence without Down and vice versa.
- The direction of the Spin of a particle that has no existence without an observer is not a state of a particle.
- All the Spins do not have an associated magnetic field. Every magnetic field is not a result of a Spin. The spinning charge particles have an associated Spin Magnetic Field. An Atom has a Spin Magnetic Field since an Atom is an orbiting system of charge particles. Spinning electrically neutral particle has no Spin Magnetic Moment.
- Spin is a property of an orbiting system. A particle ejected from an orbiting system carries its Spin with it. A particle that has never been in an orbiting system has no Spin. Spin is not a fundamental property of a particle.
- Spin Magnetic Moment is static. The Spin Magnetic Moment is anchored to an Atom or a charge particle. Propagating magnetic field of an electromagnetic wave is not a Spin.
- Magnetic Field of light is not a Spin.
- The Polarization of light is not a Spin. Polarization is unipolar. Spin is Bipolar.
- The Spin of a particle cannot be both Up and Down simultaneously relative to an observer since Up has no existence without Down and vice versa. However, a beam of light can have both Horizontally and Vertically polarized waves. The existence of Horizontal polarization does not depend on the existence of Vertical Polarization and vice versa.
- Horizontal and Vertical Polarizations are mutually independent. Up and Down of a Spin are mutually dependent; they are perfectly correlated negatively.
- Polarization of light cannot be used to demonstrate the properties of the Spins of particles of mass.
- Polarization of light cannot simulate Spins of particles.
- A spinning neutral particle has no magnetic field and hence the direction of the magnetic Moment of a charged particle or an Atom cannot be used to represent the properties of all the spinning particles in general.

Lemma:

Polarization is unipolar. Unipolar Horizontal (H)

and Vertical (V) Polarizations can be in superposition since H and V have mutually independent existence. Spin is Bipolar. Bipolar Up and Down Spins cannot be in superposition since Up has no existence without Down and vice versa.

Lemma:

Spin Magnetic Moment is static. The magnetic field of a propagating electromagnetic wave is not a Spin. Polarization of light is not a Spin. Light has no Spin.

Lemma:

Horizontal polarization (H) and the vertical polarization (V) of light cannot be used to simulate Spin-Up and Spin-Down of a spinning particle.

Lemma:

Orbital Angular Moment, Spin Angular Momentum, as well as Spin Magnetic Moment are vectors. Vectors do not come in Quanta; vectors cannot be quantized.

Lemma:

Direction of Spin is relative, Observer dependent. Observer dependent quantities cannot be Quantized. Observer dependent quantities cannot be states of a particle. Spin-Up and Spin-Down that have no existence independent of observers are not states of a particle.

Lemma:

Spin-Up or Spin-Down is not a Signature of a Particle. Spin-Up and Spin-Down have no existence without an Observer. Spin-Up for one Observer can be Spin-Down for another Observer. Bipolar spins cannot have Unipolar Spin-Up and Spin-Down states. The direction of Spin is not a parameter of the state of a particle.

V. MATRIX OPERATORS CANNOT REPRESENT ANGULAR MOMENTUM

Angular momentum operator is given by, \mathcal{L} =**r**×**P**

(5.1)

where, **r=rI**, '**I**' is an identity operator, **r**=(x,y,z), **P**=(\mathbf{P}_x , \mathbf{P}_y , \mathbf{P}_z), \mathcal{L} =(\mathcal{L}_x , \mathcal{L}_y , \mathcal{L}_z).

Angular Momentum Operator satisfies the self-cross-product relationship,

$$\mathcal{L} \times \mathcal{L} = j(2\eta\hbar)\mathcal{L}$$
 (5.2)

When $\eta=1/2$, we have it for the incorrect de Broglie wavelength for e=pc that a particle of momentum p and mass m cannot support. The wavelength that had been derived for a photon of hypothetical momentum p and mass zero cannot be extended to a particle of momentum p and mass m.

When $\eta=1$ we have it for the fitting wavelength for energy $e=p^2/2m$ that a particle of momentum p and mass m can support.

If S_x , S_y , S_z are square matrices of order (M×M), M≥2, then, we have angular momentum matrix operator **S** of order (3M×M), $S \in \mathbb{G}^{(3M \times M)}$, S_x , S_y , $S_z \in \mathbb{G}^{(M \times M)}$.

Since $\mathcal{L}=\mathbf{r}\times\mathbf{P}$, for a Spin Matrix Operator **S** to exist, an Angular Momentum Matrix operator **L** has to exists. For the Angular Momentum Matrix **L** to exist, there must also exist a Matrix R representing the Position Operator and a Matrix P representing Momentum Operator so that,

> $\mathbf{R}=[\mathbf{R}_{x},\mathbf{R}_{y},\mathbf{R}_{z}]$ (5.3)

$$\mathbf{P}=[\mathbf{P}_{x},\mathbf{P}_{y},\mathbf{P}_{z}] \tag{5.4}$$

$$\mathbf{L}_{\mathbf{y}} = \mathbf{R}_{\mathbf{z}} \mathbf{P}_{\mathbf{x}} - \mathbf{R}_{\mathbf{x}} \mathbf{P}_{\mathbf{z}}$$
(5.0)

$$z = \mathbf{R}_{\mathbf{x}} \mathbf{P}_{\mathbf{y}} - \mathbf{R}_{\mathbf{y}} \mathbf{P}_{\mathbf{x}}$$
 (5.7)

where, $\mathbf{R}_x, \mathbf{R}_y, \mathbf{R}_z \in \mathbb{C}^{(M \times M)}$, $\dot{\mathbf{P}}_x, \mathbf{P}_y, \mathbf{P}_z \in \mathbb{C}^{(M \times M)}$, Matrix Operators R and P are of order (3M×M),

 $\mathbf{R}, \mathbf{P}, \mathbf{L} \in \mathbb{G}^{(3M \times M)}, \mathbf{R}_x, \mathbf{R}_y, \mathbf{R}_z$ are the components of the Position Matrix Operators and $\boldsymbol{P}_{x},~\boldsymbol{P}_{y},~\boldsymbol{P}_{z}$ are the components of the Momentum Matrix Operators of order (M×M) on x, y, and z axes. Position and Momentum Matrix Operators must be Hermitian or conjugate symmetric, which implies that they must be square. In other words, if the Component Angular Momentum Matrix Operators or the Component Spin Matrix Operators on x, y, and z, S_x , S_y , $S_z \in \mathbb{C}^{(M \times M)}$ exist, for them to exist, there must also exist corresponding Component Position Matrix Operators $\boldsymbol{R}_{x},~\boldsymbol{R}_{y},~\boldsymbol{R}_{z}$ and Component Momentum Matrix Operators P_x , P_v , P_z , all of which are of order (M×M) on x, y, and z axes.

If the Component Position Matrix Operators \mathbf{R}_{x} , \mathbf{R}_{y} , \mathbf{R}_{z} and Component Momentum Matrix Operators \mathbf{P}_{x} , \mathbf{P}_{y} , \mathbf{P}_{z} , all of which are order (M×M) exist on x, y, and z axes, we have the non-commutation relationships.

 $\mathbf{R}_{n}\mathbf{P}_{n}-\mathbf{P}_{n}\mathbf{R}_{n}=\mathbf{j}(2\hbar)\mathbf{I}, n=x, y, z.$ (5.8)where 'I' is the identity operator of order (M×M). For these to be true,

Trace $[\mathbf{R}_n \mathbf{P}_n - \mathbf{P}_n \mathbf{R}_n]$ =Trace $[j(2\hbar)\mathbf{I}]$, n=x, y, z. We know that,

(5.9)

Trace $[\mathbf{R}_n\mathbf{P}_n-\mathbf{P}_n\mathbf{R}_n]=0$, n=x, y, z (5.10)Trace $[j(2\hbar)I]=j(2\hbar M), \forall M \neq 0.$ (5.11)

This is a contradiction.

Trace $[\mathbf{R}_n \mathbf{P}_n - \mathbf{P}_n \mathbf{R}_n] \neq$ Trace $[i(2\hbar)\mathbf{I}]$, n=x, y, z. (5.12)As a result, there cannot be Position and Momentum Matrix Operators of finite dimension. Matrix operators of infinite dimension are not Hermitian symmetric, not invertible, have no eigenvalue representation, and as a result, the Position and Momentum Matrix Operators have no existence. Without Position and Momentum Matrix Operators, the Spin Matrix Operators have no existence. So, irrespective of whether it is Orbital Angular Momentum or Spin Angular Momentum, Angular Momentum Matrix Operators or Spin Matrix Operators of finite dimension (M×M), M≥2 cannot exist.

One may argue that matrix operators of infinite dimension can bypass this situation and hence matrix operators of infinite dimension can represent Operators in Quantum Mechanics. This is exactly the argument that has been used to justify Heisenberg's Matrix representation of Quantum Mechanics [1]. However, this argument is false, and invalid. For matrix operators to be operators in Quantum Mechanics, the matrices must be Hermitian symmetric square matrices. Matrices of infinite dimension cannot be square. Matrices of infinite dimensions cannot be Hermitian symmetric. Matrices of infinite order are not invertible. Matrices of infinite dimension have no

eigenvalue representation. A matrix that has no eigenvalue representation cannot be an Operator of an Observable. Matrices of infinite order have no eigenvalues.

As a result, matrix operators cannot be in Quantum Mechanics, where the non-commutation relationship fundamental. Without the non-commutative is relationships, there would be no Quantum Mechanics. operators. there would be With matrix no non-commutative relationships.

It is also important to point out that the non-commutative relationships in Quantum Mechanics is a result of invalid choice of the Position Operator. If the position and momentum of a particle is assumed to behave as a wave, the Position Operator and Momentum Operator are predefined by the plane wave itself and hence we cannot define the Position Operator as the position itself. The natural Position and Momentum Operators that emerge from the plane wave equation commute. The non-commutation of Position and Momentum Operators in Quantum Mechanics is a result of the invalid choice of the Position Operator as the position itself.

We know that the Component Spin Matrix Operators, S_x , S_y , S_z of order 2×2 and 3×3 satisfy the non-commutative relationships since they are Hermitian and Trace [S_n]=0, n=x, y, z. However, L_x, L_y, Component Matrix Operators for Angular L, Momentum cannot exist without the existence of Matrix Operators for Position and Momentum. As a result, any Matrix Operator that satisfies the self-cross-product, $\mathcal{L} \times \mathcal{L} = j(2\eta\hbar)\mathcal{L}$ does not represent an Angular Momentum, neither Orbital nor Spin. Any Operator Spin Matrix that satisfies the self-cross-product, S×S=j(2nħ)S does not represent a Spin. When $\eta = 1/2$, we have it for the de Broglie wavelength for e=pc. When n=1 we have it for the fitting wavelength for a particle of mass for $e=p^2/2m$. Spin Matrices S_x , S_y , S_z are non-invertible, $|S_i|=0$, i=x, y, z except for the (2×2) Pauli's Spin Matrices.

Pauli's 2D Spin Matrices are invertible. Despite the invertibility of Pauli's 2D Spin Matrices, Spin Matrices of any order cannot represent the x, y, z component of an Angular Momentum Operator or Spin Magnetic Moment since the matrix $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ is not Hermitian, have no eigenvalues, not invertible, and have no eigenvalue representation. And hence, Spin Matrix **S** with Pauli's 2D Spin Matrix Operators **S**_x, **S**_y, S_z as x, y, and z axes Components does not represent the Operator of an Observable. Spin Matrices are not Operators of Observables. Spin Operator loses its Operator status if the x, y, z components of the Operator are replaced by the Spin Matrix Operators S_x , S_y , S_z . Spin Matrix Operators S_x , S_y , S_z have no existence. You cannot replace the x, y, and z component of a Spin by Matrix Operators because if you do that it is no longer the Operator of an Observable.

Theorem:

There cannot exist a Spin Matrix Operator or Matrix Angular Momentum Operator without Position

and Momentum Matrix Operators. Position and Momentum Matrix Operators have no existence in Quantum Mechanics and hence Spin Matrix Operators cannot exist.

Although the Position and the Momentum Operators generate Angular Momentum Operator L that satisfies the auto cross-product relationship $\mathcal{L} \times \mathcal{L} = i(2\hbar)\mathcal{L}$, the reverse is not necessarily true. Any matrix **S** that satisfies $S \times S = j(2\hbar)S$ does not represent Spin Operator. If you can reverse it with Matrix Operator S, then, you must also be able to forward it with Matrix Operators, which creates a contradiction in Quantum Mechanics. It is not possible to go in forward direction with Position Matrix Operators and Momentum Matrix Operators in deriving the Angular Momentum Operators since Matrix Operators cannot satisfy the non-commutative matrix relationship **RP-PR**= $j(2\hbar)$ **I** or [**R**,**P**]= $j(2\hbar)$ **I**, where, **R** is the Position Matrix Operator, P is the Momentum Matrix Operator, and 'I' is the identity Matrix Operator. Matrix Operators, irrespective of whether they are finite dimensional or infinite dimensional, cannot satisfy the non-commutative relationship $RP-PR=j(2\hbar)I$, which is the very foundation of Quantum Mechanics, without which Quantum Mechanics has no existence.

Further, in order for matrix operators to satisfy the non-commutative relationship \mathbf{RP} - \mathbf{PR} = $j(2\hbar)\mathbf{I}$, matrix operators \mathbf{R} and \mathbf{P} must be square matrices. For a matrix to be a square matrix, it must be of finite dimensional. As a result, no matrix operator can satisfy the non-commutative relationship \mathbf{RP} - \mathbf{PR} = $j(2\hbar)\mathbf{I}$. Matrices of infinite order cannot be square. Matrix operators of infinite order are non-invertible and have no eigenvalue representation.

Lemma:

Matrices of infinite dimensions cannot be Operators of Observables.

Pauli's Spin matrices make functioning operators dysfunctional. The eigenvalues of Operators are the basis of Quantum Mechanics. Matrix Operators of neither finite nor infinite order can be in Quantum Mechanics.

More importantly, for a Matrix Operator to represent an Observable, the Operator must be Hermitian. For a matrix Operator to be Hermitian, it must be square. For a Matrix Operator to be square, it must be finite dimensional. Matrices of infinite dimensions cannot be square, cannot be Hermitian. No matrix of infinite dimension can be Hermitian since matrices of infinite dimension cannot be square. Matrices of infinite order are not invertible and have no eigenvalue representation and hence the Matrices of infinite dimensions cannot be Operators of Observables. Quantum mechanics is out of bound for Matrix Operators of any dimension. Matrix Operators have no place in Quantum Mechanics.

Lemma:

Pauli's Spin Matrices make Operators in Quantum

Mechanics dysfunctional. Matrix Operators are out of bound for Quantum Mechanics. Pauli's Matrix Operators have no existence.

Corollary:

Pauli's Matrix Operators are not required since the magnetic coupling of neighboring Spin Magnetic Moments of electrons or Atoms is natural.

Lemma:

Matrix Operators of infinite dimensions cannot represent observables since infinite dimensional matrices are not guaranteed to be Hermitian, not invertible, and have no eigenvalue representation. A Matrix that has no eigenvalue representation cannot be the Operator of an Observable.

Lemma:

Matrix Operators of finite dimensions cannot represent Observables since finite dimensional matrices cannot satisfy the non-commutative relationship in Quantum Mechanics.

Theorem:

Matrix Operators cannot represent Operators of Observables in Quantum Mechanics.

VI. PARTICLES HAVE NO SPIN-UP STATE OR SPIN-DOWN STATE

Spin is Bipolar. Spin is not a fundamental property of a particle. Spin is a property of orbiting systems. If a particle has a Spin, it must be a particle that is ejected from an orbiting system. A particle that had never been in an orbiting system cannot have a Spin. Spin-Up and Spin-Down are not states of a particle. Whether a particle is Spin-Up or Spin-Down is determined by an Observer, not a particle itself. Spin-Up for one Observer can be Spin-Down for another. Bipolar Spin cannot come in Unipolar Quanta.

Lemma:

Spin cannot come as Up and Down quanta since Spin-Up and Spin-Down are not states of a particle.

Lemma:

Whether a particle is Spin-Up, Spin-Down, Spin-Right, Spin-Left, Spin-In or Spin-Out depends on the location of the Observer. A Spin-Up particle for an Observer at one location can be Spin-Down, Spin-Right, Spin-Left, Spin-In or Spin-Out for the same Observer at a different location.

A. Spin Magnetic Moment of an Atom: The Origin

Spin is a property of an orbiting system. Orbiting systems such as atoms generate angular momentum. It is this residual orbiting angular momentum that generates the Spin of an atom or of any orbiting system in general so that the net angular momentum of an atom or orbiting system is zero. The spin of an atom generates a Spin angular momentum, which counteract the orbiting angular momentum so that the net angular momentum of the atom is zero. The net angular momentum of an orbiting system must be zero. That is why we have spinning electrons, spinning nuclei, spinning planets, stars and galaxies.

Lemma:

Spin of an Atom and the particles in an Atom is a result of maintaining the net Angular Momentum of Atom to be nil. Although the Spin of an Atom maintains the net angular momentum of an Atom to be zero, it results in a nonzero Spin Magnetic Field since an Atom is an orbiting system of charge particles. There is no Spin if the orbiting system contains electrically neutral orbiting particles.

Although an atom is electrically neutral, when an atom spins on an axis through the nucleus, in effect, it is the electrically charged nucleus that is spinning. Spinning nucleus generates Spin Magnetic Moment (SMM). In addition, when a nucleus spins, the Spinning nucleus also takes its bound electrons in a Merry-Go-Round ride generating Spin Magnetic Moment (SMM), which annihilates the Orbit Magnetic Moment due to the orbiting electrons. Although the net angular momentum of an atom, that is the sum of the orbiting angular momentum plus the Spin angular momentum, is zero, the Spin Magnetic Moment of the neutral atom is not zero since the orbit angular momentum of an orbiting system is not zero. We will consider how a neutral atom generates a Spin Magnetic Moment (SMM) in detail later.

Theorem:

Even though an Atom is electrically neutral, a spinning Atom generates a Spin Magnetic Moment (SMM) since a neutral Atom consists of orbiting charge particles. Spin is an inherent property of every orbiting system. Every Atom is an orbiting system and every Atom spins.

Lemma:

Spin of a particle is a result of being a part of an orbiting system. When a particle is dislodged from an orbiting system, it carries with it the spin that it possessed while it was a part of the orbiting system. A particle has no spin unless it is in an orbiting system or it is an ejected particle form an orbiting system.

Lemma:

Polarization is not Spin. Light is not a particle and light has no Spin. Spin Magnetic Field is static. The magnetic field of a propagating electromagnetic wave is not a Spin. Polarization of light is not a spin. Spin is Bipolar. Polarization is Unipolar. Unipolar Polarization cannot be a Bipolar Spin. There are infinitely many polarizations. But, a Spin is either Spin-Up or Spin-Down. Polarization has no relation to the Spin of a particle.

B. No Spin-Up or Spin-Down Particles

When a charge particle spins about its own axis, it generates a Spin Magnetic Moment (SMM). The SMM

is always orthogonal to the plane of Spin. This Spin is neither Up nor Down. Nature has no Up direction or Down direction. Nature has no clockwise direction or anti-clockwise direction. Up and Down are not states of a particle. Up and Down exist only relative to an observer. There is no 'Up' or 'Down' without an observer. A particle is Spin-UP or Spin-Down only relative to an Observer.

Assume you have a particle with Spin Magnetic Moment that you consider to be Spin-Up position. Now, rotate the observer by 180° degrees. Now, the particle is no longer a Spin-Up particle for the same observer. It is now a Spin-Down particle for the observer. But the particle did not change. Spin did not change. What has changed is the orientation of the observer with respect to the direction of the Spin of the particle. It is the observer that was rotated. This rotation is done by an observer. Spin of the particle is the same. Spin-Up and Spin-Down are not properties that are intrinsic to a particle; they are not states of a particle. It is only the Spin that is intrinsic to an orbiting system, not the directions Spin-Up or Spin-Down. The Up or Down of a Spin that exists only relative to an observer cannot be one of properties of the state of a particle.

C. Orientation of Neighboring Electrons

Individual electrons are particles that have dislodged from an orbiting system, an Atom. When electrons are dislodged from an Atom, electrons carry with them their Spin they possessed while they were in the Atomic Orbiting system. Assume you have two electrons nearby. If an electron is spinning, that Magnetic Moment generates Spin (SMM) perpendicular to the plane of spin. The Spin Magnetic Moments of two nearby electrons have their orientation one against the other. Two neighboring electrons have their SMM oriented in opposite directions for a very simple reason. The opposite polarities attract, and similar polarities repel. It is this very basic reason why two electrons have the opposite orientations of their SMM, or why no two neighboring electrons can have the same SMM orientation. It has nothing to do with Pauli matrices or a high-sounding Exclusion Principle. There is no Exclusion Principle. Pauli Matrices cannot represent Spin. Pauli's Spin Matrices cannot be the Operators of Observables. When Pauli's Spin Matrices take place as the x, y, and z components of a Spin Operator, that Operator is no longer an Operator of an Observable. Matrices cannot represent Spin Operators. The x, y, z components of an Up or Down Spin Operator cannot represented by orthogonal eigenvectors of be independent x, y, and z Component Matrix Operators representing Up or Down states on x, y, and z axes.

When two electrons are nearby, they repel each other since they both are electrically negative. However, they have their orientation of Spin Magnetic Moments (SMM) against one another generating an attractive magnetic force. The repulsion due to the electrostatic force and the attraction due to the Spin Magnetic force keep the electrons coupled at a distance, not too close, not too far, just the right social distance. No two electrons can be further apart or too close due to the leverage of electrostatic force and the Spin Magnetic force between two electrons. In an Atom, several electrons can be in the same orbit, yet, they keep their social distance due to the balance of electrostatic and Spin Magnetic Forces. When there are only two electrons in an orbit, they are not in the opposite ends of the orbit. They will be close to each other, but not too close. The distance between the two electrons are determined by the Spin Magnetic force and the electrostatic force of the electrons. This allows Atoms to form weak bonds with one another.

Lemma:

The coupling distance between two electrons is determined by the attractive Spin Magnetic force and the repulsive electrostatic force between the electrons.

D. What is Up with Spin-Up

When we look at a particle from one direction, we may see it as a Spin-Up particle by our definition relative to us. If we see the same particle from the opposite direction, we see the same particle as a Spin-Down particle relative to us. The particle did not change. What changed was the direction we looked at the particle, our point of view. What changed was our perspective of the particle. The orientation of a particle with respect to an observer-defined direction tells us if the particle is Spin-Up or Spin-Down. Nature cannot quantize something it has no clue about. Nature cannot quantize something we, observers, envision.

What determines the orientation of the magnetic moment of a particle is the external environment. If a particle is in an external magnetic field, it will align with the external magnetic field as a result of the torque generated. If a particle is next to another particle, both particles align to face opposite polarities due to the attraction of the opposite and the repulsion of the similar.

The Spin-Up has no independent existence on its own. Spin-Down has no independent existence on its own. Spin-Up and Spin-Down only have a dual existence; they always exist together, but in opposition, in the same particle since a Spin is bipolar. Bipolar Spin cannot have unipolar Up and Down. Spin-Up has no existence without Spin-Down and vice versa. Spin-Up and Spin-Down are not orthogonal. Spin-Up and Spin-Down cannot be orthogonal without Spin monopoles and magnetic monopoles. If Spin-Up is represented as a 2D vector,

 φ_{up} =[1, 0], then,

Spin-Down is NOT [0, 1], $\varphi_{dn} \neq [0, 1]$,

Contrary to what is implied by Pauli's (2×2) Spin matrices,

φ_{dn} ≠[0, 1].

In fact, if Spin-Up is represented as, φ_{up} =[1, 0], then, the Spin-Down, φ_{dn} is given by,

 φ_{dn} = - φ_{up} φ_{dn} =[-1, 0]

φ_{dn} = (exp(j π)) φ_{up}

Spin-Up and Spin-Down are 180° out of phase.

In addition, Spin cannot be represented by 2D vectors. No particle can even exist in 2D space. If no particle can even exist in 2D Space, how can a particle Spin in 2D Space? There are no 2D spins. Spin is 3D. The direction of Spin is 3D. Mathematical representation of a Spin must be in 3D. 2D Spin Matrices cannot exist. The representation of the direction of a Spin relative to an Observer must be in 3D. 2D Up or Down has no meaning without 3D reference.

In other words, Spin-Down is nothing more than 180° degrees rotation of the Spin-Up vector. The (2×2) Spin matrices or Pauli matrices-based representation where Spin-Up is represented as vector [1, 0] and the Spin-Down is represented as an orthogonal vector [0, 1], is incorrect. A Spin-Up vector cannot be orthogonal to the Spin-Down since they have no independent existence. Spin-Up and Spin-Down are not mutually exclusive. Particles do not have Up or Down states intrinsic to particles. Spin-Up is the same as Spin-Down except the 180° phase difference relative to each other or relative to an observer. Up and Down are not orthogonal and they cannot have 90 degrees phase difference.

Lemma:

Spin-Up and Spin-Down are not orthogonal. Spin-Up and Spin-Down are perfectly correlated negatively. Spin-Down is 180° rotation of Spin-Up relative to an observer,

 $\varphi_{dn}=(exp(j\pi))\varphi_{up}$

E. Orientation of Atoms are Not Random

The Spin is an inherent property of an Atom, an orbiting system. Although an Atom is electrically neutral, an Atom has a Spin Magnetic Moment. All the silver Atoms have the same magnitude of the Spin. Atoms with the same atomic number have the same Spin magnitude. It is only the direction of the Spin Magnetic Field that may vary from Atom to Atom of the same atomic number or of the same kind.

The orientation of a silver Atom, i.e. the direction the Spin Magnetic Moment, is determined by the neighboring silver Atoms as well as the External Magnetic Field of the environment the Atoms are in. The orientation of an Atom is never random since neighboring Atoms are magnetically coupled and solely determined by the attraction of the opposite and the repulsion of the alike as well as the Alignment Torque in the presence of an External Magnetic Field. As we are going to see later, this is exactly the reason why a beam of Silver Atoms is split into two separate beams of equal number of Atoms in the Stern-Gerlach experiment. The fact that a beam of Silver Atoms is split into two beams of equal number of Atoms by the Stern-Gerlach Device is an indication that there is no probability involvement with the Spin and the Stern Gerlach Device. Nature does not do probability.

A particle does not have its own Spin orientation signature. The orientation of a Spin is not a state of a

particle. Bell's theorem is false and meaningless. It is the whole Spin Magnetic Moment that orients towards an external magnetic field, not a component of the Spin in the direction of the External Magnetic Field. The component of the Spin on an axis cannot be obtained using an External Magnetic Field or using the Stern-Gerlach Magnetic Field since it is the whole Spin Magnetic Moment that aligns with an external magnetic field or Stern-Gerlach Magnetic Field, not a component of the Spin in the direction of the Stern-Gerlach Magnetic Field or any External Magnetic Field. The orientation of the Spin of an Atom is not a property of a particle. The Orientation of an Atom is not random. It is determined by the population of Atoms as well as the magnetic field, if any, of the environment it is in.

F. Spin Up and Spin-Down are Observer Labels

There are no Spin-Matrix operators. There are no Pauli Matrix Operators in action in a charge particle. Matrices as Operators Observables have no place in Quantum Mechanics. There is no need for an Exclusion Principle. What is there is Magnetic Coupling of neutral Atoms. Even though atoms are neutral, every Atom has a Spin Magnetic Moment (SMM). There is no Spatial Quantization of Spins as Up or Down. There are no Ups and Downs in Nature:

- Spin-Up and Spin-Down are observer perspectives. They are not inherent properties of a particle or Nature. Orbiting systems Spin. There is no Spin-Up or Spin-Down without an Observer. Spin is Bipolar. Bipolar Spins have no Unipolar Up and Down.
- Since there are no Ups and Downs in nature, nature cannot quantize something nature does not have.
- Spin-Up and Spin-Down are not states of a particle.
- The so-called Spin-Down is nothing more than 180° degree rotation of a Spin-Up atom relative to the environment or an Observer. What is anti-clockwise for people in the northern Hemisphere of the Globe is Clockwise for those in the Southern Hemisphere of the Globe.
- The direction of the Spin of a particle is observer dependent; it is not a state of a particle.
- Spin is an inherent property of particles in an orbiting system, not an inherent property of a particle.

Lemma:

Spin-Up and Spin-Down are not absolute, they vary from observer to observer depending on the location of the observer.

VII. SPIN MAGNETIC MOMENT (SMM)

Every orbiting system spins. The spin of an orbiting system is against the direction of the orbits. The spin of an orbiting system is such that the angular momentum of the orbiting system is canceled out by the spin angular moment of the orbiting system. In the case of an atom, angular momentum of the orbiting electrons is canceled out by the spin angular momentum of the atom. However, although there is no net angular momentum of an atom, there will be a net Spin Magnetic Moment since an atom consists of charge particles. Although an atom is electrically neutral, a spinning atom consists of a net Magnetic Moment since the nucleus has a larger surface area and contains a larger charge than electrons. This is the reason why a beam of electrically neutral silver atoms that passes through a Stern-Gerlach device splits into two beams with opposite spin orientations of Spin Magnetic Moment.

Theorem: Spin Magnetic Moment (SMM)

For a particle of radius r and charge q spinning on its own axis at spin frequency f, the Spin Magnetic Moment (SMM) μ is given by,

$\mu = (3/128) q \omega A_s$

where $\omega=2\pi f$, A_s is the surface area of the particle, $A_s=4\pi r^2$.

The direction of the Spin Magnetic Moment is orthogonal to the plane of the spin.

Consider a particle of charge q and radius r at the origin of a coordinate system (x, y, z). Assume that the center of the mass is at the origin and the particle is spinning at frequency f on the z-axis. The radius of the mass is r. If the charge is uniformly distributed on the surface, the surface density ρ of the charge is given by,

$\rho = q/(4\pi r^2)$ (7.1)	
When a charge particle spins, it generates a Spin	
Magnetic Moment (SMM) μ . We want to find μ . Let us	
consider a cross sectional slice at distance z parallel	
to the xy-plane at an angle θ with z. Then, the radius	
of the slice is r sin θ . If the thickness of the slice is ∂z ,	
the charge ∂q of the slice is given by,	

$$\partial q = \rho(2\pi r \sin \theta) \partial z$$
 (7.2)
The Spin Magnetic Moment (SMM) due to the spinning of the slice is given by,

ng of the slice is given by,

$$\partial \mu = (f \partial q)[\pi (r \sin \theta)^2]$$
 (7.3)

where, f is the frequency of the Spin.

For a positively charged particle spinning on xy-plane around z-axis in the counterclockwise direction, the direction of the Spin Magnetic Moment $\partial \mu$ is in the z direction. As far as the particle is concerned, the direction does not matter since the particle has no preferred choice of direction; it is not spinning for a determined purpose. Spin of an orbiting system is a balancing act brought forward by the Orbital angular momentum so that the Spin angular momentum is equal and opposite of the Orbital angular momentum. It is the angular momentum of an orbiting system that brings the particle to spin so that the net angular moment of the orbiting system or the sum of the orbital angular momentum and the Spin angular momentum is zero.

Spin angular momentum counterbalances the Orbital angular momentum. In the case of an atom, the result is the Spin of electrons and the nucleus of the atom so that the net total angular momentum of an atom is zero. All atoms of the same kind (same Atomic number) have the same magnitude of Spin. It is only the orientation that may differ from atom to atom. The orientation is determined by the external forces.

As far as a particle is concerned, spin is bipolar and the orientation is immaterial since both directions reside in the same particle concurrently. There are no spin unipoles. Spin seen from one side will be directly the opposite of the same Spin seen from the opposite side by an observer. The direction of Spin only has a meaning for an Observer, not for a particle or nature.

Now, we have,

 $\partial \mu = [f (\rho(2\pi r \sin \theta) \partial z)][\pi(r \sin \theta)^2]$ (7.4) Since z=r cos θ , we have,

 ∂z =-r sin(θ) $\partial \theta$ (7.5) Substituting for ρ and ∂z in Eqn. (7.4), we have, $\partial \mu$ =-(qf/2) ($\pi r^2 \sin^4 \theta$) $\partial \theta$)] (7.6)

Since $\sin^2\theta = (1/2)(11 - \cos 2\theta)$, we have,

 $\sin^4 \theta = (1/4)[(3/2) - 2\cos 2\theta + (1/2)\cos 4\theta]$ (7.7) Now, we have,

 $\partial \mu$ =-(1/8)qf πr^2 [(3/2)-2cos 2 θ +(1/2)cos 4 θ])] $\partial \theta$ (7.8) Spin Magnetic Moment **µ** is given by,

$$\mu = -(1/8)qf\pi r^{2} [3/2 - 2\cos 2\theta + (1/2)\cos 4\theta])]\partial\theta (7.9)$$

$$\mu = -(1/8) q f \pi r^2 (-3\pi/2)$$
 (7.10)

 $\mu = (3/32)q\omega\pi r^2$ (7.11)

where, $\omega = 2\pi f$, the angular frequency.

The magnitude of the Spin Magnetic Moment is proportional to the square radius of the particle, Spin frequency, and the charge of the particle as expected. If the surface area of the particle is A_s , then, $A_s=4\pi r^2$ and hence,

$$\mu = (3/128) \alpha \omega A_s$$
 (7.12)

Larger the surface area of the particle, the larger is the Spin Magnetic Moment μ . For an electrically neutral particle, the charge q=0, and hence μ =0. As a result, A particle that is electrically neutral does not have a Spin magnetic Moment. However, this does not apply to an Atom since an Atom is not a particle. Although an Atom is electrically neutral, an Atom is a Composite Unit that consists of many charge particles. As a result, in the case of an Atom, the Spin Magnetic Moment (SMM) is not zero, μ =0.

The direction of the Spin Magnetic Moment is orthogonal to the plane of the Spin. Whether the Spin is Spin-Up or Spin-Down is not a property of the Spin itself since the direction of the Spin is determined by an Observer. Observer dependent Spin-Up and Spin-Down are not states of a particle.

Assume we have an Observer looking down from +z direction and see the Spin as Counter-Clockwise. For that Observer, the Spin Magnetic Moment is in +z direction or Spin-Up for a positive charge. However, for the same Observer looking up from the -z direction, the same particle is spinning in a Clockwise direction. As a result, for the same Observer, the Spin Magnetic Moment (SMM) is Spin-Down for a positive charge. The direction of the Spin is Observer dependent, not a property of a particle. Magnetic field lines are in loops, going out from the top and coming in from the bottom, and hence, the direction of the magnetic field is bipolar. There cannot be magnetic unipoles since magnetic fields are in loops. There

cannot be unipolar Up and Down. There are no magnetic monopoles. Searching for magnetic monopoles is in vain. To claim that a spin is quantized as Up or Down is to contradict the very idea of a bipolar spin. It is we who define the right-hand rule. It is we who define what is positive or negative. Orientation is observer defined. A spinning particle does not have an Up or Down signature. Not every spinning particle has a magnetic field. Spin of a particle cannot be characterized by the magnetic field since a spinning electrically neutral particle has no magnetic field to characterize it. Spin magnetic field cannot be used to characterize all the spins.

Assume we have a Spin-Up particle relative to an Observer. We turn it 180 degrees. Now, what we have is a Spin-Down particle. Properties of the particle did not change. The state of the particle did not change. It is spinning in the same way it used to, yet it is no longer a Spin-Up particle; it is a Spin-Down particle now. Spin-Up or Spin-Down is not a property of a particle. Spin-Up and Spin-Down are not states of a particle. The same particle can be Spin-Up or Spin-Down depending on an observer.

Ask someone in Northern Hemisphere of the Globe, "What is the direction of Spin of the Globe?" Ask the same question when that person is in the Southern Hemisphere of the Globe. You will get opposite answers and both answers are right. You can say Globe is both Spin-Up and Spin-Down state since spin is bi-polar. However, Spin-Up and Spin-Down are not in a superposition since they are non-separable. There are no Monopolar Spins and hence they are non-separable.

For our particle, for a positive charge and a counterclockwise Spin, the Spin Magnetic Moment μ is in the +z direction or Spin-Up. For a negative charge, the same Spin is in –z direction or Spin-Down. The direction of spin depends on our definition of positive charge and our definition of the positive angular frequency:

Charge	Direction	Spin
+q	$+\omega$	Up
+q	-ω	Down
-q	$+\omega$	Down
-q	-ω	Up

The magnitude of the charge is independent of the observer. The magnitude of the angular frequency is independent of the observer. Spin of a particle is independent of observers. Spin is bipolar and the direction of spin of a particle is not a state of a particle. However, whether a particle is Spin-Up or Spin-Down is determined by an Observer. It does not matter which is Up and which is Down; what matters is that they must be opposite to each other. Magnetic field must go in from one side and come out from the other side. The magnitude of $|\mathbf{\mu}|$ is a property of a particle and independent of the observer. Nature cannot quantize observer dependent quantities since Spin-Up or Spin-Down is not determined by nature. Nature cannot quantize what we create in our mind.

Nature has no Ups and Downs.

Lemma:

An atom that is electrically neutral is a Composite unit of many charge particles at varying distances and sizes. As a result, even though an atom is electrically neutral, the Spin Magnetic Moment of an atom is not zero.

Lemma:

In the presence of an external magnetic field, the torque exerted on a neutral Atom is not zero due to the Spin Magnetic Moment (SMM) of an Atom, $\mu \neq 0$. Spin Magnetic Moment is inherent in every Atom since an Atom is an orbiting system.

A. Orbital Magnetic Moment (OMM) of a Charge Particle

Theorem: Orbit Magnetic Moment (OMM)

For a particle of charge g orbiting on a circular orbit of radius r and orbiting frequency f, the Orbit Magnetic Moment (OMM) µ is given by,

$$\mu = (1/2\pi)q\omega A_{o}$$
 (7.1.1

where $\omega\text{=}2\pi\text{f},\,\text{A}_{\text{o}}$ is the area covered by the orbit of radius r, $A_0 = \pi r^2$.

The direction of the Orbit Magnetic Moment is orthogonal to the plane of the orbit.

When a charge particle orbits, it generates an Orbital Magnetic Moment. Consider a particle of charge q on a circular orbit of radius r orbiting at frequency f. Then, the Orbit Magnetic Moment (OMM) μ_{o} is given by,

µ₀=IA₀ (7.1.2)where I is the loop current and $A_{\!\scriptscriptstyle o}$ is the area of the orbit, and I is given by,

I=af (7.1.3)For a circular orbit, $A_0 = \pi r^2$ and hence, the OMM μ_0 is given by,

$$\begin{array}{ll} \mu_{o} = qf(\pi r^{2}) & (7.1.4) \\ \mu_{o} = (1/2)q\omega r^{2} & (7.1.5) \end{array}$$

where, $\omega = 2\pi f$, the angular frequency.

The direction of the Orbit Magnetic Moment μ_o is orthogonal to the orbital plane. Unlike the Spin Magnetic Moment of an electron due to the spin of an electron on its own axis, the Orbit Magnetic Moment of an electron in an Atom is significant.

For an orbiting system of multiple charges, the Orbital Magnetic Moment μ_0 is given by,

 $\mu_{o}=(1/2)q\sum\omega_{i}r_{i}^{2}, \forall i, i=1, 2, ..., n$ (7.1.6)where ω_i is the angular orbit frequency of the i^{th} charge and r_i is the orbit radius of the ith charge, n is the number of orbits.

Lemma: OMM of Multi-Electron Atom

For a multi-electron Atom, the Orbital Magnetic Moment (OMM) μ_0 of the Atom is given by,

 $\mu_{o}=(1/2)e\sum \omega_{i}r_{i}^{2}, \forall i, i=1, 2, ..., n$ (7.1.7)where e is the charge of an electron.

B. Spin Magnetic Moment (SMM) of an Electron Lemma: Spin Magnetic Moment (SMM) of Electron

For an electron of radius r_e, charge e spinning on its own axis at frequency fse, the Spin Magnetic Moment (SMM) μ_{se} is given by,

$$\mu_{se}$$
=(3/32)e ω_{se} mr_e²

where, ω_{se} =2 π f_{se} and e is the charge of an electron. The direction of the Spin Magnetic Moment is orthogonal to the plane of the spin.

Consider an electron of charge e spinning at angular frequency ω_{se} on its own axis while orbiting the nucleus at angular frequency ω_0 . From the previous sections, the contributions to the Magnetic Moment of an Atom by the Orbit Magnetic Moment μ_{oe} of an electron, and by the Spin Magnetic Moment μ_{se} of an electron, are given by,

μ_{oe} =(1/2) $e\omega_o r_o^2$	(7.2.1)
$\mu_{sa} = (3/32) e \omega_{sa} \pi r_{a}^{2}$	(7.2.2)

where, r_e is the radius of the electron mass, r_o is the radius of the electron orbit, ω_{se} is the Spinning angular frequency of the electron, ω_o is the orbiting angular frequency of the electron, e is the charge of the electron.

The radius $r_{\rm e}$ of the electron mass is much smaller than the orbit radius r_o of an electron,

 $r_e << r_o$ (7.2.3)In fact, the radius r_e of an electron is negligible compared to the orbiting radius r_o of an electron. Since the Magnetic Moment is proportional to the square radius of the electron mass,

 $r_{e}^{2} < < < r_{o}^{2}$ As a result, comparatively,

In

$$\mu_{se} << \mu_{oe}$$
 (7.2.5)
In other words, compared to the Orbit Magnetic
Moment of an electron, the Spin Magnetic Moment of
an electron is negligible or zero,

$$\mu_{aa}\approx 0$$
 (7.2.6)

We can also write Spin Magnetic Moment of an electron itself due to the Spin on its own axis as,

$$\mu_{se} = (3/128)e\omega_{se}A_{se}$$
(7.2.7)

where $A_{\mbox{\tiny se}}$ is the surface area of an electron. The Spin Magnetic Moment of an electron is proportional to the surface area of the electron. The surface area of an electron is negligible compared to the area of an electron orbit in an atom, and hence the Spin Magnetic Moment of an electron is negligible compared to the magnetic moment of an electron due to its orbiting in an atom. We can disregard the contribution of Spin Magnetic Moment of an electron to the total Spin Magnetic Moment of an atom. As we will see later, the Orbit Magnetic Moment of an atom is canceled out by another magnetic field, which we call the Merry-Go-Round Magnetic Moment.

Lemma:

Spin Magnetic Moment (SMM) of an electron due to the Spin of the electron on its own axis is negligible since the surface area of the electron is negligible compared to the area of the electron orbit in an atom.

Lemma:

The overall Spin Magnetic Moment of all the electrons in an Atom is zero since the Spin of neighboring electrons are equal and opposite due to the magnetic coupling of neighbors.

Lemma:

Spin Magnetic Moment (SMM) of an electron due to the Spin of the electron on its own axis is negligible compared to the Spin Magnetic Moment of the nucleus on its own axis, which is also the axis of Atomic spin, since the surface area of the nucleus of an atom is much larger than the surface area of an electron and the electrical charge of the nucleus is the negative of the charge of an electron times the atomic number.

Lemma:

Orbital Magnetic Moment (OMM) of an Atom due to the orbiting electrons is canceled out with the Merry-Go-Round Spin Magnetic Moment (SMM) of an Atom since they are equal and opposite.

C. Spin Magnetic Moment (SMM) of Nucleus

Lemma: Spin Magnetic Moment (SMM) of Nucleus

For an Atomic nucleus of radius $r_{\mbox{\scriptsize nu}}$ and Atomic number n spinning on its own axis at frequency f_s, the Spin Magnetic Moment (SMM) μ_{snu} is given by, (7.3.1)

 $\mu_{snu} = (-3/32) ne \omega_s \pi r_{nu}^2$

where, e is the charge of electron, $\omega_s = 2\pi f_s$ The direction of the Spin Magnetic Moment is orthogonal to the plane of the spin, which is also the orbital plane.

It is not just the electrons in an atom that spin on their own axes, the nucleus of an atom, or the central mass of an orbiting system, spins on its own axis. Consider an atom of n electrons. Then, the nucleus has a charge -ne, where e is the charge of an electron. Let us consider that the charge -ne of the nucleus of radius r_{nu} is uniformly distributed on the surface of the nucleus and the nucleus spins on its own axis through the center of the nucleus at spinning angular frequency $\omega_{s}.$ Then, the Spin Magnetic Moment of the nucleus μ_{snu} is given by,

 μ_{snu} =-(3/32)ne $\omega_{s}\pi r_{nu}^{2}$ (7.3.2)The Spin Magnetic Moment μ_{snu} is proportional to the square of the radius of the nucleus. Since the radius of the nucleus is not as small as the radius of an electron, the Spin Magnetic Moment μ_{snu} due to the Spin of the nucleus is significant. We can also write µ_{snu}, as,

$$\mu_{snu} = -(3/128) ne\omega_s A_{nu} \qquad (7.3.3)$$
 where A_{nu} is the surface area of the Nucleus.

It is clear, as in the case of an electron, the radius of the Nucleus of an Atom is negligible compared to the orbit radius of an electron orbit, and hence the Spin Magnetic Moment of an Atom due to the Spin of the Nucleus itself on its own axis may appear as negligible compared to the Orbital Magnetic Moment due to orbiting electrons. However, as we will see later, Orbital Magnetic Moment is annihilated by the Merry-Go-Round Spin Magnetic Moment since they are equal and opposite. As a result, the Spin Magnetic Moment of the nucleus μ_{snu} is going to be the only

significant Spin Magnetic Moment left in an Atom since the Spin Magnetic Moments of electrons are negligible compared to the Spin Magnetic Moment of the nucleus of an atom. The Spin Magnetic Moment of an atom is predominantly a result of the spin of the nucleus.

When the nucleus spins, it is the whole atom that taking all the bound electrons on a spins Merry-Go-Round ride. This Merry-Go-Round motion of electrons in an atom due to the Spin of the nucleus generates a Spin Magnetic Moment that is more significant than the Spin Magnetic Moment due to the Spin of the nucleus itself, and the Spin Magnetic Moment due to the Spin of all the bound electrons themselves on their own axes in an atom. However, Merry-Go-Round Spin Magnetic this Moment disappears in the presence of the Orbit Magnetic Moment due to the orbiting electrons since they are equal and opposite, leaving behind the Spin magnetic Moment due to the spin of the nucleus as the Spin Magnetic Moment of the Atom.

Lemma:

The Spin Magnetic Moment of an atom is predominantly a result of the spin of the nucleus of the atom.

D. Merry-Go-Round Spin Magnetic Moment (SMM) of an Atom

Theorem: Merry-Go-Round SMM of an Atom

For an Atom of Atomic number n spinning on its axis at spinning frequency f_s, own the Merry-Go-Round Spin Magnetic Moment (SMM) µmar is given by,

 $\mu_{mgr} = (1/2)e\omega_{s}r_{rms}^{2}$

where, $r_{rms} = [(1/n)\sum_{i} r_{i}^{2}]^{1/2}, \forall i, i=1, 2, ..., n$

e is the charge of an electron, r_i is the orbit radius of the ith electron, $\omega_s = 2\pi f_s$

The direction of the Spin Magnetic Moment is orthogonal to the orbital plane.

Orbiting systems such as atoms have net Orbit angular momentum. The Spin of an orbiting system is a result of this net Orbit angular momentum so that the total angular momentum of an orbiting system is a null vector. In the case of an atom, the spin of an atom is the spin of the nucleus. Even though an atom itself is neutral, the constituent elements of an atom are electrically charged. The spin of charged particles in an atom, in an otherwise neutral atom, generates a Spin magnetic field of an atom.

As we have already seen, although the Spin Magnetic Moment due to the Spin of electrons is negligible, the Spin Magnetic Moment due to the Spin of the nucleus is significant. However, the Spin Magnetic Moment due to the Spin of the nucleus is negligible compared to the Orbit Magnetic Moment due to orbiting of the electrons. We now want to see the effect of the spin of the nucleus on the bound electrons. What happens to the bound electrons when a nucleus spins? When a nucleus spins, it spins with

all the bound electrons as a single unit, as an atom. The effect of the nucleus Spin on bound electrons generates Spin Magnetic Moment (SMM) that contributes to the total Spin Magnetic Moment of an atom.

Spin of the nucleus of an Atom is the same as the Spin of an Atom. When a nucleus spins, it takes all the bound electrons on a Merry-Go-Round ride creating current loops that result in Spin Magnetic Moment of an atom. When a nucleus spins, it is the whole atom that spins. When a nucleus spins, it generates circular current loops for each bound electron of the atom that contributes to the Spin Magnetic Moment of the atom. This Merry-Go-Round Spin Magnetic Moment is also orthogonal to the plane of spin.

Further, the Orbit Magnetic Moment of an Atom aligns with the Merry-Go-Round Magnetic Moment since any misalignment results in generating an alignment torque. As a result, all the Spins take place on the Orbital plane. The torque due to any misalignment will make sure that all the Spins are taking place on the Orbital plane so that the Spin Magnetic Moments are all aligned orthogonal to the Orbital Plane, which is also the plane of all the Spins. The orbiting system of an Atom is planar.

Lemma:

An atom is a shape of a disk of the thickness of the nucleus just like the Solar System. An atom is not a sphere. An Atom is planar.

If the Merry-Go-Round radius of the current loop of the ith electron is r_i, then, the Merry-Go-Round Spin Magnetic Moment μ_i from the ith electron is given by,

µ _i =(ef	$_{\rm s})\pi r_{\rm i}^2$					(7	,, 4.1)
μ _i =(1/	2)eω _s	r ²				(7.	4.2)
_{sn} =2πf _s ,	and	f_s	is	the	frequency	of	the

where, ω Nucleus Spin on an axis through the center of the nucleus, which is orthogonal to the plane of Spin.

Unlike the spin of electrons, where they spin on their own axes, the Merry-Go-Round Spin Magnetic Moments of all the electrons have the same axis, the axis of the spin of the nucleus. All the electrons spin at the same frequency that is the spinning frequency of the nucleus fs. Merry-Go-Round Magnetic Moments of all the electrons have the same direction; they are all either positive or else they are all negative relative to an observer. Therefore, we can simply add the Merry-Go-Round Magnetic Moment of each electron to obtain the total Merry-Go-Round Magnetic Moment of an atom.

µ _{mgr} =∑µ _i , ∀i, i=1, 2, …, n	(7.4.3)
$\mu_{mgr} = (1/2)e\omega_{s}\sum r_{i}^{2}, \forall i, i=1, 2,,$	(7.4.4)

where, μ_{mgr} is the Merry-Go-Round Spin Magnetic Moment of an atom due to the Spin of the nucleus or the atom at angular frequency $\omega_{s},$ and r_{i} is the Merry-Go-Round radius of the ith electron, n is the number of electrons in the atom.

The root-mean-square of the radii of all electrons r_{ms} is given by,

 $r_{rms} = [(1/n)\sum r_i^2]^{1/2}, \forall i, i=1, 2, ..., n$ (7.4.5) Now, we have,

(7.4.6)

 $\mu_{mqr} = (1/2) ne \omega_s r_{rms}^2$ Since the plane of Spin is the same as the plane of Orbit, the Spin radius of an electron is also the same as the orbital radius. The Merry-Go-Round Spin Magnetic Moment of an Atom is proportional to the root-mean-square of the orbit radii of all the electrons, charge of an electron, number of electrons in an atom, and the Spin frequency of an atom; intuitively, this is expected.

Since the Orbital Magnetic Moment and the Merry-Go-Round Spin Magnetic Moment of all the electrons align themselves, the Merry-Go-Round Spin radius of an electron is the same as the orbital radius of the electron. So, the atomic structure is planar, not spherical. All electrons orbit, spin, and take a Merry-Go-Round ride on the same plane; the spin of the nucleus is also on the same plane. Any misalignment will be brought back to alignment immediately by the torque generated by the misalignment of the Spin Magnetic Moment.

Lemma:

Merry-Go-Round Spin Magnetic Moment cancels out with the Orbit Magnetic Moment (OMM) since they are equal and opposite.

E. Orientation of Electrons in an Atom

If there is no mechanism in an Atom to cancel out the Orbital Magnetic Field generated by orbiting electrons, this Orbital Magnetic Field acts as an external magnetic field for the electrons in an Atom forcing the Spin Magnetic Moment of each electron to orient itself with the Orbital Magnetic Moment robbing their freedom. As we are going to see, it is not going to happen since the Orbital Magnetic Moment is exactly equal and opposite to the Merry-Go-Round Spin Magnetic Moment. Orbit Magnetic Moment and the Merry-Go-Round Spin Magnetic Moment in an Atom cancel each other out, leaving electrons free to orient themselves making the mutual magnetic coupling between electrons in an Atom possible. In the absence of both Orbital Magnetic Moment and the Merry-Go-Round Spin Magnetic Moment as external magnetic fields for the electrons in an Atom, the orientation of electrons in an Atom is such, no two neighboring electrons have the same Spin Magnetic Moment polarities since opposite polarities attract and similar polarities repel. The orientation of the spin of one electron will be against the orientation of the spin of another electron in an Atom. As a result, the net Spin Magnetic Moment due to the spin of all the electrons on their own axes will be approximately zero. Spin of electrons on their own axes makes no contribution to the Spin Magnetic Moment of an Atom. This would not have been possible if the Orbit Magnetic Moment and the Merry-Go-Round Magnetic Moments had not been canceled out.

The Orbital Magnetic Field generated by orbiting electrons and the Merry-Go-Round Magnetic Field cancels out since they are equal and opposite. There is no external field that forces spin magnetic fields of electrons to orient within an atom. So, spins of the electrons are free to magnetically couple with each other. If there had been an orbital magnetic field, all the electrons would have been forced to align with it. The electron Orbit Magnetic Moment and the Merry-Go-Round Spin Magnetic Moment in an Atom cancel out, leaving behind only the Spin Magnetic Moment of electrons and the Spin Magnetic Moment of the nucleus. Electrons are free to orient themselves based on the magnetic coupling between electron spins. Due to the spin Magnetic Moment of electrons, the neighboring electrons are magnetically coupled. The effect of the spin magnetic field of the nucleus on the spin magnetic field of the electrons is negligible since the radius of the nucleus is negligible compared to the radius of orbits. No two neighboring electrons have the same direction of Spin Magnetic Moment naturally. There is no need for Pauli's exclusion principle.

"Orientations of electrons are not affected by the Spin Magnetic Moment due to the spin of the nucleus itself since the radius of nucleus is negligible compared to the radius of the electron orbits where electrons are orbiting. Since the Spin Magnetic Moments of neighboring electrons are of opposite polarities and each Atom consists of an even number of electrons, the net Spin Magnetic Moment of an Atom due to the spin of electrons on their own axes is null. As a result, the only contribution to the Atomic Spin Magnetic Moment mainly comes from the Spin Magnetic Moment due to the spin of the nucleus itself on its own axis. We will consider Atomic Spin Magnetic Momentum in detail later. In the meantime, it is important to notice that there is a magnetic coupling of neighboring Atoms due to this Atomic Spin Magnetic Moment. It is this magnetic coupling of neighboring Atoms that is responsible for the splitting of a beam of Atoms into two beams of opposite orientations in the Stern-Gerlach Experiment, not a mysterious spatial Spin Quantization."

In the absence of both Orbital Magnetic Moment and the Merry-Go-Round Spin Magnetic Moment as external magnetic fields for the electrons in an Atom, the orientation of electrons in an Atom is such, no two neighboring electrons have the same Spin Magnetic Moment polarities since opposite polarities attract and similar polarities repel. The orientation of one electron will be against the orientation of the other electron in an Atom. As a result, the net Spin Magnetic Moment due to the spin of all the electrons on their own axes will be approximately zero for an atom with an even number of electrons leaving behind the Spin Magnetic Moment of the nucleus as the sole Spin Magnetic Moment of an atom. Spin of electrons on their own axes makes no contribution to the Spin Magnetic Moment of an Atom. This would not have been possible if the Orbit Magnetic Moment and the Merry-Go-Round Magnetic Moments had not been canceled out.

Spin Magnetic Moments of neighboring electrons

are of opposite polarities. Since each atom consists of an even number of electrons, the net Spin Magnetic Moment of an Atom due to the spin of electrons on their own axes is null. As a result, the only contribution to the Atomic Spin Magnetic Moment mainly comes from the Spin Magnetic Moment due to the spin of the nucleus itself on its own axis. We will consider Atomic Spin Magnetic Momentum in detail later. In the meantime, it is important to notice that there is a magnetic coupling of neighboring Atoms due to this Atomic Spin Magnetic Moment. The direction of Spin Magnetic Moment of neighboring atoms are against each other, (Up, Down, Up, Down, ...). It is this Spin Magnetic Moment coupling of neighboring silver Atoms against each other that led to the splitting of a beam of Atoms into two beams of opposite orientations in the Stern-Gerlach Experiment, not a mysterious spatial Spin Quantization. There are no Spin-Up and Spin-Down quanta. Bipolar spin cannot have unipolar Up and Down states. There are no magnetic monopoles. There cannot be Spin-Up and Spin-Down Quanta since there are no Spin Monopolies.

Lemma:

Spin of electrons on their own axes makes no contribution to the Spin Magnetic Moment of an Atom due to the magnetic coupling of the Spin Magnetic Moment of the neighboring electrons.

Lemma:

The Merry-Go-Round Spin Magnetic Moment of an Atom is proportional to the root-mean-square (rms) of the orbit radii of all the electrons.

Lemma:

Atomic Structure is planar, NOT Spherical. Atoms are nucleus-thick disks with the radius equal to the outermost orbit.

VIII. GENESIS OF ATOMIC SPIN

Property:

Spin is a property of an orbiting system. A particle has no Spin unless it is an ejected particle from an orbiting system.

Lemma:

Since the orbital angular momentum of any Orbiting System is non-zero, a spin with an equal and opposite spin angular momentum is an intrinsic characteristic of any Orbiting System.

Lemma:

Spin is not a fundamental property of a particle. Spin is an acquired property of a particle. A particle that had never been in an orbiting system has no spin.

Lemma:

Although the net Angular Momentum of an atomic orbiting system is zero, the Spin Magnetic Moment of an electrically neutral atom is not zero since an orbiting system of an atom consists of the orbiting and spinning of charge particles, positively charged nucleus and negatively charged electrons.

Theorem: Spin Frequency of an Atom

For an Atom of atomic number n spinning on its own axis, the angular spinning frequency ω_{s} is given by,

 ω_{s} =- [$\sum \omega_{i}r_{i}^{2}$]/[nr_{rms}²], $\forall i, i=1, 2, ..., n$

where, $r_{rms} = [(1/n)\sum r_i^2]^{1/2}$, $\forall i, i=1, 2, ..., n$ r_i is the orbit radius of the ith electron, ω_i is the angular orbiting frequency of the ith electron.

We know that every Orbiting System, irrespective of its size, spins on an axis through the center of mass perpendicular to the plane of Orbits. Orbiting Systems such as atoms spin on an axis through the center of the nucleus. The question is, "what generates the spin?" What causes an orbiting system to spin?

Any orbiting system has an angular momentum orthogonal to the orbiting plane. It is this angular momentum that generates a spin so that the net angular momentum of the orbiting system is zero. As a result, the Spin angular momentum is always equal and opposite to the angular momentum of an orbiting system.

Spin is an inherent property of any orbiting system. The Spin angular momentum of an orbiting system is always equal and opposite to the total Orbit angular momentum of the Orbiting objects. Since the orbital angular momentum of any orbiting system is time-invariant or a constant, the Spin angular momentum of an orbiting system is also time-invariant or a constant.

Atoms are orbiting systems. Electrons on circular orbit cannot radiate since there is no displacement of electrons along the direction of the centrifugal force. There is no acceleration without displacement of an object along the force. Force is not acceleration. Gravity is not acceleration. A falling apple has acceleration. An apple on a tree has no acceleration. Einstein's equality principle is false. Stationary cabin on a gravitational object has no acceleration. Electrons on circular orbits in an Atom do not radiate. An orbiting electron in an Atom cannot spiral down.

If the position and momentum of an electron are uncertain as it claims in Quantum Mechanic, that electron is subjected to radiation loss. Uncertainty in position and speed lead to radiation. Position and momentum cannot be uncertain without the change of position and momentum and as a result uncertainty of an electron in an Atom breeds radiation. The position and momentum of an electron in an Atom cannot be uncertain.

An orbiting electron on a circular orbit has no displacement along the centrifugal force and has no radiation. It is Neil Bohr's atomic model based on the uncertainty of the position and momentum of electrons in an atom that leads to the collapse of an atom due to radiation loss, not the orbiting electron model of the atom.

An atom spins on an axis through the center of the nucleus. Spin of an atom is synonymous with the spin

of the nucleus of an atom. All the bound electrons in an atom orbit the nucleus on the orbiting plane. Since the angular momentums of all the electrons are orthogonal to the planes of orbit, all the orbits are on a plane orthogonal to the direction of the angular momentum; in other word, orbits are planar.

Lemma:

The motion is planar in an orbiting system. An Atomic orbiting system is planar. All the electron orbits in an Atom are planar. Any orbiting system is planar.

Let us consider the atomic model where the electrons are orbiting the nucleus on circular orbits. Electrons are traveling at constant speeds on circular paths; the momentums of electrons remain constant on their orbits. If the ith electron of the atom is orbiting at orbiting frequency f_i on a circular orbit of radius r_i , then, the angular momentum ℓ_i is given by,

 $\ell_i = m\omega_i r_i^2$, $\forall i, i=1, 2, ..., n$ (8.1) where, $\omega_i = 2\pi f_i$, m is the mass of an electron, n is the number of electrons in the atom.

Although the angular momentum of an electron in a multi-electron atom is not conserved [6], the total angular momentum of all the electrons in an orbiting system is conserved. The exact relationship for the total angular momentum of an orbiting system that takes the mutual interactions into account is given elsewhere in [6]. Here, we disregard the mutual interactions of the orbiting objects since the mass of an electron is negligible compared to the orbiting center mass, the nucleus. The approximate total angular momentum ℓ_0 of an orbiting system is given by,

$$V_0 = \sum_{i} V_i, \forall i, i=1, 2, ..., n$$
 (8.2)

 $\ell_0 = m \sum \omega_i r_i^2$, $\forall i, i=1, 2, ..., n$ (8.3) The total angular momentum of an atom is conserved. The total angular momentum ℓ_0 is time invariant and $\ell_0 \neq 0$. If $\ell_0 = 0$, then, there will not be an Atomic Spin. It is the non-zero Orbit angular momentum of an Atom that generates the Spin angular momentum so that the net angular momentum of an atom is zero,

$$\ell_0 + \ell_s = 0$$
 (8.4)
 $\ell_0 = -\ell_s$ (8.5)

where $l_0 = |l_0|$ and $l_s = |l_s|$.

The sum of Orbit angular momentum of an atom and the Spin angular momentum of an atom is zero. Since the orbital angular momentum of any Orbiting System is non-zero, a spin with an equal and opposite spin angular momentum is an intrinsic characteristic of any Orbiting System.

If an atom Spins at angular frequency ω_s , it will take all the electrons on a Merry-Go-Round ride generating Spin Magnetic Moment ℓ_s , where,

 $\ell_s = m\omega_s \sum r_i^2$, $\forall I$, i=1, 2, ..., n (8.6) Since the orbit and Spin plane are the same, Spin radii r_i , i=1, 2, ..., n, are the same as the orbit radii r_i , i=1, 2, ..., n. Notice the difference between eqn. (8.3) and (8.6). In the case of Orbit angular momentum of electrons, each electron has its own orbiting frequency, whereas Spin frequency is the same for all the electrons since it is the Spin frequency of the nucleus.

Now, substituting for l_{\circ} and l_{s} in Eqn. (8.5) from Eqns. (8.3) and (8.6), we have,

$$\begin{split} &m\omega_{s}\sum r_{i}^{2}=m\sum \omega_{i}r_{i}^{2}, \ \forall i, i=1, 2, ..., n \\ &\omega_{s}=[\sum \omega_{i}r_{i}^{2}]/\sum r_{i}^{2}, \ \forall i, i=1, 2, ..., n \end{split} \tag{8.7}$$

An atom of n electrons spin at the angular frequency ω_s . Since the orbiting angular frequency ω_i of the ith electron of an atom is a constant and the orbit radius r_i of ith atom is a constant for all the electrons i=1, 2, ..., n, the Spin angular frequency ω_s of an atom is a constant. However, the Spin frequency of an Atom changes with the loss of electrons by an Atom. An ejected electron carries its spin with it. The spin of a free electron is a clue that the electron had been a part of an orbiting system before. A particle that had never been in an orbiting system cannot have a spin. Spin is not a fundamental property of a particle.

The Spin Magnetic Moment (SMM) μ_s is given by,

 $\mu_{\rm s}$ =-(e/2m)/_o (8.10)

where, ℓ_0 is the Orbit angular momentum of the atom. Since ℓ_0 is a constant, the Spin Magnetic Moment of an atom is a constant. In other words,

$$μ_s=\pm β$$
(8.11)
where, β is a constant given by,
$$β=(a/2m) (
(8.12))$$

 β =(e/2m)/_o (8.12) The magnitude of a spin of an atom is a constant μ_s = β , where β =(e/2m)/_o. It is not quantized. Relative to an observer, μ_s = $\pm\beta$. It is only relative to an observer that the spin can be either μ_s = β (Up) or μ_s =- β (Down). The Up (+) or Down (-) that only exist relative to an observer cannot be a property of an Atom. There is no Spin-Up or Spin-down without an observer and hence there cannot be Spin-Up or Spin-Down Quanta in nature.

Spin magnetic field is a vector. Vectors cannot come in quanta. Spin Magnetic Moment is Bipolar. A Bipolar Spin cannot come in Up and Down quanta since Up has no existence without Down and vice versa.

Any Orbiting System maintains zero net angular momentum due to the Spin of the Orbiting System. An Atom has zero net angular momentum due to the spin of the Atom on an axis through the center of the Atom. Although electrically neutral orbiting systems such as Atoms have zero net angular momentum, they have non-zero Spin Magnetic Moment making electrically neutral atoms magnetic. It is this Atomic Spin Magnetic Moment that determines the behavior of Atoms in an external magnetic field as in the case of the behavior of a Beam of Silver Atoms in a Stern-Gerlach Magnetic field.

The direction of a spin is determined by the external magnetic field where the particle is in. Spin Magnetic Moments of two atoms have the same magnitude but opposite directions due to magnetic coupling of spins; if one atom has spin μ_s = β , then the other neighboring atom has spin μ_s =- β . The spin of atoms in a beam of atoms has spins of alternate directions (β ,- β , β ,- β , β ,- β ,...). This is the reason why a

beam of neutral silver atoms were separated into two beams of $(\beta,\beta,\beta,...)$ and $(-\beta,-\beta,-\beta,...)$ of equal number of Atoms by a Stern-Gerlach device. There is no probability involved in the Stern-Gerlach Device.

The direction of the Spin Magnetic Moment of an Atom is orthogonal to the plane of Spin, which is also the Orbital plane of the Atom. The direction is either positive or negative relative to an observer. It is only relative to an observer the direction can be defined. The magnitude of Spin Magnetic Moment of an Atom is a constant for a given Atomic Number. As a result, atoms in an atomic population are magnetically coupled; they are not free; their orientations are not random. The neighboring Atoms in a beam of Atoms are magnetically coupled so that their Spin Magnetic Moments are of Opposite directions.

It is only relative to an observer that the Spin can be Up or Down. It is only relative to an observer that the spin can be either $\mu_s = \beta$ or $\mu_s = -\beta$. The direction of spin is not probabilistic. Spin is not probabilistic. Probability has nothing to do with the Stern-Gerlach experiment. Bipolar spin cannot have unipolar Up and Down quanta. Up and Down of a Spin are non-separable. Non-separable entities cannot be in a Superposition. Up and Down cannot be in a superposition since Up has no existence without Down and vice versa. The Stern-Gerlach experiment had been misinterpreted in physics. It is the misinterpretation of the Stern-Gerlach experiment that has driven physics into voodoo physics. There are no Spin Quanta.

Lemma:

Spin is an inherent property of an orbiting system. An orbiting system spins in order to counteract the angular momentum of the orbiting objects so that the total angular momentum of the orbiting system is zero. The spin angular momentum is equal and opposite to the total angular momentum of the orbiting objects.

Lemma: Magnetic Neutral Atoms

Although electrically neutral spinning orbiting systems such as Atoms have zero net angular momentum, they have non-zero Spin Magnetic Moment (SMM) making electrically neutral Atoms magnetic.

Property:

Spin is an intrinsic property of any Orbiting System, whether it is planetary or Atomic. Even though atoms are electrically neutral, the spin of any Atom generates a Spin Magnetic Moment that turns an Atom into a magnet since an atom consists of orbiting electrons or charge particles. As a result, Atoms behave as magnets. Although silver Atoms are electrically neutral, silver Atoms have a Spin Magnetic Moment and the neighboring Atoms in a beam of silver Atoms have opposite Spin Orientations.

IX. SPIN MAGNETIC MOMENT OF ATOM

Lemma:

Spin is a property of an orbiting system. An Atom

is an orbiting system. An Atom spins. Even though an Atom is electrically neutral, Atomic Spin generates a Spin Magnetic Moment since an Atomic orbiting system consists of charged particles orbiting the charged nucleus. Larger the Atomic Number, larger the Spin Magnetic Moment of the Atom.

Lemma:

The overall Spin Magnetic Moment of an Atom is due to the Spin of the Nucleus of the Atom.

Theorem: Atomic Nullification

The vector sum of Merry-Go-Round Spin Magnetic field and the Orbit Magnetic Moment of an Atom is a null vector since they are equal and opposite to each other.

$\mu_{mgr}+\mu_{o}=0.$

where $\mu_{\mbox{\tiny mgr}}$ is the Merry-Go-Round Spin Magnetic Moment and μ_{o} is the Orbit Magnetic Moment of the Atom.

Lemma:

The Spin Magnetic Moment of Atom μ_s is the same as the Spin Magnetic Moment of the Nucleus and it is given by,

 $\mu_{s} = (3/128)q\omega_{s}A_{nu}$

where, g is the total electric charge of the nucleus,

q=-ne, e is the charge of an electron, n is the number of electrons in the atom, A_{nu} is the surface area of the nucleus, and ω_s is the angular frequency of the Spin of the Atom given by,

$$\begin{split} & \omega_{s} = [\sum \omega_{i} r_{i}^{2}] / \sum r_{i}^{2}, \ \forall i, \ i = 1, \ 2, \ ..., \ n \\ & r_{rms} = [(1/n) \sum r_{i}^{2}]^{1/2}, \ \forall i, \ i = 1, \ 2, \ ..., \ n \end{split}$$

 r_i is the orbit radius of the i^{th} electron, f_i is the orbiting frequency of the ith electron, f_s is the spin frequency of the Atom, $\omega_i = 2\pi f_i$, $\omega_s = 2\pi f_s$.

Let us consider an atom of n electrons or atomic number n. Each electron spins on its own axis generating Spin Magnetic Moment orthogonal to the plane of Spin. The orientations of neighboring electrons are one against the other. No two neighboring electrons have the same orientation of the Spin Magnetic Moment. One half of electrons align positively while the other half align negatively due to the attraction of the opposite and the repulsion of the alike. As a result, the net Spin Magnetic Moment of an Atom due to the Spin of electrons on their own axis is zero

The nucleus also spins on its own axis. In addition, the Spin of the nucleus also takes all the bounded electrons Merry-Go-Round on а Spin. The Merry-Go-Round Spin of the bound electrons also generates a magnetic moment, which is also orthogonal to the orbiting plane. Therefore, all the Spin Magnetic Moments are additive. The Spin Magnetic Moment μ_s of a neutral atom is given by,

(9.1) $\mu_{s}=[\sum \mu_{se}(i)]+\mu_{snu}+\mu_{mgr}+\mu_{o}, \forall i, i=1, 2, ..., n$ where, $\mu_{se}(i)$ is the Spin Magnetic Moment of i^{th} electron, $\mu_{\mbox{\tiny snu}}$ is the Spin Magnetic Moment of nucleus, μ_{mgr} is the Merry-Go-Round Spin Magnetic Moment of the atom, μ_o is the Orbit Magnetic Moment of the

Atom, and n is the number of electrons in the atom. We have already seen,

μ₀=(1/2)e∑ω _i r _i ², ∀i, i=1, 2, …, n	(9.2)
$\mu_{so}(i) = \pm (3/32) e \omega_{so} \pi r_o^2(i)$	(9.3)

- $\mu_{se}(i) = \pm (3/32) e \omega_{se} m_{e} (i)$ μ_{snu} =-(3/32)en $\omega_{s}\pi r_{nu}$ (9.4)
- $\mu_{mgr}=(1/2)en\omega_{s}\pi r_{rms}^{2}$ (9.5) $r_{rms} = [(1/n)\sum_{i=1}^{n} r_{i}^{2}]^{1/2}, \forall i, i=1, 2, ..., n$
 - (9.6)

where, r_i is the orbit radius of ith electron, r_e is the radius of electron mass, and r_{nu} is the radius of nucleus, ω_{se} is the Spin angular frequency of an electron, ω_s is the Spin angular frequency of the nucleus or the Spin angular frequency of the atom, n is the number of electrons in the atom.

We have already considered the Spin Magnetic Moment μ_{se} of an electron due to its Spin on its own axis through the center of the electron. Each electron has its own axis of Spin, and hence the Spin Magnetic Moment can be perpendicular to the plane of Spin in one direction (positive, Spin-Up ↗) or direct opposite to that direction (negative, Spin-Down ∠); Up or Down is relative and can only exists relative to the plane of Spin with respect to an observer. Up and Down are not states of an electron. Bipolar spins cannot have unipolar Up and Down states. Spin of a particle is not a fundamental property of a particle; it is an acquired property.

Any neighboring electrons pair will have opposite polarities aligned (\mathcal{N} or \mathcal{I}) due to the attraction of opposite and the repulsion of the alike; just like compasses or free-to-orient magnets. As a result, the Spin Magnetic Moments of electrons in an atom cancel out, and hence the Spin Magnetic Moment of an atom due to the Spin of electrons is a null vector,

∑µ_{se}(i)≈0, ∀i, i=1, 2, …, n (9.7)Further, we know that the radius of electron r_e is negligible compared to the radius of the nucleus r_{nu} of an Atom.

$$r_{e} << r_{nu}$$
 (9.8)

However, the radius of nucleus is negligible compared to the orbital radius.

$$r_{nu} << r_{rms}$$
(9.9)

where, $r_{\mbox{\scriptsize rms}}$ is the root-mean-square radius of the electron orbits of the Atom.

We know that the Orbital Magnetic Moment and the Merry-Go-Round Spin Magnetic Moment are both orthogonal to the plane of orbit since the plane of orbit coincides with the plane of Atomic Spin. As a result, the vector sum of the Orbital Magnetic Moment and the Merry-Go-Round Spin Magnetic Moment is given bv.

$$\mu_{mgr} + \mu_o = (-1/2) en \omega_s r_{rms}^2 + (1/2) e \sum \omega_i r_i^2, \forall i$$
 (9.10)
where,

 r_{rms} =[(1/n) $\sum r_i^2$]^{1/2}, $\forall i, i=1, 2, ..., n$ (9.11)Further, from equation (8.7), we have already seen that the spin frequency of an Atom ω_s is given by,

 $\omega_{s} = [\sum \omega_{i} r_{i}^{2}] / \sum r_{i}^{2}, \forall i, i=1, 2, ..., n$ (9.12)Substituting for ω_s in equation (9.10), we have,

(9.13) $\mu_{mgr}+\mu_{o}=0$ The vector sum of the Orbit Magnetic Moment (OMM) due to the electron orbits and the Merry-Go-Round Spin Magnetic Moment (SMM) of electrons due to the Spin of the Atom is a null vector.

Now from equation (9.1), the net Spin Magnetic Moment (SMM) of an Atom, μ_{s} is simply the Spin Magnetic Moment due to the Spin of the nucleus of the Atom,

> (9.14) $\mu_s = \mu_{snu}$ (9.15)

 μ_{snu} =-(3/32)en $\omega_{s}\pi r_{nu}^{2}$ where r_{nu} is the radius of the nucleus.

If the surface area of the nucleus is A_{nu}, then we have, μ_{snu} =-(3/128)en $\omega_s A_{nu}$ (9.16)

where, $A_{nu}=4\pi r_{nu}^{2}$.

The Spin Magnetic Moment μ_s of an Atom of Atomic number n is given by.

 $\mu_{s} = -(3/128) en \omega_{s} A_{nu}$ (9.17)The direction of the Spin Magnetic Moment is orthogonal to the plane of Spin, which is also the same as the orbital plane.

A spinning atom has its Spin Magnetic Moment μ_s in the positive (Spin-Up \nearrow) or negative (Spin-Down \checkmark) direction of the Spinning Axis of the nucleus or the Atom relative to the plane of Spin with respect to an observer. Up and Down do not mean what we consider to be Up \uparrow and Down \downarrow ; it could be at any orientation, Up \nearrow and Down \checkmark . In the case of an Atom, the direction of the Spin coincides with the direction of the Spin Magnetic Moment, and hence, the direction of the Spin Magnetic Moment is also the orientation of the atom since there is no obstacle to the free motion of electrons. As a result, there is no tilt between the atomic Spin and the Spin Magnetic Moment of the Atom. However, in the case of a composite object such as earth, paths that charge particles can take in the Spin are restricted, not free, and as a result, the Spin Axis does not coincide with the Spin Magnetic Moment. In the case of free moving electrons in an atom they do coincide.

Each Atom has its own independent Spin Axis. The orientation may be independent from atom to atom when they are at distance or when there is no social correlation between them. However, orientations of nearby atoms are perfectly socially correlated negatively due to the attraction of opposite polarities and the repulsion of the same polarities. In other words, nearby atoms are magnetically coupled negatively, their spin magnetic fields are against each other.

A. Atom in an External Magnetic Field

Spin-Up does not mean vertically upward. Spin-Down does not mean vertically downward. Up can be in any direction while Down is the opposite of Up. There cannot be an Up without a Down. Up and Down are relative and exist only relative to an observer. Spin-Up for one observer can be Spin-Down for another observer. Spin-Up for one observer when the observer is at one location can be Spin-Down for the same observer at a different location. Observer dependent Up and Down are not fundamental properties of a particle. Bipolar spin cannot have unipolar Spin-Up and Spin-Down. Spin-Up and Spin-Down exist in the same particle and they are observer perspectives. If you observe a particle to be Spin-Up at one location, the same particle at a

different location can be Spin-Down relative to you. Up and Down are non-separable and hence Up and Down cannot be in a superposition.

If we denote Spin-Up as \nearrow and Spin-Down as \checkmark , then, two nearby particles can both be in Spin Up 77 position only in the presence of an external magnetic field in the same direction \nearrow . If the external magnetic field is in vertical ↑ direction, then both Atoms will be in *t* orientation. As soon as the external magnetic field is taken away or switched off, they re-orient themselves to be in its natural (Up-Down) \nearrow or \checkmark ? (Down-Up) orientation due to magnetic coupling, the attraction of opposite and the repulsion of the alike. There is no exclusion principle here. No Pauli Spin Matrices at work here. What is at work preventing two electrons from having the same orientation of Spin Magnetic Moment is the magnetic coupling, the attraction of opposite polarities and the repulsion of the same polarities.

Two nearby atoms naturally orient to be at position \mathcal{N} or $\mathcal{I}\mathcal{P}$. It is only in the presence of an external magnetic field **B** \uparrow , two atoms can have the same orientation $\uparrow\uparrow$ toward the direction of **B**. If the **B** is in the direction $\$, then the two atoms will be in the orientation <u>S</u>. When the External Magnetic Field is switched off, the atoms will be under their magnetic coupling orientation of \mathcal{N} or $\mathcal{I}\mathcal{P}$; the inclination direction can be of any angle determined by the population of atoms and the environmental magnetic field they are in. If two atoms are in the orientation $\checkmark \nearrow$, then, when they enter an external magnetic field $\mathbf{B} \nearrow$ of same orientation, there will be no torgue and hence they remain in the same $\checkmark 7$ orientation in the Magnetic Field **B** \nearrow ; in this case the orientation remains the same even when the magnetic field is turned off since it is their natural orientation, not a forced orientation.

The orientation of the spin magnetic field is not a fundamental property of a spin. The orientation of a spin magnetic field is determined by the external magnetic field or the spin magnetic fields of the neighboring particles. You can set up the orientation of an Atom using an external magnetic field. The orientation of an Atom in an external magnetic field will always be towards the external magnetic field unless the Atom is already against the external magnetic field, in which case the orientation of the Atom remains unaltered in the external magnetic field. However, it will remain at that set orientation towards the external magnetic field as long as the external magnetic field is present only. As soon as the external magnetic field is taken away or switched off, the orientation of the Atom no longer is in that set orientation; it will be at an orientation determined by the magnetic field of the neighboring Atoms and the environment.

By placing an Atom in an external magnetic field, what you are doing is changing the orientation of the spin of the Atom to be in the direction of the external magnetic field; information of the original orientation of the spin of the Atom is completely erased. An Atom does not have a Spin orientation as a state or Spin
Orientation memory. If you place an atom in a vertical (z direction) external magnetic field that is not directly opposite of that of the orientation of the Atom, then orientation of the Atom will be in z direction as long as it is in the external magnetic field. If you then pass that Atom through a horizontal magnetic field (x direction), the orientation of the Atom will now be horizontal, in the x direction; now, the Atom does not contain any information about its previous z direction orientation or the original orientation, where it had been.

You cannot use an external magnetic field to orient the spin of a particle in x direction, y direction, or in z direction permanently. The permanent setting of the direction of the spin using an external magnetic field is not possible. This will be very important in understanding the result of the Stern-Gerlach Experiment. Stern-Gerlach device is neither a spin measuring device nor a permanent spin setting device. The direction of the spin set by the Stern-Gerlach device is volatile. Since the Atoms in a beam of Atoms enter the Stern-Gerlach Device one after the other, an Atom entering the device always has the Opposite Spin of the one entered just before.

B. Bushism in Action in Stern-Gerlach Experiment

As we have seen, even though an atom is electrically neutral, an atom has a Spin Magnetic Moment. Any External Magnetic Field has one message for any Atom that enters its realm or jurisdiction. You are either with us or against us, Classic Bushism. If you are not totally against us, we will consider you a friend and torque you Up (Spin-Up). If you are totally against us, we will send you Down (Spin-Down), that is all to it, period. That is all there is for the Stern-Gerlach Experiment. Orientation of an Atom is determined by the External Magnetic Field unless its orientation is not completely opposite of the External Magnetic Field.

If the orientation of an Atom is completely opposite of the External Magnetic Field, the External Magnetic Field has no effect on the orientation of the Atom, simply because the orientation torque is zero when the Spin Magnetic Moment of the Atom is in the direction of the External Magnetic Field or the direct opposite of the direction of the External Magnetic Field. There is no probability here. There is no Uncertainty or Uncertainty Principle here. Everything here is certain. There is no rolling of dice here. There is no 50-50 chance here. The direction of the External Magnetic Field dictates here unless the orientation of the Atom is directly opposite of the External Magnetic Field.

There are no Spin-Up atoms or Spin-Down atoms. Spin-Up and Spin-Down are always present together in a particle relative to an observer. There is no Up without Down and vice versa. Spin-Up and Spin-Down are non-separable since the separation means the creation of magnetic monopoles. There are no magnetic monopoles. There are no spin monopoles. Spin-Up and Spin-Down are not states of an atom. It is we who define the Up and Down. Up and Down are not a signature of a particle; it is a label we assign to a

Spin; that label does not stick.

Spin-Down is just the rotation of the Spin-Up by 180° degrees and vice versa. The rotation of an Atom does not change the property of an Atom. As a result, neither the Spin-Up nor the Spin-Down is an intrinsic property of an atom of any spinning object. What is the Spin of the earth? Answer depends on where you are. If the earth is Spin-Up relative to your current location, then, move to the opposite Hemisphere and the earth is now Spin-Down. Earth's state did not change, it is your perspective of the object that changed.

In the Stern-Gerlach Experiment, what is at work is the Spin Magnetic Moment due to the Spin of the nucleus, which is also the same as the Spin of the Atom. Now, we want to find out what exactly happens when a neutral atom with magnetic moment μ_{s} interacts with an external magnetic field B. Stern-Gerlach Experiment is all about the interaction of μ_s with **B**. The net Spin Magnetic Moment due to the Spin of electrons on their own axes is zero due to the magnetic coupling of the Spin Magnetic Moments of the neighboring electrons. The Spin Magnetic Moment of an electron is also negligible compared to the Spin Magnetic Moment due to the spin of the nucleus. As a result, the Stern-Gerlach Experiment has nothing to do with the Spin of electrons on their own axes when a beam of atoms is used. The spin of electrons play a part when a beam of electrons is used with the Stern-Gerlach device. However, electrons in the Split-Beams take spiral paths in the Stern-Gerlach device and hence the Stern-Gerlach Device is mainly for electrically neutral beams of Atoms, not for beams of charged particles. This is the reason why a beam of Silver Atoms was used originally in the Stern-Gerlach experiment.

If you want to consider the Spin of electrons on their own axes, you must use a beam of electrons in the Stern-Gerlach Experiment, but the drift-path will be a spiral theoretically when a beam of electron is used; however, practically, you may not see any beam splitting on the screen when a beam of electron is used since Split-Beams spiral Up and Down, not toward the screen. Stern-Gerlach Device is only for a beam of electrically neutral Atoms, not for a beam of charged particles.

Spin Magnetic Moment due to the Spin of an electron on its own axis is proportional to the square radius of the electron mass, which is negligible, and hence if a beam of electrons is used in the Stern-Gerlach Experiment, it will not give any observable beam splitting. Further, it is the orbiting electrons that spin, not the isolated electrons. An electron that has never been a part of an atom has no spin. Spin is a property of an orbiting system. A dislodged electrons in a beam of electrons spin.

Lemma:

Although the overall electric charge of an Atom is zero, an electrically neutral Spinning Atom generates a Spin Magnetic Moment since an Atom is an orbiting system of charge particles. The orientations of the Spins of the Atoms in a beam of Atoms are such that the Spins of the neighboring Atoms are of opposite orientations (Up, Down, Up, Down, ...).

Lemma:

The Stern-Gerlach Experiment with a beam of Atoms has nothing to do with the Spin of electrons on their own axes. It has nothing to do with Pauli's exclusion principle or Pauli's spin matrices. It has all to do with the Atomic Spin, which is the Spin Magnetic Moment due to the spin of the nucleus. The Spin Magnetic Moments of the neighboring Atoms in a beam of Atoms are of opposite directions due to magnetic coupling of neighbors.

Lemma:

There is no probability involved in the splitting of a beam of Atoms in the Stern Gerlach Device.

Lemma:

The split of a beam of Atoms by the Stern-Gerlach Magnetic Field into Spin-Up (Up, Up, Up, Up, ...) and Spin-Down (Down, Down, Down, ...) beams of equal number of Atoms is due to the magnetic coupling of the Spin Magnetic Moment of Atoms in the incoming beam. The directions of the Spin Magnetic Moment of the neighboring Atoms in the incoming beam into the Stern-Gerlach Magnetic Fields are against each other (Up, Down, Up, Down, ...). It has nothing to do with the Pauli's exclusion principle or Pauli's spin matrices. It has nothing to do with probability.





In the Figure, the Box represents the Stern-Gerlach Magnetic Field. The Atoms inside the box are under the influence of the Stern-Gerlach Magnetic Field B. The incoming beam is free of the influence of an external magnetic field. Two outgoing Split-Beams are not under the influence of an external magnetic field. When Split-Beams leave the Stern-Gerlach Magnetic Field, the Atoms in the beams are free to reorient. The Atoms are free to undergo magnetic coupling with the neighbors. As a result, the outgoing Spin-Up and Spin-Down beams from the Stern-Gerlach Magnetic Field are no longer Spin-Up and Spin-Down beams once they leave the Stern-Gerlach Magnetic Field. Both outgoing beams have neighboring Spins one against the other (... D, U, D, U).

Lemma:

When Spin-Up Split-Beam (Up, Up, Up, Up, ...)

and Spin-Down Split-Beam (Down, Down, Down, Down, ...) leave the Stern-Gerlach Magnetic Field, two Split-Beams will reorient and take the form of (Up, Down, Up, Down, ...) due to the magnetic coupling of the Spins of the neighboring Atoms in the absence of an external magnetic field. A Split-Beam leaving the Stern-Gerlach Magnetic Field is no longer Spin-Up beam or Spin-Down beam; they are beams of Atoms with alternating Spins just like the beam entered the Stern-Gerlach Device but each now containing only half the Atoms of the original beam.

C. Stern-Gerlach Device is Useless

Once the two Split-Beams leave the Stern-Gerlach Device, the overall effect of the Stern-Gerlach Device is nothing more than dividing a beam of 2n Atoms with alternate Spins into two beams of alternate Spins with equal number of n Atoms. All that for nothing. Stern-Gerlach Device is useless. The division of a beam of 2n Atoms into two beams of n Atoms is a good indication that probability plays no part here. Probability has nothing to do with Spins or Stern-Gerlach Device.

Lemma:

The overall function of the Stern-Gerlach Device is nothing more than dividing a beam of Atoms into two beams of equal number of Atoms. The neighboring Atoms in the outgoing beams have opposite spins just like the incoming beam.

Lemma:

If a beam of electrons is used in the Stern-Gerlach Experiment, the beam will be split into two spirals, one drifting upward (Up beam) and the other drifting downward (Down beam). No beam splitting can be observed on the screen of the Stern-Gerlach Device for a beam of electrons or charge particles since the spiraling Up and spiraling Down prevents the Split Beams reaching the screen. If a beam of electrically neutral Atoms is used, the Split beams by the Stern-Gerlach Device take linear paths since Atoms are electrically neutral.

If a beam of charged particles is used in the Stern-Gerlach experiment, the beam will be split into two spirals. It is still possible to make the spiraling Up beam and spiraling down beam hit the screen by adjusting the distance to the screen of the Stern-Gerlach Device and the speed of the electrons appropriately. However, in order to prevent the paths. spiraling Stern-Gerlach device uses a electrically neutral beam of Atoms rather than a beam of charged particles. That is the reason for choosing a beam of Silver Atoms in the Stern-Gerlach Experiment rather than a beam of electrons; a beam of electrons would not have been practical in the Stern-Gerlach Experiment.

When neutral atoms are used, the Atomic Spin Magnetic Moment due to the spin of the nucleus is strong enough for splitting the beam in the Stern-Gerlach Magnetic Field. Since Atoms are electrically neutral, they will not be splitting into spirals. A beam of atoms will be split and deflected into two beams of equal number of Atoms by the Stern-Gerlach Magnetic Field. The odd numbered atoms in the beam deflected as Spin-Up beam while the even numbered atoms in the beam deflected as the Spin-Down beam. The fact that the both split beams have the same number of atoms is an indication that the split is due to the magnetic coupling of the atoms in the beam. Larger is the atomic number of the Atom, the larger is the Spin Magnetic Moment of an Atom due to the spin of the nucleus; this is the reason for choosing Atoms with a large atomic number such as Silver Atoms in the Stern-Gerlach Experiment.

Now, let us see why a beam of Silver Atoms is split into two separate beams by the Stern-Gerlach Magnetic Field. As we are going to see, it has nothing to do with the Spin of the electrons, Spin Matrices, Pauli Matrices, Pauli's Exclusion Principle, so-called Uncertainty Principle, or Spatial Quantization or so-called Spin-1/2. It has nothing to do with Quantum Mechanics! It all has to do with the magnetic coupling between neighboring Atoms due to the Spin Magnetic Moment of Atoms.

Stern-Gerlach Under Bushism in Action:

- You are either with us or against us, Classic Bushism.
- If you are not totally against us, we will torque you Up (Spin-Up).
- If you are totally against us, you will go Down (Spin-Down).
- That is all to Stern-Gerlach, nothing more, period. No rolling of Dies.

Nobody expected to find Bushism at work in nature? What a surprise it is to find Bushism in the working of nature.

Lemma:

Splitting a beam of Atoms into two beams of equal number of Atoms by Stern-Gerlach Magnetic Field has nothing to do with Quantum Mechanics. Nothing to do with probability. Nothing to do with so-called wave functions. There is nothing mysterious in it.

Lemma:

Splitting of a beam of Atoms into two beams of equal number of Atoms by Stern-Gerlach Magnetic Field is deterministic, and it is due to the coupling of the Spin Magnetic Moments of neighboring Atoms one against the other.

X. INTERACTIONS OF NEUTRAL ATOMS WITH EXTERNAL MAGNETIC FIELD

Question:

Why does Stern-Gerlach Device divide a beam of electrically neutral silver atoms into two beams?

Answer:

Although an Atom is electrically neutral, an Atom

has a Spin Magnetic Moment (SMM) since an Atom is an orbiting system that consists of orbiting charge particles. The Spin Magnetic Moments of neighboring Atoms in a beam of Atoms are one against the other due to the magnetic coupling, (Up, Down, Up, Down, ...). Stern-Gerlach Magnetic Field separates the Up and Down atoms into two beams of equal number of Atoms. Spin-Up and Spin-Down Split-Beams remain in that orientation as long as the Split-Beams are within the Stern-Gerlach Magnetic Field. Once the Split-Beams are left the Stern-Gerlach Magnetic Field, they do not remain as Up and Down beams since the magnetic coupling between neighboring Atoms take place in the absence of an External Magnetic Field. As a result, the Split beams leaving the External Gerlach Magnetic Field will be the same as the beam entered the Stern-Gerlach Device except that each beam has half the Atoms as the beam entered the Stern-Gerlach Device. The two Split beams once they leave the Stern Gerlach-Device will have Up and Down neighboring Atoms, (Up, Down, Up, Down,). Ultimately, Stern-Gerlach Device achieves nothing except dividing a beam of Atoms into two beams of equal number of Atoms.

Lemma:

The number of atoms in the Up and Down split beams in the Stern-Gerlach Device is the same, and it is an indication that there is no probability involvement in the Stern-Gerlach Device.

An atom is electrically neutral, and therefore one may wonder why a beam of atom goes through the Stern-Gerlach magnetic field split into two beams. This may be the reason why Stern-Gerlach turned to a spooky explanation for the observation of the Stern-Gerlach experiment. No spooky explanation is required for the Stern-Gerlach experiment. No Spin quanta is required for explaining the observations of the Stern-Gerlach experiment. Bipolar spin cannot have monopolar spin quanta. There are no magnetic monopoles.

An atom is an orbiting system. Every orbiting system spins in order to counteract the angular momentum of the orbiting electrons in the atom. Every spinning orbiting system does not generate Spin Magnetic Moment and hence the Spin Magnetic Moment cannot describe every Spin. However, spinning charge particles generate a Spin Magnetic Moment. This spin Magnetic Moment aligns with external magnetic fields.

As we have seen, the spin magnetic Moment of an atom is mainly a result of the Spin of the positively charged nucleus. Although silver atoms used in the Stern-Gerlach experiment are electrically neutral, each silver atom in a beam has a Spin Magnetic Moment (SMM). The neighboring atoms in a beam of silver atoms have opposite Spins due to the magnetic coupling of the neighboring Spin Magnetic Moments. As a result, when a beam of silver atoms passes through a Stern-Gerlach device, they will be separated into two beams. One half of the atoms in the beam with the orientation the same as the first atom that enters the Stern-Gerlach device into one beam toward the direction of the Stern-Gerlach magnetic field while the other half of the Atoms in the beam with the orientation against the direction of the first Atom enter the Stern-Gerlach Device against the direction of the Stern-Gerlach magnetic field dividing the original beam into two beams of opposite Spins.

This setting of Spins, the Spins of one beam along the Stern-Gerlach magnetic field and the Spins of another beam against the Stern-Gerlach magnetic field, is volatile; they only remain in those orientations as long as the atoms are in the Stern-Gerlach device. As soon as they leave the Stern-Gerlach device, without an external magnetic field, the magnetic coupling of the neighboring spins take over and each beam will have the atoms with alternating spins just as the original beam that entered the Stern-Gerlach device; the only difference is that two beams leaving the Stern-Gerlach device have half the atoms of the original beam that entered the Stern-Gerlach device.

A beam of silver atoms that enters the Stern-Gerlach device has silver atoms aligned with alternating spins, one against the other. Two beams that are leaving also have silver atoms aligned with alternating spins. It is only that the two beams within the stern Gerlach device have one beam with all the atoms aligned with the Stern-Gerlach Magnetic field and the other beam with all the atoms aligned against the Stern-Gerlach Magnetic Field.

We already know the reason for the Spin Magnetic Moment in an electrically neutral silver atom. Now, let us see why and how the Spin Magnetic Moment of an atom or charge particle always aligns with an external magnetic field.

Question:

Why does the Spin Magnetic Field of an atom align with an external magnetic field?

Angular momentum of an orbiting system makes its constituent particles in the orbiting system to spin on their own axes so that the net angular momentum of the orbiting system is a null vector. Since an atom is an orbiting system, its constituent particles also spin on their own axes. Although the atom is neutral, its spinning constituent particles are electrically charged and hence generate Spin Magnetic Moment (SMM). There are several spins in an atom that contributes to the overall Spin Magnetic Moment of an atom, but ultimately the Spin Magnetic Moment of an atom is mainly a result of the spin of the positively charged nucleus:

• Spin Magnetic Moment due to the Spin of electrons on their own axes: This is negligible since the Spin Magnetic Moment of an electron is proportional to the square radius of an electron or the surface area of an electron, which is negligible. Further, the Spin Magnetic Moments of two neighboring electrons have opposite Spins due to magnetic coupling; they are 180 degrees out of phase. Spin Magnetic Moments of two neighboring electrons are opposite to each other due to the attraction of opposite polarities and the repulsion of the alike. Therefore, half of the electrons in an atom have Spins of positive polarity while the other half have Spins of opposite polarity. As a result, the overall Spin Magnetic Moment of an atom due to the Spin of the electrons on their own axes is approximately zero since they cancel out in an Atom with even number of electrons.

- Spin Magnetic Moment due to the Spin of the nucleus on its own axes: the Spin of the positively charged nucleus generates a Spin Magnetic Moment of its own too. This is also proportional to the square radius of the nucleus or the surface area of the nucleus. As we have already seen, Atomic Spin Magnetic Moment is mainly a result of the Spin Magnetic Moment due to the Spin of the nucleus.
- Orbit Magnetic Moment: the orbiting of electrons around the nucleus of an atom generates an Orbit Magnetic Moment.
- Merry-Go-Round Magnetic Moment: Spin of nucleus, which is the same as the spin of the atom, also takes all the bound electrons on a Merry-Go-Round ride generating Spin Magnetic Moment. However, the Merry-Go-Ride Spin Magnetic Moment is equal and opposite to the Orbital Magnetic Moment due to the orbiting of electrons in an Atom. Hence, Merry-Go-Round Spin Magnetic Moment and Orbital Magnetic Moment cancel out each other.

A. Spin Magnetic Moment of an Atom

When the nucleus of an Atom Spins, it also takes electrons of the Atom bound the on а Merry-Go-Round ride. The Spin of the nucleus is the same as the Spin of the whole atom on an axis through the center of the nucleus. When an Atom spins, it generates electrons loops or current loops around the spin axis of the nucleus. The magnetic moment of each electron loop is proportional to the square radius of the loop. These electron loops due to the spin of the nucleus are circular. The current through an electron loop is proportional to the angular frequency of the nuclear spin or the atomic spin. Since each electron is tracing its own circular path as a result of the spin of the nucleus, the directions of the current in all the current loops are the same or they are all in-phase. As a result, the Merry-Go-Round Spin Magnetic Moments of all the electrons are in-phase, and they add together constructively to generate a strong Spin Magnetic Moment for the electrically neutral atom.

Every electrically neutral atom contains a Merry-Go-Round Spin Magnetic Moment due to the spin of the nucleus or the atom. Every atom has a spin since every atom is an orbiting system. Every orbiting system spins. Every orbiting electron in an atom also generates an Orbit Magnetic Moment. The Spin Magnetic Moment of an electrically neutral atom as a result of this Merry-Go-Round Spin is equal and opposite to the Orbital Magnetic Moment generated by the orbiting of electrons, and hence they cancel each other out. So, we can forget about both the Merry-Go-Round Magnetic Moment and the Orbit Magnetic Moment of an Atom. We have also seen that the Spin Magnetic Moment due to the spin of electrons on their own axes is also negligible due to the magnetic coupling of the neighboring electrons. As a result, what is left is the Spin Magnetic Moment due to the spin of the nucleus on its own axis, which is the Spin Magnetic Moment of an Atom.

Lemma:

Although an Atom is neutral, its constituent particles are electrically charged, and hence a spinning neutral Atom generates a Spin Magnetic Moment (SMM), which is mainly the result of the spin of the nucleus. SMM of an Atom is not due to the spin of the electrons since the overall Spin Magnetic Moment of electrons is zero due to the magnetic coupling of the Spins of electrons; the Spins of neighboring electrons are against each other.

Lemma:

An electron does not have a spin unless it is an electron ejected from an atom. Spin is a property of an orbiting system, not a property of a particle. It is only a particle ejected from an orbiting system that has a Spin, others do not. A particle that had never been in an orbiting system has no Spin.

Corollary:

Every particle in the universe is in an Orbiting System and hence has a Spin.

B. Moving Atom in a Uniform Magnetic Field

When a particle of charge q travels through a uniform magnetic field **B** at velocity \mathbf{v} , the force **F** exerted on the charge is given by,

 $F=qv \times B$ (10.2.1) The direction of **F** is orthogonal to the plane of **v** and **B**. In other words, there is a centrifugal force orthogonal to the velocity **v** of the particle. As a result, the particle takes a circular path. If the particle is a neutral atom, then q=0, and hence the centrifugal force is a null vector, **F=0**. Therefore, a neutral particle such as an Atom does not take a circular path when it travels through a uniform magnetic field. A neutral atom follows a linear path in a uniform external magnetic field **B**.

The $\mathbf{F}=q\mathbf{v}\times\mathbf{B}$ applies only for static fields. It does not apply to light or propagating electromagnetic fields. $\mathbf{F}=q\mathbf{v}\times\mathbf{B}$ is not the Lorentz Force. Lorentz Transform cannot transform Maxwell equations for propagation of light onto inertial frames [16]. Lorentz Transform only transforms the static electric and magnetic fields [17]. Static electric and magnetic fields also satisfy the Maxwell equations. Both Einstein and Lorentz mistakenly assumed that they had transformed the Maxwell equations onto inertial frames when in fact what is being transformed onto inertial frames by the Lorentz Transform is the static electric and magnetic fields. The relationship $\mathbf{F}=q\mathbf{v}\times\mathbf{B}$ does not apply to propagating electromagnetic waves. The relationship $\mathbf{F}=q\mathbf{v}\times\mathbf{B}$ for static fields were known before the Lorentz.

Lemma:

The $\mathbf{F}=q\mathbf{v}\times\mathbf{B}$ applies only for static fields. The $\mathbf{F}=q\mathbf{v}\times\mathbf{B}$ is not the Lorentz Force. The Lorentz Force does not exist since the Lorentz Transform cannot transform the Maxwell equations. The Lorentz Transform has no existence. For light or propagating electromagnetic waves $\mathbf{F}\neq q\mathbf{v}\times\mathbf{B}$.

Lemma:

An electrically charged moving particle in a magnetic field takes a circular path. Unlike a moving electron or a charged particle in a magnetic field, a neutral Atom follows a linear path in a uniform external magnetic field. This is the reason why the Stern-Gerlach Experiment uses a beam of neutral Silver Atoms.

Any spinning charge particle has a Spin Magnetic Moment (SMM). Any neutral Atom also has a Spin Magnetic Moment (SMM). The Spinning Magnetic Moment μ_s of a particle generates a torque when the particle is in an external magnetic field **B**. The tendency of the torque is to align the Spin Magnetic Moment μ_s with the external magnetic field **B**. The total effect on a spinning particle moving at velocity **v** through a uniform magnetic field **B** is the superposition of the force that leads to a circular path and a torque that makes Spin Magnetic Moment to align with the external magnetic field.

In the case of a neutral atom traveling through a uniform magnetic field, the centrifugal force that leads the atom to take a circular path is zero and hence the atom takes a straight path. However, the torque τ that aligns the Spin Magnetic Moment μ_s with the external magnetic field **B** is always present. Therefore, a moving electrically neutral atom takes a straight path through a uniform external magnetic field while being aligned the Spin Magnetic Moment μ_s of the atom with the external magnetic field **B**.

If the Spin Magnetic Moment of the atom μ_{s} is at an angle θ with the external magnetic field **B**, then, when $\theta=0$ or $\theta=\pm 180$, the torque **T**=**0**, and as a result an atom with the orientation towards or against the external magnetic field undergoes no alignment an hence no rotation. It does not matter what the angle θ is, the torque will always align the Spin Magnetic Moment of the Atom with the External Magnetic Field, and the Atom passes through the External Magnetic Field with Positive Polarity (Spin-Up) except when θ =±180. When θ =±180, the atom passes through the external magnetic field without being subjected to any rotation while maintaining its opposite polarity (Spin-Down); μ_s remains opposite to the direction of the external magnetic field **B** as long as the Atom is in the External Magnetic Field. However, it is noteworthy that $\theta = \pm 180$ is a critical stable point; any perturbation will result in a non-zero torque that brings the

orientation of the atom towards the external magnetic field **B** making θ =0. For a neutral atom, the effect of the motion of the atom through an external magnetic field will be solely the result of the Spin Magnetic Moment μ_s interaction with the external magnetic field **B**.

When a spinning particle of charge q travels at velocity **v** through a uniform magnetic field **B**, the force **F** and the torque μ_s are given by,

F=qv×B	(10.2.2)
$\mathbf{T} = \boldsymbol{\mu}_{s} \times \mathbf{B}$	(10.2.3)
τ= μ₅B Sin θ	(10.2.4)
where, θ is the angle between μ_s and B ,	

T²=T●T. B²=B●B.

The direction of the torque is orthogonal to the plane described by vectors μ_s and **B**. Force **F=0** when q=0. For a neutral atom, q=0, and hence **F=0**. However, in the case of neutral atoms, $\mu_s \neq 0$ even though q=0. Any atom, irrespective of whether the atom is electrically charged or not, has an Spin Magnetic Moment μ_s and hence is subjected to a torque in the presence of an external magnetic field **B** unless the Spin Magnetic Moment of the atom μ_s is aligned with (positively, $\theta=0^\circ$, Up) or against (negatively, $\theta=180^\circ$, Down) the external magnetic field **B**.

The Magnetic Potential V of a particle is given by,

V=-µ₅●B	(10.2.5)
V=-μ _s B cos θ	(10.2.6)

where, θ is the angle between μ_s and **B**.

If the Atoms in a beam of Atoms enter a Magnetic Field **B** one by one, the first Atom will align along the direction of the **B**. Second Atom aligns against the Spin of the first Atom in the direction of -**B** since the second Atom is magnetically coupled to the first Atom that entered the Magnetic Field **B**. All the Atoms in the Magnetic Field B aligns in the direction of B or against the direction of B alternatively. The beam inside the Magnetic Field B is the same as the incoming beam except that the Atoms in the beam are either aligned with the **B** or against the **B** alternatively. There is no upward motion or the downward drift of the Atoms. Stern and Gerlach introduced an upward and downward drift to the Atoms by making the Magnetic Field **B** non-uniform in the direction of **B**.

C. Moving Atom in a Non-Uniform Magnetic Field

The Spin Magnetic Moment μ_s is independent of the position of the particle, and hence, we have,

$$\nabla V =- \boldsymbol{\mu}_{s} \bullet \nabla \boldsymbol{B}$$
(10.3.1) where, $\nabla = (\partial \partial x, \partial \partial y, \partial \partial z).$

In the presence of non-uniform magnetic field **B**, there exists a potential gradient. When there is a potential gradient, there exists a force on a moving Atom and hence a drift of an Atom toward the force.

The drift force **F** on an atom is given by,

F=-
$$\nabla$$
V
Substituting from equation (10.3.1), we have,

 $F = \mu_s \bullet \nabla B$ (10.3.3) where, F is the magnitude of the drift force F. The direction of the drift force is in the direction of the negative gradient of the potential V. The F is the drift force due to the gradient of the external magnetic

field.			
In the case	of uniform	magnetic	field,

	▽B= ()		(10.3.4)
-				

Now, for a Uniform Magnetic Field, we have,	
F=0	(10.3.5)
т≠0	(10.3.6)

For a particle traveling through a uniform magnetic field, $\nabla B=0$, and as a result, there is no drift force, F=0, However, the torque is present, $\tau\neq 0$ irrespective of the type of external magnetic field as long as external magnetic is present, $B\neq 0$; torque τ is independent of the charge of the Atom.

There is a non-zero torque $\tau \neq 0$ on an Atom entering the Stern-Gerlach Device. An Atom can be electrically neutral, but the torque is always present when an Atom is in an External Magnetic Field when $\theta \neq 0$ or $\theta \neq \pm \pi$, where θ is the angle between the Spin Magnetic Moment of the Atom before entering the Stern-Gerlach Device and the Stern-Gerlach Magnetic Field **B**. It is only when $\theta=0$ or $\theta=\pm\pi$ that the torque is zero. This non-zero torque τ must be taken into account in the Stern-Gerlach Experiment. Atoms can be electrically neutral, but the torque is still present in the presence of an external magnetic field due to the Spin Magnetic Moment of the atom.

Lemma:

When an Atom enters an External Magnetic Field, there will be an orientation torque even though the Atom is electrically neutral due to the Spin Magnetic Moment of the Atom. Orientation of an Atom with an External Magnetic Field takes place instantly at the arrival of the Atom in an External Magnetic Field since the External Magnetic Field is strong in the Stern-Gerlach Device.

Lemma:

In the presence of an External Magnetic Field, the total Spin of an Atom (not a component it on the External Magnetic Field) always aligns toward the External Magnetic Field unless the orientation of the Atom is already against the direction of the External Magnetic Field, in which case the orientation of the Atom remains unaltered by the External Magnetic Field.

Lemma:

The x, y, and z axes component of a Spin cannot be obtained by using an external magnetic field or Stern-Gerlach device since it is the total Spin that aligns with an external magnetic field, not the component of the Spin in the direction of the external magnetic field.

XI. MAGNETIC COUPLING OF A BEAM OF ATOM

Definition: Orientation of an Atom

The orientation of an Atom is defined as the direction of the Spin Magnetic Moment of an atom, which is also the Spin of an Atom.

Lemma:

The orientation of an Atom is determined by the

(10.3.2)

environment the Atom is in. The orientation of an Atom is not determined by the Atom itself and hence the orientation of an Atom is not a property or state of an Atom. Atom or charge particle does not have memory of its direction of Spin and hence the Bell's theorem is meaningless.

Lemma:

The Spins of two neighboring Atoms are always one against the other due to the attraction of opposite polarities and the repulsion of alike, which is the magnetic coupling.

Consider a beam of atoms or atoms lined up in a straight line. Each atom has Spin Magnetic Moment and hence they are little magnets. When magnets are nearby, they become magnetically coupled. Similarly, the neighboring Atoms in a beam are magnetically coupled due to the Spin Magnetic Moment of atoms. No two atoms in a beam of Atoms have the same Spin.

The magnitude of the Spin Magnetic Moment is the same if we choose the same kind of atoms, atoms with the same atomic number, such as silver atoms that are used in the Stern-Gerlach Experiment. Since the atoms are free to orient themselves in a beam, the atoms in a beam will orient themselves in such a way the nearby atoms are of opposite polarities of Spins. In other words, two nearby atoms have their Spin Magnetic Moment oriented against one another. As a result, one half of the atoms in a beam will be oriented in one direction, while the other half will be oriented in exactly the opposite direction alternatively. If one atom has the orientation of angle θ with the vertical axis z, then its neighbor will be oriented at an angle $\theta \pm 180^{\circ}$ to the vertical direction z or in the -z direction. In other words, the neighboring atoms have their Spin Magnetic Moment oriented one against the other just like magnets or compasses. "Just like magnets" is an understatement. Atoms are magnets.

Now, let us assume we get hold of the rightmost atom in the beam and apply a torque anti-clockwise and force it to orient in the vertical z direction \uparrow , θ =0. Then, the rest of the atoms will follow the suite since all the atoms in the beam are magnetically coupled or entangled. The second Atom to the left of the first will orient itself \downarrow , against the orientation of the first at an angle ±180° degrees to +z direction or toward the -z direction. The third atom to the left will orient \uparrow , against the orientation of the second atom at an angle 0° degree to +z and so on. ITITIT ↑ when we force the rightmost atom in a beam to be vertical, the rest of the atoms follow suit due to magnetic coupling so that no two neighbors have the same Spin orientation.

One half of the atoms in the beam will be oriented vertically in +z direction, while the other half orients themselves in the –z direction. No two neighboring atoms have the same orientation due to the attraction of the opposite polarities and the repulsion of the alike. It only takes the change of the orientation of only one atom to change the orientation of all the atoms in the beam since all the atoms in a beam are magnetically coupled. The orientation means the direction of the Spin Magnetic Moment of an atom. By changing the orientation of one atom, you are affecting the orientation of all the magnetically coupled atoms even though they are at distance.

Every spinning atom has a Spin Magnetic Moment. However, every spinning particle does not have a Spin Magnetic Moment. Only the spinning charge particles have Spin Magnetic Moment. So, when we use the direction of the Spin Magnetic Moment to describe the direction of Spin, it only applies to spinning charge particles and Atoms. To describe the spin of a neutral particle, we have to use the direction of the Spin Angular Moment. Spin of a neutral particle does not respond to Magnetic Fields. We cannot align the direction of the Spin of a neutral particle with an external magnetic field.

It is also important to mention that every magnetic field is not a spin. The magnetic field of light is not a spin. The polarization of light is not a spin. A light beam can consist of Horizontally polarized waves as well as Vertically polarized waves. However, the Spin of a charged particle cannot be both Up and Down simultaneously. There cannot be Spin-Up without Spin-Down. However, there can be Vertical Polarization without Horizontal polarization. Spin-Up and Spin-Down of a charge particle or of an atom are 180 degrees out of phase. However, the Horizontal and Vertical polarizations of light are 90 degrees out of phase. You cannot use the results of experiments for Horizontal and Vertical polarization of light to justify the theories on Spin of charge particles or Atoms. You cannot build optical processing units based on the polarization of light and call them Q-bits or Quantum Computers. There are no Quantum Computers. Quantum Computer is a misnomer. Computers relying on the Horizontal and vertical Polarization of light based optical processing units (O-Bits) are Optical Computers, not Quantum Computers.

The so-called entanglement is a fancy word for magnetic coupling, nothing more. This is exactly what is happening in the Stern-Gerlach Experiment. It is the failure to take this magnetic coupling of Atoms into account that led to the mysterious and invalid probabilistic interpretation of the Stern-Gerlach Experiment, voodoo-fication of microscopic particles; this is the Genesis of Voodoo Physics. If they have counted the number of Atoms in the Up and Down Split beams, they should have realized they are equal. There is no probability involved in the Stern-Gerlach device.

You can neither set nor measure the Spin Magnetic Field of a particle. The setting of a Spin by the Stern-Gerlach device is volatile. As soon as an Atom is out of the Stern-Gerlach Magnetic field, the Spin of the atom is no longer the Spin it once was. The direction of the Spin of an Atom or charged particle is the direction of the magnetic field of the environment it is in. The Stern-Gerlach device is not a Spin measuring device. A permanent magnetic field cannot be used to measure the Spin of an Atom or charged particle. Bell's theorem is meaningless since the direction of the Spin of an Atom or charged particle is not a state of a particle. A Bipolar Spin does not have unipolar Up and Down.

Lemma:

Horizontal and Vertical Polarization of light are not Spin-Up and Spin-Downs of particles. Polarization is unipolar. Spin is bipolar. Polarization has nothing similar to Spin. Polarization of light cannot be used to simulate spins. The use of polarization to represent the Spin of an Atom or a charged particle is pure deception or blunder.

XII. EFFECT OF TORQUE ON NEUTRAL ATOMS

Even a neutral Atom has a Spin Magnetic Moment μ_s and hence generates a torque τ in the presence of an external magnetic field **B**. What does this torgue do to an atom? This torque forces the Spin Magnetic Moment to align in the direction of the external Magnetic field **B**. When the Spin Magnetic Moment aligns along the direction of the external magnetic field **B**, the magnetic potential of the atom will be at minimum, a stable orientation.

If the Spin Magnetic Moment of an atom is at an angle θ with the external magnetic field **B**, the torque will try to bring it back to the orientation where it is in alignment with the external magnetic field B so that θ=0.

If the Spin Magnetic Moment of the atom is directly opposite to the external magnetic field **B**, θ =±180° degrees, then, the torque $\textbf{\tau=0}$ and hence the atom remains at that orientation. However, the atom is at maximum potential now. As a result, $\theta = \pm 180^{\circ}$ is a critical stable point. There will be no torgue on atom that has its Spin Magnetic Moment aligned against the external Magnetic field B. However, a slightest perturbation in the orientation of the atom from $\theta = \pm 180^{\circ}$ to $\theta = \pm 180^{\circ} \pm \delta$, where δ is a small perturbation, then, $\tau \neq 0$, and hence the atom will undergoes rotation until it orient itself in the direction of the external magnetic field **B**.

If the angle between the Spin Magnetic Moment μ_s and the external magnetic field **B** is θ , for an atom that is free to orient itself, we have,

- If θ =0, then, **T**=0: orientation of the atom remains in the direction, +B.
- If $\theta = \pm 180^{\circ}$, $\tau = 0$: orientation of the atom remains unchanged in the direction, -B

If $\theta \neq 0$, $\theta \neq \pm 180^{\circ}$, $\tau \neq 0$: atom rotates until it aligns with +B. The orientation is immediate since B is strong in the case of Stern-Gerlach Experiment.

The orientation of atoms in a beam of atom depends on the environment the beam is in:

- 1. In the absence of an external magnetic field the neighboring Atoms in a beam have opposite Spins; a half of the atoms will have the same orientation θ with the z axis, while the other half has the opposite orientation, $\theta \pm 180^{\circ}$. No two neighboring atoms can have the same orientation due to the attraction of the opposite polarities and the repulsion of alike.
- If a beam of atoms is in a strong external magnetic 2. field **B**, each atom in the beam will be oriented towards or against **B** immediately depending on how they enter the external magnetic field. If all the Atoms are exposed to the external magnetic field at once and the orientation of the beam is different from the direction of **B**, then, all the Atoms in the beam will be oriented towards the external magnetic field **B**.
- If the Atoms in a beam of Atoms enter an external 3. magnetic field one by one sequentially, as the first atom in the beam enters a strong magnetic field **B**, it immediately orients along the direction of **B** due to the torque that forces it to align with **B**. All the atoms in the beam follow the suite aligning against or towards the orientation of the first Atom alternatively even though the rest of the atoms are outside the external magnetic field **B** since atoms in a beam are magnetically coupled. Even though it is only the first atom that is in the external magnetic field **B**, half of the atoms in the beam will be oriented in the direction of +B, while the other half will be oriented against the external magnetic field or in the direction -B. When the orientation of one atom has changed, the rest follows since all the atoms in a beam are magnetically coupled. This is the reason why all the atoms in the Stern-Gerlach experiment enter with the orientation towards (Spin-Up) or against (Spin-Down) the Stern-Gerlach magnetic field. This also explains why the number of atoms in both the Spin-Up and Spin-Down beams are the same in the Stern-Gerlach Experiment. As we have seen, it has nothing to do with probability.

We have already seen that the Spin Magnetic Moment (SMM), μ_s of a neutral atom is given by,

μ_s=-(3/128)enω_sA_{nu} (12.1)where, $A_{nu}=4\pi(r_{nu})^2$, r_{nu} is the radius of the nucleus of the Atom and ω_s is the spin angular frequency of the atom, e is the charge of an electron and n is the atomic number.

For atoms with a fixed number of electrons or the same atomic number, $(3/128)en\omega_sA_{nu}$ is a constant; let that constant be β . then we have,

(12.2)

 $\mu_s = \pm \beta$ The direction of μ_s is orthogonal to the plane of Atomic Spin, which is also the same as the orbital plane of the electrons in an Atom.

After the first atom enters the external magnetic field, the rest of the atoms in the beam of atoms enter the external magnetic field one by one either aligned with the external magnetic field or against the external magnetic field. If the angle between the orientation of the first Atom and the external magnetic field **B** is θ and $\theta \neq \pm 180^{\circ}$, then, immediately after the first Atom enters the external magnetic field B, it aligns itself towards **B** (Spin-Up). All the rest of the odd numbered atoms in the beam (n, ... 7, 5, 3) will enter pre-oriented towards the B (Spin-Up), while all the even numbered Atoms in the beam(n-1, ..., 8, 6, 4, 2)enter pre-oriented against B or in the direction of -B (Spin-Down) direction. If $\theta=\pm 180^\circ$, then, all the odd atoms (... 7, 5, 3, 1) will enter oriented against the B or in the direction of -B (Spin-Down), while all the even Atoms (..., 8, 6, 4, 2) enter pre-oriented toward B (Spin-Up) direction.

As a result, $\mu_s \bullet B = \pm \beta B$, and hence the potential V= $\pm \beta B$, where $\mu_s = \pm \beta$, which is a constant. Since all the atoms in the beam, except the first atom, enters the external magnetic field with orientations $\theta=0$ or $\theta = \pm 180^\circ$, there is no torque, $\tau=0$. We will consider this in more detail when we consider the Stern-Gerlach experiment and its setup in a separate section later.

It is important to notice that the number of atoms having potential, $+\beta B$ is the same as the number of atoms having the potential, $-\beta B$ in the Stern-Gerlach Experiment. This is because, when the first atom enters and immediately aligns with the external magnetic field, the rest follows the suite while they are outside the magnetic field; no two neighboring atoms in the beam have the same orientation. This is due to the Spin Magnetic Coupling of the atoms, or so-called entanglement, in a beam due to the attraction of the opposite polarities and the repulsion of the same polarities.

XIII. $\pm\beta$ SPIN ATOM

Spin is Bipolar. Spin-Up and Spin-Down have no independent existence. Up has no existence without Down and vice versa. Spin cannot come in Up and Down quanta since Up and Down are non-separable. Spin-Up and Spin-Down cannot be in a superposition since Spin-Up and Spin-Down have no independent existence.

We have seen that the Spin Magnetic Moment of an Atom is a constant, $\mu_s = \pm \beta$ relative to the plane of the Spin for atoms for the same number of electrons or atomic number. Spin of an Atom is $+\beta$ from one direction relative to the plane of Spin and the same Spin is $-\beta$ from the opposite direction relative to the plane of spin with respect to an observer; the plane of the Spin is also the same as the Orbit plane of the electrons.

Lemma:

Spin can be either Spin-Ip or Spin-Down relative to an observer because it is Bipolar, not because spin comes in quanta. Bipolar spins cannot have unipolar Up and Down quanta. It is the misinterpretation of the Stern-Gerlach Experiment that turned Physics into voodoo Physics.

If $\mu_s = +\beta$, the Spin Magnetic Moment is in one direction (Spin-Up), and if $\mu_s = -\beta$, then, the Spin Magnetic Moment is in the opposite direction (Spin-Down) relative to the plane of the Spin with respect to an Observer. The orientation of the Plane of Spin can be in any direction in the absence of an external field or other nearby atoms. As a result, an Atom is Spin-Up or Spin-Down relative to an Observer. The Spin can be Spin-Up by a constant $+\beta$ or Spin-Down by a constant $-\beta$ with respect to the plane of Spin, which is also the plane of orbit, relative to an Observer. This is the reason why it is said that the Spin is either Up or Down; it is with reference to the plane of Spin relative to an Observer, not an absolute measure, not a state of a Spin. There is no absolute measure of Spin-Up ↑ or Spin-Down ↓. There is no absolute measure of Counterclockwise or Clockwise either. Direction of any Spin is always relative. Spin-Up and Spin-Down are not states of a particle. There are no Spin-Up atoms or Spin-Down atoms. There are no Spin + β atoms or Spon - β atoms. We can only say the magnitude of atomic Spin is a constant β.

However, the magnitude of the Spin Magnetic Moment or the Spin β of an Atom changes if an electron is dislodged from an Atom. It is because the Spin frequency ω_s changes with the change of number of orbiting electrons. When the Spin frequency changes, Spin β changes. Spin is not a fundamental property of an atom.

Spin-Up and Spin-Down based on the direction of the Spin Magnetic Field cannot define the spin of a neutral particle. Spinning electrically neutral particle does not have a Spin Magnetic Field. But, a spinning neutral particle also has a Spin-Up and Spin-Down based on the direction of the Angular Moment of the particle.

The orientation of the plane of spin of an Atom can be in any direction only if the atom is not near any other atoms or in an external magnetic field. If two atoms are at close proximity, then, the orientation of each atom is influenced by the other due to the Spin Magnetic Moment of atoms. No two nearby atoms can have the same polarity, or in other words, no two nearby atoms can have their Spin Magnetic Moments in the same direction unless they are in an external magnetic field that overpowers the magnetic coupling between the Spin Magnetic Field of the atoms..

Atoms are microscopic magnets due to their Atomic Spin, and hence they attract opposite polarities and repulse the alike. As a result, the spinning planes of all the nearby atoms will be on the same plane, or in other words, the Spin Magnetic Moments of half of the atoms will be toward one direction (Spin-Up) while the other half is in the opposite direction (Spin-Down). Two adjacent atoms always have the opposite polarities Up-Down, Down-Up; it could be \mathbb{N} , \mathfrak{l} or $\mathcal{N}, \mathcal{L}, \mathbb{N}$ at any angle. Up does not mean vertical +z axis and Down does not mean -z axis. Up means a direction orthogonal with respect to the Spin plane relative to an Observer, and the Down is the opposite.

If there are two neighboring atoms, they can only be in one of two positions. They can be next to each other having the same plane of spin but facing opposite polarities, or they can be one on top of each other having their plane of Spins parallel to each other but opposite polarities facing each other. If you place two atoms in any other position, they will end up in one of those two positions due to the magnetic coupling. The separating distance between two electrons is determined by the attraction force due to the Spin magnetic field and the electrostatic repulsion between two electrons. The distance between electrons is such that these two electrostatic and magnetic forces are equal and opposite. In the case of the Atoms of the same kind with the same atomic number, there is no repulsion between nucleus and hence the Atomic distance is determined by the coupling between the Spin Magnetic Moment of the Atoms.

If we have a population of atoms, one half of the atoms will be Spin-Up while the other half is Spin-Down. By changing the orientation of one atom, you can change the orientation of all the atoms since the atoms in a population of atoms are magnetically coupled. If one atom in the population is affected by an external magnetic field in the vertical z direction. the rest of the atoms in the population will automatically be aligned in the -z direction and +z direction. One half of the atoms in the population have their polarization in the +z direction while the other half have their polarization in the -z direction; all these orientations take place when one atom in the population of atoms changes its orientation toward +z direction. It is only one atom that is in the external magnetic field, all the rest of the atoms are away from the external magnetic field, yet, they are all either directed toward or against the external magnetic field. This is due to the magnetic coupling of atoms by their Spin Magnetic Moment. This is the reason for the splitting of a beam of silver atoms into two beams in the Stern-Gerlach experiment.

Before an atom reaches an external magnetic field, the orientation of the Spin Magnetic Moment of the atom can be at any angle θ with the direction of the external magnetic field **B**. However, when an Atom enters the external magnetic field **B**, the alignment torque generated will bring the Spin Magnetic Moment into alignment with the direction of the external magnetic field making θ =0. As a result, half of the atoms in the population align in the direction of the external magnetic field while the other half of the Atoms align against it even though all the atoms are outside the external magnetic field except the one atom that is inside the External Magnetic Field.

We now have one atom within the external magnetic field aligned in the direction of the external magnetic field. The rest of the atoms are also aligned towards or against the external magnetic field even though the rest of the atoms are outside the magnetic

field. Now Let us rotate the external magnetic field while the first atom is still inside the magnetic field and the rest are outside. When we rotate the external magnetic field, all the atoms follow the rotation by the same angle in synchrony due to the magnetic coupling. They act like they are invisibly attached, in fact, they are attached by magnetic coupling.

This is the action at a distance due to magnetic coupling. It is not spooky, it is Causal. There is no probability involved here. Nature does not do probability. It is we who enforced probability on nature due to the lack of our understanding of the underlying data generating process in nature. Probability and statistics are not science, it is a decision-making tool invented by humans. Probability was first invented for gambling and later started using it as an objective decision-making process in the lack of understanding of the underlying data generating mechanisms. We use it to extract some information when we do not have a complete understanding of the physical process that generated the data.

Lemma:

Atoms in a beam of Atoms are magnetically coupled. If you rotate one atom, it results in the rotation of all the Atoms in the beam. You cannot change the orientation of one Atom without affecting all the other nearby Atoms.

Lemma:

There are no Spin-Up or Spin-Down Atoms. There are no Spin-Right or Spin-Left Atoms. There are no Spin-in or Spin-Out Atoms. Up, Down, Right, Left, In, Out labels only exist relative to an observer. Atoms do not exist relative to observers. Spin-Up, Spin-Down are not the signature of the Spin of an atom itself, they exist only relative to an observer and vary with the location of the observer with respect to the plane of spin of the Atom or charge particle.

XIV. STERN-GERLACH EXPERIMENT

"Stern Gerlach Experiment is a Contraption that turned Physics into a Voodoo-Physics, Physicist into voodoo-Practitioners and voodoo-Science writers, Scientific Books and Journals into religious texts, Employees and Students into slaves of a religious ideology."

"Stern-Gerlach Device is neither a Spin setting device nor a Spin measuring device. The setting of a Spin by the Stern-Gerlach Device is volatile. Spin of a particle cannot be set to a desired direction by the Stern-Gerlach Device. The \mathbf{x} , \mathbf{y} , and \mathbf{z} axes component of a Spin cannot be obtained by aligning the Stern-Gerlach Magnetic Field in \mathbf{x} , \mathbf{y} , and \mathbf{z} direction. It is the total Spin that aligns with an external magnetic field, not a component of the Spin in the direction of the external magnetic field. The failure to realize this is the major blunder in the Bell's theorem."

There is nothing much to discover from the

Stern-Gerlach Experiment (SGE). The only thing you can prove using the Stern-Gerlach Experiment is the existence of Spin Magnetic Moment in an Atom. You cannot use Stern-Gerlach Device to measure the Spin of an Atom. It is not a Spin measuring device; it is a Spin Enforcer that works under Bushism (you are either with us or against us). Once an Atom is out of the Stern-Gerlach device, it is no longer at the set spin by the Stern-Gerlach Device. Spin Magnetic Moment (SMM) of an Atom or a charged particle always aligns with the magnetic field the Atom or charge particle is in

You cannot use Stern-Gerlach Device to filter out atoms with an orientation that differs from the orientation of the Stern-Gerlach Magnetic Field. The Stern-Gerlach Experiment is simply blind to the orientation of the Spin Magnetic Moment (SMM) of an Atom. Stern-Gerlach Device does not care what the Spin orientation the Atom is in. If an Atom is not either in the direction of the SGMF or against it, Stern-Gerlach Device will align the Spin Magnetic Moment of the Atom along the SGMF.

When Atom arrives in the Stern-Gerlach Magnetic Field, Spin Magnetic Moment (SMM) of the Atom aligns itself with the Stern-Gerlach Magnetic Field (SGMF) immediately, unless its orientation is direct opposite of SGMF, in which case the orientation torque is zero. Orientation of any Atom in the Stern-Gerlach Magnetic field is either with the SGMF or directly opposite to it; nothing in between. Atom, vou are either with us or against us.

The Stern-Gerlach Experiment itself is simple and the mechanism of operation is straight forward. There is nothing strange about the outcome of the Stern-Gerlach experiment for a beam of Silver Atoms. There is nothing strange about the splitting of a beam of silver Atoms into two beams of equal number of Atoms by the Stern-Gerlach Device. There is nothing strange about the Split Beams following the rotation of the Stern-Gerlach Magnetic Field. If the incoming beam is at an angle to the device, it is not a problem; it will work fine. It is the interpretation of the observation of the experiment that is completely insane, it is not Science; it even surpasses the voodoo-science.

Let us see what exactly happens in the Stern-Gerlach Experiment and why the beam of silver atoms split into two beams of equal number of Atoms and why the split follows the direction of the Stern-Gerlach Magnetic field when we rotate the magnetic field in any direction. We already know that the reason is the magnetic coupling between atoms in a beam of atoms. Let us see in more detail what is exactly happening in the Stern-Gerlach Experiment so that we can put an end to bizarre Voodoo-Physics.

The core of the Stern-Gerlach Experiment is specially shaped magnet; there is nothing more to it. The specially shaped magnet produces a non-linear magnetic field **B** along the z-axis, which is also known as Stern-Gerlach Magnetic Field such that,

	,	
B= (0, 0, B _z)		(14.1)
$\nabla \mathbf{B} = (0, 0, \partial B_z / \partial z)$		(14.2)

where $\nabla = (\partial/\partial x, \partial/\partial y, \partial/\partial z)$,

(14.3)

∂B₇/∂z≠0 In the Stern Gerlach-Experiment, a beam of electrically neutral Silver Atoms traveling along the x-axis is split into two separate beams of exactly equal number of atoms and hit the screen at two separate points. The line joining those points is along the direction of the Stern-Gerlach Magnetic Field. If you rotate the Stern-Gerlach Magnetic Field, those two points on the screen or the Split-Beams will rotate in-phase by the same angle. Two points on the screen will rotate with the rotation of the Stern-Gerlach Magnetic Field. The distance between the two points will not change by the rotation.

The fact that the number of Atoms in the Spin-Up beam is the same as the number of Atoms in the Spin-Down is a good indication that the direction of the spin of the Atoms in the beam that enters the Stern-Gerlach Device is determined by the magnetic coupling between the Atoms, and not a property of the Atoms themselves. If the Spin-Up and Spin-Down are properties of the Atoms themselves, there is no reason for the number of Atoms in Spin-Up beam to be the same as the number of Atoms in the Spin-Down beam.

This split of beam of Silver Atoms into two beams of opposite orientations and their following of the rotation of the Stern-Gerlach Magnetic Field had been used incorrectly to claim that Spin of a particle is Spatially Quantized and Spins come in two flavors, Spin-Up \nearrow , Spin-Down \checkmark ; this conclusion is completely wrong. We have already shown that there is no such thing as Spin ±1/2 and it is a result of incorrect wavelength used in Quantum Mechanics. We also have shown when the x, y, and z components of the Angular Momentum Operator of a particle is replaced by Pauli's Spin matrices, the resulting Matrix Operator no longer represents an Angular Momentum Operator. Matrix operators cannot be in Quantum Mechanics.

Now, there are two questions. Why does a beam of neutral Silver Atoms split into two separate beams of exactly equal number of Silver Atoms when the beam passes through the Stern-Gerlach Magnetic Field? Also, why do the Split-Beams follow the rotation of the Stern-Gerlach Magnetic field?

We have already shown that a neutral atom has a Spin Magnetic Moment μ_s , which is a positive or negative constant $\pm\beta$ for an Atom and it varies with the ejection of electrons by the Atom as well as with the Atomic number. The direction of μ_s is orthogonal to the plane of Spin. The plane of Spin is also the orbit plane of an atom. As a result, Spin cannot be 2-Dimensional matrix operators. Of course, you can use a 2-Dimensional Matrix Operator to rotate a vector on a plane as long as there is no involvement of a mass. However, you cannot use a 2-Dimensional Matrix Operator to rotate a mass on a plane. Rotation of a mass takes place only in 3-Dimension. A particle of mass cannot exist in 2D. A particle of mass cannot spin in 2D. Spin is always 3D. The representation of Spin must also be in 3D.

When we represent the components of an Angular

Momentum Operator with Spin Matrices of any order, the Operator is no longer an Angular Momentum Operator. Matrix Operators cannot be in Quantum Mechanics. Matrix Operators of infinite dimensions are not Hermitian and have no eigenvalue representation. Matrix Operators cannot satisfy the non-commutative relationship in Quantum Mechanics. If the position operator **X** and the momentum operator **P** are matrix operators, $[X,P] \neq j\hbar I$, where I is an identity matrix.

Further, Spin-Up is not orthogonal to Spin-Down. If Spin-Up and Spin-Down are orthogonal to each other, then, if the Spin-Up is in the vertical direction \uparrow or \downarrow , then, Spin-Down should be in the horizontal direction \rightarrow or \leftarrow . Spin-Up and Spin-Down cannot be orthogonal without Magnetic-Monopoles.

If Spin-Up and Spin-Down are orthogonal, they must be separable. Spin is Bi-Polar. Spin-Up and Spin-Down are non-separable. Spin-Up cannot exist without Spin-Down, and vice versa. In fact, Spin-Up and Spin-Down are perfectly correlated negatively. If Spin-Up is in the vertical direction \uparrow , then, Spin-Down is 180 degrees to that in the opposite direction \downarrow or vice versa. It is also important to note that you can call direction \downarrow as Spin-Up and the direct opposite of it, \uparrow as Spin-Down if you like. In fact, for an observer at an opposite location it would be the case.

Quantum Mechanics' representation of Spin-Up and Spin-Down as orthogonal eigenvectors of Pauli's 2D Spin Matrices is false. There is no Spin-Up or Spin-Down without an Observer. There are no Spin-Up or Spin-Down Atoms. There is no Spin-Up state or Spin-Down state in an Atom. Spin-Up has no existence without its counterpart Spin-Down and vice versa. Spin-Up and Spin-Down have no independent existence. Spin-Up and Spin-Down that have no independent existence cannot be in a superposition. There are Spinning Atoms, Spinning Orbit Systems. Observer dependent entity cannot be a fundamental property of a particle. Spin-Up for one Observer can be Spin-Down for another Observer. The direction of Spin-Up or Spin-Down only exists relative to observers.

It is not the Spin of electrons that generates the Spin Magnetic Moment of an Atom. Spin Magnetic Moment of an Atom due to the spin of an electron is negligibly small since it is proportional to the surface area of an electron, which is negligible. In addition, the Spin Magnetic Moment of an Atom due to the Spin of electrons will be zero due to the magnetic coupling of the electrons; the orientations of neighboring electrons are one against the other. No two neighboring electrons can have the same Spin due to the Magnetic Coupling of the Spin Magnetic Fields of electrons; no exclusion principle is required. Pauli's exclusion principle is not required for two electrons to be of opposite Spins.

It is the Spin of Nucleus or the Spin of the Atom that generates the Spin Magnetic Moment of an atom μ_s . Spin Magnetic Moment of an Atom due to the spin of the nucleus itself is proportional to the surface area of the nucleus and the atomic number. When the

nucleus of an Atom spins, it also takes all the bound electrons on circular paths on a Merry-Go-Round ride about the spinning axis through the center of the atom generating the Spin Magnetic Moment. However, Merry-Go-Round Spin Magnetic Moment cancels out with the Orbit Magnetic Moment since they are equal and opposite to each other. So, what is left as Atomic Spin Magnetic Moment is the Spin Magnetic Moment due to the spin of the nucleus itself on its own axis, which is also the spinning axis of the Atom.

The Spin Magnetic Moment μ_s is given by,

$$\mu_{s}=\pm\beta$$
(14.3)
$$\beta=(1/2)en\omega_{s}r_{ms}^{2}$$

where, β =(1/2)en $\omega_{s}r_{ms}^{2}$ r_{ms} =[(1/n) $\sum r_{i}^{2}$]^{1/2}, $\forall i, i$ =1, 2, ..., n.

 r_i is the radius of the Spin current loop of the ith electron, ω_s is the Spin angular frequency of the nucleus, e is the charge of the electron, and n is the number of electrons in an atom.

Even though atoms are electrically neutral, atoms have Spin Magnetic Moment μ_s . It does not matter if the atoms are electrically neutral, in the presence of an external magnetic field, there is going to be a torque or alignment pressure to bring μ_s in alignment with the external magnetic field **B** if it is not already (in-phase, 0°) aligned with or (out of phase, 180°) aligned against it, since each atom has a Spin Magnetic Moment μ_s .

When an atom with Spin Magnetic Moment μ enters an external magnetic field **B**, the alignment pressure or the torque **T** is given by,

τ=µ×B	(14.4)
$\mathbf{T} = (\mu_y B_z, -\mu_x B_z, 0)$	(14.5)

where.

 $\mu = (\mu_x, \mu_y, \mu_z)$ (14.6)

B =(0, 0, B _z)	(14.7)
$\mathbf{T} = (T_x, T_y, T_z)$	(14.8)

T=(T_x, T_y, T_z) (14.8) If the angle between **μ** and **B** is θ, we have, T=μB Sin θ (14.9)

where,

T ² =T●T	(14.10)
1 ² -11-11	(1/ 11)

 $\mu^2 = \mu \bullet \mu$ (14.11) Note that we have dropped the suffix s from μ for convenience. $\mu = \mu_s$. The torque **T** is orthogonal to the plane of **µ** and **B**.

The potential V(z) of the atom is given by,

V(z)=-µ●B	(14.12)
$V(z) = -\mu B_z \cos \theta$	(14.13)

A. Moving Atom in an External Magnetic Field

Now, let us see what happens to an Atom when it arrives at an external magnetic field **B**. If an Atom is arriving at velocity **v**, when it enters the magnetic field **B**, the force $q\mathbf{v} \times \mathbf{B} = \mathbf{0}$ since q = 0 for a neutral Atom. So, there is no force perpendicular to the **v** and **B**. As a result, unlike a charge particle that would have taken a circular path perpendicular to **v** and **B**, a neutral Atom DOES NOT take a circular path.

However, when an Atom enters an external magnetic field **B**, there will be a torque τ since any Atom has a Spin Magnetic Moment μ . The presence of torque τ does not depend on the charge of the Atom. A neutral Atom carries a Spin Magnetic

Moment μ , and hence when an Atom enters an External magnetic field **B**, it generates the torque τ . When the magnetic field is in the direction of the vertical z-axis, we have,

$\mathbf{T} = (\mu_v B_z, -\mu_x B_z, 0)$	(14.1.1)
τ=uB ₋ Sin θ	(14.1.2)

The torque has two components, T_x and T_y . The component τ_x will rotate μ on the yz-plane while the component τ_v will rotate μ on the xz-plane. There is no rotation on the xy-plane since $B_x=0$ and $B_y=0$. As a result of the rotation, immediately after the arrival of an atom in an external magnetic field **B**, the Spin Magnetic Moment μ of the Atom aligns with **B** and hence the angle θ will be zero, $\theta=0$,

$$\mu_x=0, \ \mu_y=0, \ \mu=\mu_z$$
 (14.1.3) where, $\mu^2=\mu\bullet\mu$.

Note that the μ_{z} is not the z component of μ_{z} , it is the whole of μ . The Spin μ aligns with the direction of the Stern-Gerlach Magnetic Field B. Stern-Gerlach Device cannot be used to obtain the x, y, and z components of a Spin Magnetic Moment μ .

The external magnetic field **B** can be in any direction. The torque \mathbf{T} brings $\mathbf{\mu}$ in alignment with the external magnetic field **B** making the angle between **µ** and **B** to zero, θ =0. In other words, immediately after the arrival of an atom at an external magnetic field **B**, the Spin Magnetic Moment $\mathbf{\mu}$ of the Atom aligns with the external magnetic field **B** bringing the angle between them to zero. $\theta=0$. Since the external magnetic field **B** is strong, the alignment of Atom's Spin Magnetic Moment μ with **B** takes place immediately upon the arrival of the atom in the magnetic field B. The alignment is so immediate that it is as if the atom has arrived already aligned with the external magnetic field.

Immediately after the arrival of atom at the external magnetic field, we have,

θ=0	(14.1.4)
$V(z)=-\mu B_z$	(14.1.5)

where, V(z) is the Potential.

Once μ has aligned with **B**_z, since μ is independent of z, we have,

 $\partial V(z)/\partial z = -\mu \partial B_z/\partial z$ (14.1.6)This potential gradient generates a drift force F(z) for the atom,

F(z)=-∂V(z)/∂z	(14.1.7)
rom Egns. (14.18) and (14.19), we have.	

F 9), ' $F(z) = \mu \partial B_{z} / \partial z$ (14.1.8)For a neutral Atom, there is no force on the Atom

that is perpendicular to the velocity of the Atom, and hence the Atom does not have a circular motion. The force F(z) will be a drift force on the Atom in +z direction (along the External Magnetic Field, +B direction) or -z direction (against the External Magnetic Field, -B direction). It drifts the atom in +z direction (along the External Magnetic Field, +B direction) or -z direction (against the External Magnetic Field, -B direction) depending on whether µ is positive (μ =+ β) or negative (μ =- β), where β is a constant given in Eqn. (14.3). The β depends on the atomic number of the Atom. The β also varies with the ejection of an electron by the Atom.

There is also one important thing to notice here. The alignment torque τ is proportional to B_z while the drift force F(z) is proportional to the spatial gradient, $\partial B_{z}/\partial z$. We also know that,

$B_z >> \partial B_z / \partial z$	(14.1.9)
As a result,	

т>>F (14.1.10)Therefore, as soon as an Atom enters the Stern-Gerlach Magnetic Field (SGMF), 0 becomes zero, $\theta=0$, or the Spin Magnetic Moment (SMM) of the Atom immediately aligns with the magnetic field B before any drift takes place. The alignment of the orientation of the Atom with the Stern-Gerlach Magnetic Field (SGMF) takes place immediately at the arrival of the Atom at the SGMF, it is as if the Atom has arrived already aligned with the SGMF that almost no drift takes place during the alignment. The drift in the Stern-Gerlach Experiment is insensitive to the orientation of the atom. Stern-Gerlach Device does not care about the Atom's prior orientation.

We have already seen that the Spin Magnetic Moment (SMM) μ is given by,

$$\mu = \pm \beta$$
 (14.1.11) where, β is a constant.

Hence, the drift force F is given by,

 $F=\pm\beta \partial B_{7}/\partial z$ (14.1.12)Atoms with the drift force $F=+\beta\partial B_{z}/\partial z$ will drift in one direction giving Spin-Up beam (nothing prevents you calling this as Spin-Down), and the atoms with drift force $F=-\beta \partial B_{\tau}/\partial z$ will drift in the opposite direction giving Spin-Down (you can equally call this as Spin-Up) beam. Since the starting orientation and $\beta \partial B_z / \partial z$ are the same for all the atoms in the Spin-Up beam, they all converge at one point on the screen. Similarly, since the starting orientation and $-\beta \partial B_z/\partial z$ are the same for all the atoms in the Spin-Down beam, they all converge at another single point on the screen in the opposite direction.

Lemma:

The amount of ±drift in the Stern-Gerlach Experiment is insensitive to the orientation of the Spin Magnetic Moment of an Atom.

Lemma:

Spin-Up and Spin-Down are observer labels for mutually opposite directions chosen by an observer by the choice of the direction of the Stern-Gerlach Magnetic Field (SGMF): they are not states of a Spin. They are directions forced by the SGMF on the spin of an Atom while they are within the SGMF. The direction of the Spin of an Atom will not be retained by an Atom if SGMF when the Atom leaves the SGMF. The directions of a spin of an Atom or charge particle are not fixed directions in space.

Lemma:

Stern-Gerlach Device cannot be used to obtain the x, y, and z components of a Spin Magnetic Moment. The x, y, z components of a Spin Magnetic Field cannot be obtained by using a magnetic field since it is the whole Spin that aligns with a magnetic field, not the component of the Spin in the direction of the Magnetic field.

If we align the Direction of the Stern-Gerlach Magnetic Field **B** with the x-axis, it is the whole Spin Magnetic Moment μ that aligns in the direction of the Magnetic field **B**. If we align the Direction of the Stern-Gerlach Magnetic Field **B** with the y-axis, it is the whole Spin Magnetic field. If we align the Direction of the Stern-Gerlach Magnetic Field **B** with the z-axis, it is the whole Spin Magnetic Field **B** with the z-axis, it is the whole Spin Magnetic field **B**. It is not possible to obtain the components μ_x , μ_y , and μ_z using the Stern-Gerlach Device or any external Magnetic Field.

B. Beam Splitting in the Stern-Gerlach Experiment

In the Stern-Gerlach experiment, the number of atoms on both beams are the same. As we are going to see here, this should be the case. Now, the question is "what makes the number of atoms in two split beams exactly the same?" We already know the answer to this.

The torque $\tau=\mu B_z Sin(\theta)$ aligns the Spin of an Atom with external magnetic field, where $B=B_z$. External magnetic field **B** is in the direction of the z-axis. The force $F(z)=\mu\partial B_z/\partial z$ drifts the atom in the direction of the magnetic field or against it in the Stern-Gerlach device.

If all the atoms in a beam has random orientations and If it is just the torque \mathbf{T} that aligns atoms with the Stern-Gerlach magnetic field \mathbf{B}_z before they are drifted by the drifting force F that splits the incoming beam of atoms into Spin-Up beam and Spin-Down beam, any atom with $\theta \neq \pm \pi$ will be rotated to align its Spin Magnetic Moment μ with \mathbf{B}_{z} and drifted in $+\mathbf{B}_{z}$ direction as Spin-Up while only the atoms approaching with orientation $\theta = \pm \pi$ get drifted in $-\mathbf{B}_{\tau}$ direction without being subjected to any rotation as Spin-Down. Since number of atoms with initial orientation $\theta \neq \pm \pi$ is much more than the number of atoms with $\theta = \pm \pi$, most of the atoms must have ended up in the Spin-Up (+B_z direction) beam and only a very few Atoms would have ended in Spin-Down(-Bz direction) beam. But this is not what had been observed in the Stern-Gerlach experiment. The number of atoms in the Spin-Up beam is the same as the number of atoms in the Spin-Down beam. The brightnesses of the two dots on the screen are the same

As we have shown earlier, the Number of atoms in both Spin-Up and Spin-Down are the same for a very good reason. Although the atoms are electrically neutral, they are like little compasses, free to orient magnets due to the Spin Magnetic Moment μ . When atoms, which are also free-to-orient magnets, are next to each other, they become magnetically coupled with each other naturally so that the neighboring Spins are in opposite directions. If you change the orientation of one atom, you are changing the orientation of the whole population due to the domino effect. This orientation adjustment takes place when just the first atom enters the Stern-Gerlach magnetic field, even though all the atoms, except the first Atom, are outside the Stern-Gerlach magnetic field.

When two compasses are next to each other, their polarities align (Up, Down) Z or (Down, Up) positions, but never in (Up, Up) *P* or (Down, Down) \swarrow positions, unless an external magnetic is present and both particles enter the magnetic field separately with no magnetic coupling. If we have a beam of 2n particles, n particles will have their Spin Magnetic Moment align in the Spin-Up 7 orientation while the other n particles will be aligned in the completely opposite direction Spin-Down ∠ alternatively in the absence of an external magnetic field. If all the Spin-Up particles are aligned at an angle θ to the vertical +z direction, all the Spin-Down particles will be aligned at an angle $\theta \pm \pi$ to the +z direction or completely opposite to the Spin-Up direction. The angle θ may vary depending on the number of atoms involved. In addition, no two adjacent atoms in a beam have the same orientation since the opposite polarities attract and the same polarities repel.

So, if we have a beam of atoms, the atoms will be magnetically coupled. No two neighboring atoms will have the same polarity. All the atoms in a beam will be in one of two orientations, either Spin-Up \nearrow or Spin-Down \checkmark . Number of atoms in Spin-Up \nearrow orientation will be the same as the number of atoms in the Spin-Down \checkmark orientation.

Let us consider the different stages of a beam of atoms in the Stern-Gerlach experiment:

1) Free-to-orient beam of atoms without any external magnetic field.

The orientation of Spin-Up atoms is θ to the vertical z axis. The orientation of Spin-Down atoms is $\theta \pm \pi$ to the vertical z axis. This is due to the magnetic coupling of the atoms in the beam.

2) When the First Atom in the beam enters the Stern-Gerlach Magnetic Field **B**.

... *NAM* all outside [¹ Stern-Gerlach Field **B**]

... $\downarrow\uparrow\downarrow\uparrow\downarrow\uparrow\downarrow\uparrow\downarrow$ rest is outside [\uparrow First Atom Entered **B**] When the first atom enters the Stern-Gerlach Magnetic Field **B**, its Spin Magnetic Moment **µ** immediately aligns with the Stern-Gerlach Magnetic Field **B** before any other atom enters the Stern-Gerlach Magnetic field. It is immediate because the Stern-Gerlach Magnetic field is strong and hence the alignment torque is strong. Once the first atom is aligned with the Stern-Gerlach Magnetic Field **B**, the rest of the atoms that are outside the magnetic field in the beam follow suit since they are magnetically coupled and θ become zero.

So far, although only one atom has entered the Stern-Gerlach Magnetic Field **B** and the rest of the atoms are outside the Stern-Gerlach Magnetic Field **B**, the atoms in the beam are now aligned with or against the Stern-Gerlach Magnetic Field **B** due to magnetic coupling between Atoms in the beam. Since the nearby atoms must have opposite orientations, half of the atoms in the beam align with the Stern-Gerlach Magnetic Field **B** while the other half of Atoms orient against the Stern-Gerlach Magnetic Field **B**.

It is as though all the atoms are arriving pre-aligned with or against $(...\downarrow\uparrow\downarrow\uparrow\downarrow\uparrow\downarrow\uparrow)$ the Stern-Gerlach Magnetic Field \circ **B**.

3) $|B| >> |\partial B/\partial z|$. If $\partial B/\partial z > 0$.

- Half of the atoms in the beam with ↑ Spin-Up orientation deflect to +z direction.
- Half of the atoms in the beam with ↓ Spin-Down orientation deflect to -z direction.

4) One beam of Silver Atoms has split into two beams with equal number of Atoms.

- Atoms in the Spin-Up ↑ beam remain at Spin-Up ↑ orientation as long as the Atoms in the split beam are within the Stern-Gerlach Magnetic Field B.
- Atoms in the Spin-Down ↓ beam also remain in the Spin-Down orientation as long as the Atoms in the split beam remain in the Stern Gerlach Magnetic Field B.

5) If you rotate the Stern-Gerlach Magnetic Field $\mathbf{B}=\mathbf{B}_z$ on the yz plane, i.e. the plane orthogonal to the direction x of the beam, you will be turning the Spin-Up and Spin-Down beams by the same angle. Because, when you rotate one atom in a beam, you are rotating all the atoms in the beam; this is due to the magnetic coupling of the atoms in a beam of atoms. When you rotate Stern-Gerlach Magnetic Field (SGMF) on the yz plane, you are rotating not only the Atoms within the Stern-Gerlach Device, but also all the Atoms in the beam outside the SGMF waiting to enter the SGMF.

Lemma:

When you rotate one Atom in a beam you are rotating all the Atoms since they are magnetically coupled by Spin Magnetic Moment.

C. Sending Output of One SGMF into Another SGMF of the Same Orientation (in-Phase)

When we send a beam of Atoms into a Stern-Gerlach Magnetic Field, the beam will split into two separate beams of equal number of Atoms, Spin-Up and Spin-Down. The Spin-Up beam contains Spins of all the atoms oriented in the direction of the SGMF as long as they are within the SGMF. The Spin-Down beam contains the spins of all the atoms aligned against the direction of the SGMF as long as they are within the SGMF as long as they are within the SGMF. Now, let us send the Spin-Up beam from the SGMF into another second Stern-Gerlach Magnetic field that has the SGMF of the same Orientation as the first SGMF. We do it while the Atoms are still under the influence of the first SGMF before they enter the second SGMF.

In this case, Atoms in Spin-Up orientation relative to the first SGMF remain as Spin-Up relative to the second SGMF also since two devices in series are in-phase. When all the Atoms are still in the first SGMF, all the Atoms in the Spin-Up split beam remain in the same orientation; the same is the case for the Spin-Down split beam. Let us consider both Spin-Up and Spin-Down beams separately:

1) Spin-Up Beam from the first SGMF Sent into a second SGMF Placed in series and in-Phase

Here, we are sending the Spin-Up beam from the output of the first Stern-Gerlach Device into a second Stern-Gerlach Device with the same Magnetic Field orientation as the first SGMF. In this case, all the atoms are pre-oriented with the Second SGMF, θ =0. Atoms enter the second Stern-Gerlach Magnetic Field with the same orientation as its Magnetic Field. As a result, there is no alignment torque.

Placing another Stern-Gerlach Device in series with the same Magnetic Field orientation as the first Stern-Gerlach Device (+**B** direction, z axis) or in phase, along the direction of the beam (x axis) is equivalent to the extension of the range of the first Stern-Gerlach Magnetic field (+**B** direction, z axis) along the direction of the beam (x axis). As a result, all the atoms will be drifted by the same force in +z direction (+**B** direction), Spin-Up relative to the second SGMF, and hit the screen on the same side. There is no beam splitting when all the Atoms enter a Stern-Gerlach Device in a forced orientation that is the same as the SGMF. It is just the continuation of the positive deflection through the second SGMF.

2) Spin-Down Beam from the first SGMF Sent into a Second SGMF Placed in Series and in-Phase

If the Spin-Down split beam from the first SGMF is sent through a second Stern-Gerlach Magnetic Field that has the same orientation as the first SGMF, all the atoms enter the second SGMF pre-aligned against the second SGMF, (-**B** direction) θ =180°. As a result, there is no alignment torque. All the atoms will be drifted by the same force in -z the direction (-B direction), Spin-Down relative to the second SGMF, and hit the screen on the same side. There is no beam splitting when all the Atoms enter a Stern-Gerlach Device under forced orientation against the SGMF by the first SGMF. It is just a negative deflection. This is expected since placing two Stern-Gerlach Devices in series and in-phase is simply equivalent to the extension of the first Stern-Gerlach Magnetic Field.

D. Output of first SGMF Sent into a Second SGMF in Series, but with different Orientation (Out of Phase)

Here, we are sending a Spin-Up beam from the output of the first SGMF into a second SGMF that is oriented at a non-zero angle to the first SGMF. In this case, placing a second SGMF along the direction of the beam next to the first SGMF is not the same as the extension of the first SGMF. First SGMF is at a non-zero angle to the second SGMF. Now, the Atoms must leave the first SGMF to enter the second SGMF since the magnetic fields are out of phase. When the

Atoms leave the first SGMF, the Atoms in Spin-Up beam are no longer Spin-Up since the attraction of the opposite polarities and the repulsion of the alike polarities take over. Atoms leaving the first SGMF are magnetically coupled so that neighboring Atoms are of opposite orientation. As soon as the first Atom enters the second SGMF, it orients itself with the second SGMF. Since the first Atom is magnetically coupled to the second Atom, the second Atom enters with the opposite orientation, i.e. against the second SGMF. All the Atoms at odd positions, 1, 3, 5, ... enter with the orientation of the second SGMF. All the Atoms at even positions, 2, 4, 6, ... enter the second SGMF with the orientation against the second SGMF. As a result, Atoms with the orientation toward the second SGMF will be drifted towards the second SGMF (+deflection, Spin-Up), while the Atoms with the orientation against the second SGMF are drifted against the second SGMF (-deflection, Spin-Down) resulting a beam split just like the first Stern-Gerlach Device did when the original beam entered.

Spin-Up from the second SGMF has nothing to do with the Spin-Up from the first SGMF; they are completely unrelated. Spin-Up and Spin-Down directions from the first Stern-Gerlach Device are different from the Spin-Up and Spin-Down from the second Stern-Gerlach Device. Spin-Up and Spin-Down directions from a Stern-Gerlach Device are not properties of an Atom. They say nothing about the properties of an Atom. The Stern-Gerlach Experiment just implies that the Atoms are magnets, nothing more.

The setting of the Spin by a Stern-Gerlach device is temporary. As soon as atoms leave the Stern-Gerlach Device, there is no magnetic field to keep the Spin of the Atoms in one direction. In the absence of an external magnetic field, the magnetic coupling between atoms brings the Spins of the neighboring atoms one against the other.

Property:

Spin-Up beam means that the orientation of Atoms is toward the SGMF as long as the beam is within the SGMF. Spin-Down beam means the orientation of the Atoms are against the SGMF as long as the beam is within the SGMF. Once the beams leave the SGMF, no two neighboring Atoms have the same orientation due to magnetic coupling, and hence the orientation of the Atoms in the beams will be the same as the orientation of the Atoms in the original beam before entering the SGMF. Nothing more to it.

When the orientation of the magnetic fields of the two SGMFs are at a non-zero angle, the Spin-Up beam from the first SGMF splits into two separate beams by the second SGMF. The new split beams are again Spin-Up and Spin-Down relative to the second SGMF. Spin-Up is always in the direction of the SGMF; it has nothing to do with the original orientation of the Atom.

If we send the Spin-Down beam from the first SGMF into a second in series but out of phase SGMF,

the beam will split into two beams, Spin-Up and Spin-Down relative to the second SGMF. In this case, all the Atoms at odd positions, 1, 3, 5, ... will end up in Spin-Up beam while all the Atoms at even positions, 2, 4, 6, ... will end up in Spin-Down beam, just like sending Spin-Up beam from one SGMF into a second SGMF that is in series and out of phase. Spin-Up and Spin-Down are always relative to the direction of the SGMF. This Spin-Up or Spin-Down of an Atom when the atom is within a Stern-Gerlach Device has nothing to do with or says nothing about the state of the Atom or the properties of the Atom.

E. Once all the Atoms are Out of the first SGMF, Atoms are sent as Input to second SGMF placed at an Arbitrary Orientation

In this case, Spin-Up and Spin-Down Split beams are now completely out of the First SGMF. There is no external magnetic field to keep them in a forced orientation. As a result, the attraction of the opposite polarities and the repulsion of the alike take over. Once all the Atoms in a split beam are out of the influence of external magnetic field, Atoms in Spin-Up split beam are no longer in one orientation, and the Atoms in Spin-Down split beam are no longer in the opposite orientation. Neighboring atoms in any split beam will have opposite polarities in the absence of an external magnetic field due to magnetic coupling. Spin-Up split beam remains as Spin-Up only when the Atoms in the split beam are still in the SGMF. Spin-Down split beam remains as Spin-Down split beam as long as Atoms in the Spin-Down split beam remain in the SGMF.

Before any Atom enters the Second SGMF, there is no external torque forcing the atoms to orient in a certain direction since all the Atoms are now out of the influence of the First SGMF. Before any Atom enters the Second SGMF, the external magnetic field **B=0**. Every atom is free to orient itself. So, two Split beams are subjected to the natural tendency of attracting the opposite polarities and repelling the alike polarities. As a result, no two neighboring atoms in a split beam will have the same polarity. Half of the atoms in a split beam will be oriented in one direction, Spin-Up or \nearrow while the other half will be in opposite direction, Spin-Down or \checkmark .

These Spin-Up and Spin-Down directions have nothing to do with the Spin-Up and Spin-Down directions of the First SGMF. Since a split beam of atoms is now completely out of the First SGMF, no two neighboring atoms in a beam will have the same orientation. Both Split beams will be just like the original beam except they have half the number of atoms, and different θ , where θ is an angle between Up orientation with an observer defined z axis or any axis. Split beams are no longer Spin-Up and Spin-Down beams when they are out of the influence of the Stern-Gerlach Magnetic Field. There is no difference between the two Split beams once they are completely out of a SGMF, except that the orientations of Atoms in one split beam is the mirror image of the other.

If you send any of these split beams now through another Stern-Gerlach Device, that beam will be split into two separate Spin-Up and Spin-Down beams, just like what happened to the original beam when it was sent into a SGMF. New Spin-Up direction and Spin-Down direction are relative to the latest SGMF.

Spin-Up and Spin-Down are not properties of a particle. Particles do not have Spin-up or Spin-Down states. Particles in the Spin-Up beam are Spin-Up as long as the beam is in the SGMF. Similarly, particles in the Spin-Down beam are Spin-Down as long as the beam is in the SGMF. Once both split beams are out of the second SGMF, they are no longer Spin-Up or Spin-Down split beams. The orientations of the Atoms in each split beam will be such that two neighboring Atoms are of opposite orientation due to the magnetic coupling between the Atoms; that is what happens naturally in the absence of an enforcer. In the absence of an enforcer, Atoms are free naturally to behave in the way that free Atoms do, just like kids out of sight of parents or teachers or even adults out of sight of their bosses or spouses.

Lemma:

The Spin-Up split beam is no longer Spin-Up when the split beam is out of the Stern-Gerlach Device. The Spin-Down split beam is no longer Spin-Down when the split beam is out of the Stern-Gerlach Device. When split beams are out of SGMF, two neighboring Atoms in a split beam are of opposite orientations due to magnetic coupling between the Spin Magnetic Moments of the Atoms.

F. Facts of the Stern-Gerlach Experiment (Fact of the Matter)

The result of the Stern-Gerlach experiment can be explained using natural magnetic coupling. There is no Spin Quantization. There is no Spatial Quantization of a Spin Magnetic Moment. You cannot prepare an Atom to be Spin-Up or Sin-Down. You can only force an Atom to be at the direction of an External Magnetic Field or against it as long as the Atom remains in the External Magnetic Field. As soon as an Atom is out of the SGMF or the External Magnetic Field, that forced orientation is lost.

The orientation of the Spin Magnetic Moment of an atom is not a state of an atom. The orientation of Spin Magnetic Moment of an atom is determined by external factors and depends on the rest of the neighboring atoms in the population. Neighboring Atoms are magnetically coupled. Change the orientation of one single atom, you are changing the orientation of the entire population of the atoms even in the absence of an external magnetic field.

What happens in the Stern-Gerlach Experiment is completely a deterministic process. Probability plays no role here. An atom can arrive at SGMF at any orientation. As soon as an Atom enters the SGMF, it orients itself toward the Stern-Gerlach Magnetic Field due to the alignment torque. The only exception is that any atom arriving with the orientation against the SGMF does not undergo alignment since the torque is zero at that orientation. If atoms are arriving with no magnetic coupling, almost all the atoms will be deflected toward the SGMF as Spin-Up. Only the arriving atoms with the orientation exactly opposite to the direction of the SGMF, which is very rare, will deflect as Spin-Down. If there is no magnetic coupling between the arriving atoms, almost all the atoms will be on Spin-Up beam, almost none at Spin-Down beam. There is no 50-50 split without magnetic coupling of atoms. A lonely Atom almost always ends up as Spin-Up. The first atom of any beam of atom into the Stern-Gerlach device will end up as Spin-Up unless it enters the device with a spin against the SGMF. Spin-Up or Spin-Down given by the SGMF has nothing intrinsic to the Atoms.

Lemma:

First Atom of any beam to Stern-Gerlach Device is always deflected towards the SGMF as Spin-Up, except when the orientation of the first Atom is exactly opposite of the direction of the SGMF, in which case it is Spin-Down.

The magnetic coupling between neighboring Atoms in a beam of Atoms is unavoidable and as a result a beam of Atoms will split into two beams of equal number of atoms by a Stern-Gerlach Device. The orientation of atoms after the split of the beam is a forced orientation by the Stern-Gerlach Magnetic Field; it is not a projection of the orientation of the atoms onto the direction of the SGMF when they arrive at the SGMF.

When all the atoms in the split beams are out of the influence of the SGMF, the magnetic coupling between atoms will take over and the atoms will reorient themselves so that no two neighbors have the same orientation due to the attraction of opposite and the repulsion of the alike. Atoms in the SGMF are just like kids under parental or teacher supervision. Once kids are out of sight of the parents or teachers, they do whatever is natural for kids and have no memory of parent or teacher advice.

The orientations, Spin-Up and Spin-Down of Atoms in the split beams are not the projections of the original orientation of the Spin Magnetic Moment of the atoms on the Stern-Gerlach Magnetic Field (SGMF). Spin-Up and Spin-Down are forced orientations by the SGMF. You cannot maintain the orientation of the Atoms in the split beams as Spin-Up (aligned with SGMF) and Spin-Down (aligned against SGMF) without the continued presence of SGMF. You cannot generate Spin-Up atoms by blocking the Spin-Down beam.

There is no such thing called a Spin-Up beam. Atoms in the Spin-Up beam remain at Spin-Up position as long as they are in an external Magnetic Field. In the absence of an external Magnetic Field, no two neighboring atoms can have the same Spin orientation due to the attraction of opposite and the repulsion of the alike.

Do not think you can make Spin of any desired direction simply by sending it through Stern-Gerlach

Device oriented in that desired direction; that is not going to happen. If you have done that in carrying out experiments, you may want to re-evaluate the conclusions; those are false conclusions. It is we who define Spin-Up or Spin-Down, not nature. Atoms or charged particles do not come as Spin-Up or Spin-Down. Spin is bipolar. Bipolar Spins do not come in monopolar Spin-Up and Spin-Down quanta. Spins cannot be quantized, cannot come in quanta.

G. Q-Bit is Simply an Atomic-Bit

If your Q-Bit gismo is working, it is not for the reason what you think it is. If it is working, it has nothing to do with Quantum Mechanics. You have some explaining to do because Spin-Up and Spin-Down are not states of a particle. Spin-Up and Spin-Down are not in a superposition since they are non-separable. Spin is Bipolar. A Bipolar Spin has no unipolar Up and Down states. Spin-Up and Spin-Down are non-separable since there are no Spin monopoles. Spin-Up and Spin-down are Spin Bi-poles. Spin-Up has no existence without Spin-Down. Spin-Down has no existence without Spin-Up. Spin-Up and Spin-Down are observer dependent. One person's Spin-Up is another person's Spin-Down. One person's Spin-Up at one location can be a Spin-Down for the same person at a different location.

If your Q-bit gismo is working, it is because of the Spin Magnetic Moment of an Atom. It has nothing to do with Quantum-Spin, Quantum-Bits, or Quantum Mechanics. It may be a result of an implementation blunder. You cannot use Polarization of light to simulate Spin of an Atom or a charge particle. Polarization of light is not a Spin. Polarization is Unipolar. Spin is Bipolar.

A Q-bit based on the Polarization of light is not a Quantum bit; it is an Optical-Bit (O-Bit). Don't try to simulate the Spin of an Atom using the Polarization of light. Polarization of light is not a Spin. Spin Magnetic Moment of an Atom or a charge particle is static. Propagating Magnetic Field is not a Spin. Light has no Spin Magnetic Moment.

H. Polarization of Light is Not a Spin

Every magnetic field is not a spin. Every spin does not generate a magnetic field. The spin of a neutral particle does not generate a magnetic field and hence has no Spin Magnetic Moment. The Spin Magnetic Moment of an Atom or a charge particle is static. A propagating Magnetic Field of an electromagnetic wave is not a Spin. The static Spin Magnetic Moment cannot be simulated by the magnetic field of light. Light does not have a spin.

Spin is Bipolar. Polarization of light is unipolar. The magnetic field of light is not a spin. Polarization of light is not limited to Horizontal and Vertical polarization. Polarization of light can be at any direction or at any angle. A particle cannot be both Up and Down simultaneously. Spin-Up and Spin-Down cannot be in a superposition since Spin is Bipolar. However, a beam of light can have both Vertically and Horizontally

polarized waves simultaneously.

Horizontal and Vertical Polarization of light is not a spin. Polarization of light is not the Spin. Magnetic Field of light is not a spin. Every magnetic field is not a result of a spin. Polarization of light is not bipolar whereas the Spin of an Atom or a charge particle is bipolar. Polarization is not limited to Horizontal and Vertical polarization. The polarization of light does not depend on the observer. Vertical polarized light is vertically polarized for any observer irrespective of the position of the observer. Spin of a particle can either be Up or Down relative to an observer and depends on the position of the observer.

Vertically and Horizontally polarized light cannot represent the Spin-Up and Spin-Down particles. Polarization of light cannot be used to simulate the Spin of particles in experiments. Horizontally and Vertically polarized light cannot be used to demonstrate the properties of Spin of particles. You can neither set nor measure the Spin of a particle. Bell's theorem does not hold since the Spin of a particle is not a state of a particle. The orientation of the Spin of a particle is not a state of a particle. The direction of Spin of a particle only exists relative to observers.

Lemma:

If you have carried out experiments thinking that you have set a particle Spin-Up or Spin-Down by using Stern-Gerlach Device, your experiment is an experimental blunder at its very inception since Spin-Up and Spin-Down set up by Stern-Gerlach Device or any other Device are always volatile.

Lemma:

Setting the Spin of a particle to a desired direction permanently is not possible. There are no non-volatile Spin-Up and Spin-Downs. Bipolar spins have no unipolar Spin-Up or Spin-Down.

/. Stern-Gerlach Device is Not Probabilistic

There is no Probability involved in the Stern-Gerlach Device. Everything is deterministic. There is no Schrödinger equation at work here. There is no Wave Function at work here. There is no human fabricated collapse of a Wave Function here. There is no Berlin-Hagen (Copenhagen) interpretation at work here. Wavefunction collapse is utter nonsense. There is no multi-World [3] Crafted Prophecy (CRAP) here. The Schrodinger equation is nothing more than the time derivative of the plane wave subjected to the energy and boundary constraint [7,13]. Particles do not behave as waves. Waves are not particles. The so-called Schrodinger equation, which had been strangely and for no apparent justifiable reason touted as the greatest discovery of the century, is nothing more than the time derivative of the plane wave equation under an invalid assumption that the mechanical energy e of a particle is quantized as e=hf.

The Planck relationship e=hf cannot hold since frequency has no existence without amplitude, $e\neq$ hf.

Frequency of a wave has no energy. Light has no energy. Light has no momentum. It is only that light can generate kinetic energy on a charge particle. Even though light has no momentum, light can generate momentum on charge particles. Light is a Momentum Generator. The interaction of light with a particle is not a collision of momenta. Light has no effect on electrically neutral particles. Light generates momentum on charge particles.

Everybody was intrigued by the Schrodinger equation since Schrodinger presented it without mentioning why he put jħ in front of operator $\partial/\partial t$. No surprise there since everybody was also equally intrigued by the broom-riding in Harry-Potter books; Schrodinger equation became a big hit for the same reason why the Harry-Potter series became a big hit. Physicists seem to have a craving for mystique.

Representation of observables as eigenvalues of operators is not possible since eigenvalues are not unique. Representation of observables must be unique. Matrix Operators cannot represent the commutative relationship in Quantum Mechanics. Matrix Operators of infinite dimension cannot represent operators in Quantum Mechanics since infinite matrix operators are not Hermitian and have no eigenvalue representation.

If the x, y, and z components of the angular momentum operator are replaced by Pauli's 2D spin operators, it will no longer be an Angular Momentum Operator. Spin of an Atom or charge particle cannot be represented by Pauli's 2D matrix operators. Spin cannot take place in 2D. Up and Down Spins are not orthogonal and cannot be represented by orthogonal vectors. Up and Down Spins are perfectly correlated negatively. Spins are bipolar and there are no unipolar Up and Down spins. Bipolar Spins cannot have unipolar Up and Down.

Light has no Spin. Every magnetic field is not a spin. Magnetic field of a propagating wave is not a spin. Spin magnetic field is static. Polarization of light is not a spin. Polarization of light is not bipolar. Spin of an atom or charge particle is bipolar. Anybody who has come across the inductance or capacitance of an electrical circuit with some attention might have realized instantly what Schrodinger had done and its triviality, yet it went unnoticed.

J. A wave is not a probability distribution

Probability distribution is for the past. Normalized square of a propagating wave that contains zeros cannot represent a probability distribution for position and momentum. The position and momentum of a particle cannot be uncertain. A wave does not satisfy the conditions required for a probability distribution. Probability distribution for position and momentum must be greater than zero for the entire range. Probability distribution for position and momentum cannot have zeros. The area under probability distribution must be unity for the entire range of the variable. You cannot normalize the area under a wave to be unity when a wave is in time progression or position progression. The change of position and momentum cannot take place without time progression.

You cannot normalize a wave by normalizing it within a wavelength. You can square a wave and normalize it within a wavelength, but that does not represent a probability distribution for the entire range. The square of the waves, $(1/2\pi)^{1/2} \exp[(j/\hbar)\mathbf{p} \cdot \mathbf{r}]$ and $(1/2\pi)^{1/2} \exp[(-j/\hbar)et]$ are not a probability distribution since they are only normalized within a range of a wavelength and a time period. If the wave function for the Hamiltonian H=eI cannot be a probability distribution, the wave function for a general Hamiltonian H cannot be a probability distribution since the wave function for a Hamiltonian H is the superposition of plane waves of different frequencies under the assumption that e=hf. Planck's energy relationship e=hf is invalid since frequency has no existence without amplitude. Planck's Spectrum is cavity dependent. Blackbody Spectrum cannot be cavity dependent. Frequency has no energy. It is only that the electromagnetic frequency can be converted to the energy of a charge particle.

For a wave to be a probability distribution, the area covered by the wave must be unity for the entire range. Wave must be normalized for the entire range, but this cannot be done for a wave that is in propagation. Propagating waves cannot be normalized. Waves have no existence without propagation. Probability distribution cannot propagate. A function to be a probability distribution, that function must be static, the area under the curve is unity, and has no zeros. Propagating wave cannot be a probability distribution. Probability function has no existence unless it is normalized for the entire range. Propagating waves cannot be normalized for the entire range. Propagating wave is subjected to attenuation and frequency shift. An electromagnetic wave is not a probability of finding a light particle or photon. Light is not particles. Particles are not waves. Einstein's photon derivation is meaningless since light has no entropy.

Electromagnetic waves are not probability distributions. You cannot make the area under the square of an electromagnetic wave to be unity since it is in propagation. Wave does not exist in the absence of propagation. Nature does not normalize. You can normalize a wave only within a wavelength, not for the entire range. Being unable to be normalized within the entire range of a propagating wave, and being unable to be free of zeros, a propagating wave can never be a probability distribution.

Lemma:

No propagating wave can be normalized for the entire range. No propagating wave can be free of zeros. As a result, waves are not probability distributions of position and momentum. Position and momentum of a mass must be unique; cannot be uncertain.

Lemma:

The position of a particle cannot be changed to

another position without passing all the positions in between. A particle cannot disappear from one position and reappear in another position.

Just because one assumes particles to be waves does not mean they are going to be waves. The Double-Slit experiment does not demonstrate anything about particles being waves [2]. Bright spots on the phosphor screen of the Double-Slit experiment are the peaks of the electromagnetic waves resulting from the stopping of charge particles at the Double-Slit barrier. The use of the Double-Slit Experiment to substantiate de Broglie conjecture of particles behaving as waves is simply a Double-Slit Blunder [2].

K. Noteworthy Highlights:

- Every Atom, whether it is electrically neutral or not, has a Spin Magnetic Moments (SMM).
- The Spin Magnetic Moment (SMM) of an Atom varies with the ejection of electrons by the Atom. The spinning frequency of an Atom changes with the ejection of electrons from an Atom or gaining electrons by an Atom.
- Orientations of electrically neutral atoms in a population are not random since they are magnetically coupled by Spin Magnetic Moment (SMM) of Atoms.
- Stern-Gerlach Experiment is insensitive to the orientation of the Spin of an atom.
- When an Atom passes through Stern-Gerlach Magnetic Field, the original orientation information is completely lost; it is irrecoverable. The orientation of the Spin Magnetic Moment is not a state of a particle.
- Stern-Gerlach Device enforces its own direction of the magnetic field on the Spin of an Atom; it is a dictator. SGMF is an enforcer, not a measurer of the components of the Spin orientation of an Atom or a charge particle. The direction enforced by the Stern-Gerlach Device on the Spin of a particle is volatile, not permanent.
- The setting of the Spin of a particle toward a desired direction permanently is not possible.
- You cannot obtain x, y, or z components of the Spin of an atom using Stern-Gerlach device. Stern-Gerlach device makes the total Spin of an Atom align with its Magnetic Field. What is aligned with an external magnetic field is the total Spin of an Atom or charged particle, not the component of the Spin in the direction of the external magnetic field.
- Wave is not a probability distribution since a propagating wave cannot be normalized for the entire range.
- A wave with zero crossings cannot be a probability distribution, it is not possible. No amount of voodoo justification can change it.
- Nature does not normalize.
- Stern-Gerlach Device neither can measure the Spin of an Atom nor can it set the Spin of a particle permanently.

- Once the Spin-Up and Spin-Down beams leave the Stern-Gerlach device, they are no longer Spin-Up and Spin-Down beams. In the absence of an external magnetic field, all the atoms in a beam cannot have the Spins in the same direction due to the magnetic coupling between the neighboring Spins.
- Once Up and Down beams leave the Stern Gerlach device, the Spins of the neighboring atoms in both beams will be mutually opposite just like the beam that entered the Stern-Gerlach device.
- Stern and Gerlach misinterpreted their experiment turning physics into voodoo physics. The Stern-Gerlach experiment is simply useless.
- There is nothing that distinguishes Spin-Up from a Spin-Down of an Atom. Spin-Up and Spin-Down are not two separate states. They exist in the same Spin, which is bidirectional.
- You cannot decompose a bidirectional spin into unipolar Spin-Up and Spin-Down. There are no unipolar Spin-Up and Spin-Down and hence a particle cannot have Spin-Up or Spin-Down states. Spin-Up and Spin-Down are observer perceptions.
- Two observers cannot be guaranteed to agree upon the direction of a Spin. Even a single observer at different locations cannot be guaranteed to agree on the direction of the Spin of an Atom or a charge particle.
- Spin Magnetic Field cannot characterize all the spins since spinning neutral particles cannot generate a Spin Magnetic Field.
- Light bursts cannot be used to simulate the spins of atoms or charge particles. Light has no spin. Polarization of light is not a Spin. Horizontal and Vertical polarization are not Spin-Up and Spin-Down. Spin-Up and Spin-Down cannot be orthogonal since there is no Spin-Up without Spin-Down and vice versa. However, there can be a Horizontal Polarization without a Vertical Polarization and vice versa. Horizontal and Vertical Polarizations are orthogonal. Polarization of light can be set and measured. Spin of a particle cannot be set or measured.
- There is no difference between Spin-Up and Spin-Down. There is no way to distinguish Spin-Up from Spin-Down. Spin-Up Atom is not distinguishable from a Spin-Down Atom. The Stern-Gerlach device does not tell you whether an Atom is Spin-Up or Spin-Down.
- You have to know the actual spinning direction of a particle and its electric charge to find the direction of the Spin Magnetic Moment. Stern-Gerlach Device cannot give you the direction of the Spin of a particle.

L. Atoms Through Stern-Gerlach

When you send an Atom through a Stern-Gerlach Device, it is almost always Spin-Up. It is only when the angle between the orientation of the Atom and the SGMF, θ =180° that an Atom is Spin-Down. Atom remains as Spin-Up or Spin Down as long as the Atom is still in the SGMF. It is only due to the magnetic coupling of the Atoms in a beam that we get two Split beams of equal number of Atoms in the Stern-Gerlach Device.

If there is no magnetic coupling between atoms, which is indeed not possible, the atoms will almost always end up as Spin-Up in the Stern-Gerlach Experiment, there will be no Spin-Down beam. You can never get ONE LONELY Atom to be Spin-Down by using Stern-Gerlach Device. It is only by using more than one Atom coupled magnetically in a beam that you can get both Up and Down deflections, Spin-Up and Spin-Down, in the SGMF.

An Atom deflected as Spin-Up or Spin-Down in the Stern-Gerlach Device no longer be at that orientation when the Atom is free of SGMF. You can never make ONE LONELY Atom to be Spin-Down using SGMF. That is why when you do the Stern-Gerlach Experiment using a beam of Atoms, the first Atom is almost always deflected as Spin-Up, unless of course the orientation of the first Atom is already against SGMF before its arrival at SGMF. If you have access to a Stern-Gerlach Device, just try it.

Lemma:

Given an Atom or charge particle, only the knowledge of the actual spinning direction of it can be used to determine the direction of the Spin Magnetic Field. The Stern-Gerlach device cannot tell you the direction of Spin of a particle. A Stern-Gerlach Device only tells you the direction of the Spin of a particle when the particle is in the Stern-Gerlach Device.

Lemma:

First Atom to Stern-Gerlach ($\theta \neq 180$) always deflected as Spin-Up. It is never Spin-Down. It is NOT possible to get ONE LONELY Atom to be Spin-Down by using Stern-Gerlach Device.

M. There is No Magic in Stern-Gerlach

Stern-Gerlach Device is not the magical device that it is proclaimed to be. It is an experimental blunder. Stern-Gerlach Device is an oracle, a magician's or fortuneteller's 8th Ball, for experimental physicists. An experimenter can see whatever the experimenter wants to see in the Stern-Gerlach Device just like the Large Hadron Collider (LHC). The LHC can be used to prove anything experimenters want to prove; all they have to do is keep colliding until they hit the jackpot.

Stern-Gerlach Device has turned Physicists into Voodoo Practitioners. How can a guy who preaches "a particle can be at multiple places simultaneously, what does not happen here happens in parallel worlds, particles are waves, waves are particles, propagation of light is relative, time is relative, mass is relative, …" be a scientist? This is not any different from the ancient, flat-earth and earth centric era, human Crafted Prophecies (CRAP) such as religious doctrines that have engulfed humanity with devastating results to this day. The real danger is that Crafted Prophecies (CRAP) make the believers blind to the facts. Logics become meaningless for them. You can see how those dark-age religious prophecies are acting out from the non-humanistic chaotic religious activities of blind and logic defying believers. Modern Physics has become logic and reality defying mysterious cult.

Noteworthy:

Stern-Gerlach Device is not a Spin Measuring instrument. If the orientation of an Atom is not against the SGMF, it forces the Atom to be in the direction of SGMF irrespective of its actual orientation. When an Atom is out of SGMF, the direction of the Spin will no longer be the direction of SGMF; Atom is totally free of SGMF enforced orientation and hence the magnetic coupling between atoms take over making the neighboring Spins one against the other.

Stern-Gerlach Device cannot be used to measure the x, y, and z components of a Spin. It is the whole vector, the whole Spin, that orients with an external magnetic field, not a component of the Spin in the direction of the external magnetic field.

Lemma:

Spin-Up and Spin-Down are volatile. An Atom has no Spin-identity or Spin-memory. We have to know the physical spinning direction of a particle and its charge to determine the Spin of a particle. The Stern-Gerlach Device cannot determine or set the direction of the Spin of a particle.

N. Properties of Stern-Gerlach

- 1. Stern-Gerlach Device is Blind to the actual orientation of the Spin of an Atom.
- 2. Stern-Gerlach Devices cannot give the Spin component of an Atom in the directions of x, y, z axes or in any other direction.
- 3. The orientation of an Atom set by Stern-Gerlach Device is volatile, not permanent.
- 4. The orientation of the Spin of an Atom or a charge particle is the direction of the external Magnetic Field it is in.
- 5. The orientation of an Atom set by Stern-Gerlach Device has no relation to the actual orientation of an Atom prior to entering SGMF.
- 6. Stern-Gerlach Device is not a Spin Measuring Instrument or Spin Setting Device.
- 7. Any Spin orientation of an Atom set by Stern-Gerlach Device only holds as long as the Atom is still within the Stern-Gerlach Magnetic Field.
- 8. Whether an Atom is deflected Up (towards the SGMF) or Down (against the SGMF) is completely deterministic. NOT Probabilistic.
- 9. You cannot make a single Atom to be Spin-Down using SGMF. It is not possible. A Single Atom is always Spin-Up in SGMF.
- 10. First Atom entering the SGMF is always deflected Up unless its orientation is not against SGMF; it is only if the Spin of an Atom is against SGMF that it is deflected Down.

- 11. It is the whole Spin Magnetic Moment that orients towards an external magnetic field, not the component of Spin Magnetic Field on the external magnetic field.
- 12. There are no Spin-Up, Spin-Down, Spin-Right, Spin-Left, Spin-In, or Spin-Out orientations. The only orientations are towards the SGMF or against the SGMF. It is the deflections towards SGMF that are defined as Spin-Up and deflections against the SGMF that are defined as Spin-Down; they are observer definitions. Spin-Up and Spin-Down have no meaning intrinsic to an Atom.
- 13. Spin-Up and Spin-Down have no meaning for someone who does not know the direction of the Stern-Gerlach Magnetic Field.
- 14. Spin-Up and Spin-Down have no meaning to anybody once the Atoms are out of the SGMF.
- 15. So, Spin-Up means whatever the direction we have chosen Stern-Gerlach Magnetic Field to be, while Spin-Down is its direct opposite. It is we who decide the direction of SGMF.
- 16. Up and Down only exist relative to observers. Up and Down are not states of a Spin. Bipolar Spins have no monopolar Up and Down. Up has no existence without Down and vice versa. Up and Down are not orthogonal.

Lemma:

What determines the orientation of an Atom is the population of the Atoms and the magnetic field of the environment the Atom is in, not the Atom itself. The orientation of an Atom is not a property of an Atom or a state of an Atom.

Lemma:

It does not matter which way SGMF is oriented, if an Atom is deflected toward SGMF, it is Spin-Up. If an Atom is deflected against the SGMF, it is Spin-Down. This SGMF defined Spin-Up and Spin-Down are volatile and have nothing to do with the actual Orientation of an Atom. The direction of Spin Magnetic Moment is not a state of a Spin. The orientation of the Spin of an Atom cannot be obtained using the Stern-Gerlach Device.

Lemma:

The Orientation of the first Atom is always Spin-Up unless it arrives pre-oriented against SGMF, in which case, it is Spin-Down. The orientation of the following Atom is always against the orientation of the previous Atom due to magnetic coupling. There is nothing more to it. There is no Spin Quantization here.

Lemma: Waves are not Probability Distributions

A wave in propagation cannot be normalized. Wave has no existence without propagation. Wave that is normalized only for a duration of a wavelength does not represent a probability distribution. For the square of a wave to be a probability distribution, the wave must have a unit area under it for the entire range, not just within a wavelength, which is impossible. For a wave to be a probability distribution of position and momentum, the wave must be free of zero crossing, which is not possible. A propagating wave cannot be a probability distribution. Schrodinger equation and Quantum Mechanics, in general, has no existence without waves being probability distributions.

Lemma:

If a particle is assumed to behave as a wave, the Position Operator cannot be the position itself. If the Position Operator of a particle is assumed to be the position itself, a particle cannot be assumed to behave as a wave. Particle wave assumption and the Position Operator in Quantum Mechanics are mutually contradictory. If the position and momentum of a particle are assumed to behave as a wave, both the Position and Momentum Operators are determined by the plane wave equation and they commute and hence Quantum Mechanics has no existence [13,7].

XV. THERE IS NO QUANTUM MEASUREMENT PROBLEM

Irrespective of the size of a particle, the state of a particle must be unique. A particle cannot be in multiple places simultaneously. A particle cannot have a speed without the change of position. The change of position cannot take place without passing of time. A particle cannot have a speed without passing of time. Speed cannot exist without the change of position. A particle cannot be at multiple places simultaneously if the speed is fixed. A particle cannot have multiple speeds if the position is fixed. A particle cannot have a speed if the position is fixed. If a particle can be at multiple positions simultaneously, it must be voodoo physics, not physics. The position and the momentum of a particle cannot be a Fourier Transform pair. The Heisenberg Uncertainty Principle is false and meaningless. The precision of position and the precision of momentum are directly related, not reciprocally. Our ignorance of the position and the momentum of a particle cannot make the position and the momentum of a particle probabilistic.

Spin-Up and Spin-Down are observer dependent and hence cannot be states intrinsic to a particle. Spin of an Atom or a charge particle cannot be measured or set using an external magnetic field. The x, y, and z component of a Spin cannot be determined by an External Magnetic Field or Stern-Gerlach device.

If a particle is assumed to behave as a wave, the Position Operator cannot be assumed to be the position itself. If the Position Operator is assumed to be the position itself, a particle cannot be assumed to behave as a wave. Quantum Mechanics is self-contradictory [13]. The assumption of a particle behaving as a wave is meaningless. Particles cannot behave as waves. The oscillation of a particle is not a wave.

The state of a particle cannot be probabilistic and cannot be represented by a wavefunction. The position and momentum of a particle cannot be assumed to behave as a wave. A wave with zero crossings cannot be turned into a probability distribution by squaring and normalizing. Natural processes do not run on probability. We use probability to analyze natural processes in the absence of the knowledge of the underlying physics of the processes. The position and the momentum of a particle cannot behave as a wave and the wavefunction is an illogical human creation [13,7]. There cannot be momentum if the position is fixed. A particle with momentum cannot have a fixed position. The position and momentum of a particle cannot be a Fourier Transform pair. The state of a particle cannot be represented by eigenvalues of operators since eigenvalues are not unique.

Finite dimensional matrix operators cannot represent Position and Momentum Operators since Matrix operators cannot satisfy the non-commutative relationship between Position and Momentum Operators that is fundamental to Quantum Mechanics, without which Quantum Mechanics has no existence. Position and Momentum matrix operators cannot be in Quantum Mechanics even when the matrix operators are of infinite dimensions since matrix operators of infinite dimensions cannot be square, cannot be Hermitian, and have no eigenvalue representation.

Operators of observables must be Hermitian and invertible. Matrix operators must be square to even consider as candidates for the non-commutative relationship in Quantum Mechanics. Yet. no matrix operators of finite dimensions can satisfy the non-commutative relationship in Quantum Mechanics. Matrix Operators have no place in Quantum Mechanics including Pauli's spin matrices. Pauli's spin matrices have no existence without the Position and Momentum Matrix Operators. Position and Momentum Matrix Operators cannot exist in Quantum Mechanics. As soon as a Spin of a particle is represented by Pauli's matrix operators, the Spin Operator can no longer be a Spin Operator and the Angular Momentum Operator can no longer be an Angular Momentum Operator.

It is only the motion of a charge that generates electromagnetic waves. Momentum of a particle is essential for a motion of a charge, but momentum alone plays no part in generating radiation. Without momentum, there will not be a chomentum, a motion of a charge. The momentum of a neutral stable particle does not generate waves. It is the change of chomentum or $\partial(qu)$ that generates the electromagnetic radiation, where q is the electric charge and u is the speed of the particle.

Since a charge has no existence without the mass of an electron, the radiation wavelength due to the stopping of charge particle of any mass M is inversely related to the chomentum qu as well as to the mass of an electron m_e , not to the mass of a particle M, where q is the charge and u is the speed. The frequency of the generated radiation electromagnetic waves is directly related to the chomentum as well as the mass of electron m_e . This inverse dependence of wavelength of a particle of mass M on the mass of electron m_e will be inherent in the proportionality constant or the radiation parameter, between the wavelength λ and chomentum qu.

Misinterpretation of this fact may be one of the reasons why some are claiming that the wavelength of a particle is inversely related to the momentum of the particle, which is incorrect. Instead, if one says that the radiation wavelength, due to the stopping of a charge particle of mass M moving with speed u, is inversely related to the momentum of an electron $m_e u$, it has some validity although it is still incorrect since momentum of a mass does not generate waves; it is chomentum, qu that generates electromagnetic radiation waves.

It is only in the case of a moving electron that the wavelength of the generated electromagnetic waves due to the stopping of an electron with momentum p is related to 1/p; these waves are not particle waves. There are no particle waves, mass waves, or momentum waves. You cannot call the electromagnetic radiation waves particle waves since they have nothing to do with particles, and all to do with charges. The change of momentum of a charge particle generates electromagnetic waves, but these waves are propagating waves that have no attachment to the particle that generated them.

The energy of a particle is Mechanical energy, and the Mechanical energy is continuous, not quantized $e\neq$ hf. As a result, the time evolution relationship of the Schrodinger equation that links to the Hamiltonian of a particle does not hold, and particles cannot be represented by wave functions. Schrodinger equation, which is simply the time derivative of the plane wave equation under the false assumption that e=hf is meaningless and has no existence.

Particles do not behave as waves, and waves are not particles [8,5,4]. Position and momentum of a particle are mutually dependent and as a result, Position and Momentum Pair cannot be a Fourier Transform pair and hence there is no Uncertainty Principle [7,13]. A particle cannot have momentum without the change of position. The momentum cannot change without the change of position. Momentum cannot even exist without changing position. Change in position is determined by the Momentum, nothing else. If the position is fixed, there will be no momentum. The position and momentum of a particle cannot behave as a wave. The existence of the momentum is an indication that the position is changing. Position cannot change without change of Momentum unless the path is linear or circular, which are not waves.

The position and momentum of a particle cannot be time invariant if the position and momentum of a particle behave as a wave. Momentum cannot exist without the change of time. Momentum cannot change without change of time, and hence the change of momentum is not time independent. Since position is determined by the Momentum, and the Momentum is time dependent, the Position is time dependent. The components of the wave function, the position and the momentum, are time dependent. You cannot separate the part of the wave function consisting of Position and Momentum, $[(1/2\pi)^{1/2} \exp[(j/\hbar)\mathbf{p} \bullet \mathbf{r}]$, as time independent since position and momentum are not time-independent; it is time dependent.

For the Position and Momentum pair to be a Fourier Transform pair, Position and Momentum must be mutually independent. Position of a particle cannot remain constant in the presence of a Momentum. If the momentum of a particle is constant, the path of the particle is either linear or circular, nothing else, not a wave. Position and Momentum are mutually dependent. For Position and Momentum to be a Fourier Transform pair, for a given position, the momentum should be able to take infinitely many values concurrently at any given instant of time independently, which is not possible for a position and momentum of a particle. Likewise, for a given momentum, the position must be able to take infinitely many positions concurrently at any given time independently, which is also not possible for a position and momentum of a particle. Position and Momentum cannot be a Fourier Transform pair since the position and the momentum are mutually dependent. As a result, Heisenberg's Uncertainty Principle is invalid [7].

Lemma:

The change of momentum is not possible without the change of position. There cannot be momentum if the position is fixed. Position cannot be fixed in the presence of a momentum. The Position and Momentum of a particle are mutually dependent, and hence the Position and Momentum pair cannot be a Fourier Transform pair. Heisenberg's Uncertainty Principle is false.

Lemma:

The position and momentum of a particle are time dependent and hence the Schrodinger equation is false.

What Uncertainty is Heisenberg talking about? There cannot be momentum if the position is fixed. The position has to change for it to have momentum. If the momentum is constant, a particle cannot behave as a wave. If the momentum is constant, the path of the particle is either linear or circular, nothing else. A particle of mass cannot have multiple positions simultaneously. Oscillation of a particle is not a wave. An electromagnetic wave generated by the oscillation of a particle has no attachment to the particle. If the orbits of electrons in an atom are quantized, the change of orbits is not possible since no mass can move from one orbit to another without crossing in between space. A particle cannot disappear from one orbit and reappear in another orbit, a magic act only Houdeni can perform.

Precision of the position measurement is not limited or restricted by the precision of the momentum measurement of a particle and vice versa. In fact, the precision of the momentum is directly proportional to the precision of the position since momentum is a derived quantity from the rate of change of position. Precision of position and precision of momentum are not inversely related as it is claimed to be by the invalid Heisenberg's Uncertainty Principle. In fact, it is quite the contrary, increased precision of position gives increased precision of momentum.

Contrary to the popular bogus claim, both position and momentum of a particle can be measured concurrently since the existence of momentum at any position requires the change of position. Reflected electromagnetic wave pulse from a particle gives both the position and momentum of the particle concurrently; no separate measurement is required. Time delay of the reflected electromagnetic wave burst gives the position, while the frequency shift of the reflected electromagnetic wave burst gives the momentum. There is no truth to the claim made by the Heisenberg Uncertainty Principle. The Heisenberg Uncertainty Principle is invalid. It is a result of Fourier Transform Ignorance [7].

The claim that the use of light to measure the momentum alters the position and makes the position uncertain is blind. Light has no effect on an electrically neutral particle. Light can only alter the position of a charge particle. The interaction between light and a particle is not a collision of momenta. Light has no momentum. Light generates momentum on charge particles. Light has no effect on an electrically neutral particle irrespective of the size of the particle.

Position and momentum of a charged particle cannot be uncertain since uncertainty results in radiation loss. Uncertainty costs energy, it is not free. There is no measurement problem associated with particles. Human concocted microscopic measurement problem in Quantum Mechanics is mainly a result of misinterpretation of two experiments, namely, the Stern-Gerlach Experiment and the Double-Slit Experiment, which are based on a beam of particles. Here we are going to summarize what is wrong with the interpretation of those two experiments and what exactly happens with those experiments. We have already presented the detailed description of the Stern-Gerlach Experiment. More detail on what went wrong with the Double-Slit Experiment can be found in [2,13].

Lemma: Simultaneous Measurement of Position and Momentum of a Particle

Both Position and Momentum of a particle can be measured simultaneously. Reflected electromagnetic wave pulse (radar) from a particle gives both the Position and Momentum of the particle concurrently. No separate measurement is required. Time delay of a reflected electromagnetic wave burst gives the Position of the particle, while frequency shift of the reflected electromagnetic wave burst gives the Momentum. Light has no effect on electrically neutral particles. Light cannot alter the position and momentum of electrically neutral particles.

Lemma:

The momentum of a particle cannot generate radiation without a charge. Since a charge has no existence without the mass of an electron, the wavelength of radiation due to the stopping of charge particle of any mass M is inversely related (frequency is directly related) to the chomentum qu, as well as the mass of an electron m_e , not to the mass of a particle M. Since the mass of an electron m_e is a constant, it is absorbed into the radiation parameter, which is the proportionality constant between wavelength λ and chomentum qu.

Lemma:

Electromagnetic waves generated by an object of mass M and charge q traveling at speed u are not related to the momentum Mu; they are related to qu, where q is the charge, M is the mass of the object, u is the speed of the object.

When a mass M of charge q moving at speed u is stopped, the wavelength of the electromagnetic waves generated is given by $\lambda = \eta/qu$, where η is the radiation parameter, not by de Broglie wavelength, $\lambda \neq h/p$, where p=Mu. De Broglie wavelength is moronical. It is only in the case of a moving electron that the wavelength of the generated electromagnetic waves due to the stopping of an electron of momentum p is proportional to 1/p. These generated electromagnetic waves propagate and do not describe the position and momentum of the particle that generated them. These are not particle waves.

A. Stern-Gerlach Output is Not Probabilistic:

There is no probability involved in the Stern-Gerlach Experiment. Beam Split is completely deterministic. When the first atom enters Stern-Gerlach Magnetic Field (SGMF), if the angle between the Spin Magnetic Moment (SMM) of the Atom and the SGMF is θ , then,

Case-1: If θ =±180 for the first Atom of the beam entering the SGMF

In this case, when the First Atom of the Beam enters the SGMF, the Atom is at a critical stable point and there is no alignment torque when θ =±180. It will be deflected as Spin-Down. If the orientation of the first Atom is at $\theta=\pm 180$, then, the orientation of the second Atom entering the SGMF will be opposite to that of the first Atom due to the magnetic coupling, i.e. the second Atom enters at θ =0. There is no alignment torque when θ =0. The second Atom will be deflected as Spin-Up. Similarly, the following Atoms will be deflected as Spin-Down, Spin-Up, Spin-Down, Spin-Up, ... and so on alternately. Where an incoming Atom ends up is completely deterministic. When the first Atom enters at θ =±180, all the Atoms in odd positions, 1, 3, 5, ... will be deflected against SGMF as Spin-Down while the Atoms at even positions, 2, 4, 6, ... will be deflected toward the SGMF as Spin-Up. As a result, the number of Atoms in each Split beam is the same.

The first Atom of any beam arriving at Stern-Gerlach Magnetic Field aligned already exactly against SGMF is possible, but very rare. Any slightest deviation generates an alignment torque that forces the Atom to align towards the SGMF since $\theta=\pm 180$ is a critical stable state. As a result, the first Atom of any beam of Atoms will always end up in the Spin-Up Split Beam unless it is arriving aligned against the SGMF. As a result, in general, the atoms at odd position (1,3,5,7, ...) end up as Spin-Up beam while the atoms at even positions (2,4,6,8, ...) will end down as Spin-Down irrespective of the angle θ between the direction of the Spin of the first atom of the beam and the direction of the Stern-Gerlach Magnetic field.

Case-2: If θ is at any value but not against SGMF, $\theta \neq 180$ for the first Atom entering the SGMF

In this case, when the first Atom enters the SGMF, it immediately aligns with the SGMF because of the alignment torque, and hence immediately after the arrival of the first Atom at the SGMF, θ =0. As a result, it will be deflected towards SGMF as Spin-Up. The second atom will be aligned against the orientation of the first Atom and enter the SGMF at θ =±180. As a result, the second Atom will be deflected against SGMF as Spin-Down. Similarly, the following Atoms will be deflected alternatively as Spin-Up, Spin-Down, Spin-Up, Spin-Down, ... and so on. Where an incoming Atom ends up is completely deterministic. All the Atoms in odd positions, 1, 3, 5, ... will be deflected toward SGMF as Spin-Up while the Atoms at even positions. 2. 4. 6. ... will be deflected against the SGMF as Spin-Down. As a result, the number of Atoms in each Split beam will be the same.

Probability plays no role in the Stern-Gerlach Experiment. Splitting of a beam into two beams of equal number of atoms by the Stern-Gerlach Device is completely deterministic. Two consecutive atoms always undergo opposite deflections and end up in opposite beams all due to magnetic coupling between neighboring Atoms in a beam of Atoms. There is no measurement problem or mystery here. State of the spin of an Atom or a charged particle is not probabilistic.

Lemma:

A spinning electrically neutral particle has no Spin Magnetic Moment. Stern-Gerlach Device is useless for electrically neutral particles. Although an Atom is electrically neutral, an Atom is not a particle. An Atom is an orbiting system of charge particles and as a result an Atom has a Spin Magnetic Field. In fact, Spin is a property of orbiting systems. A particle has no Spin unless it is an ejected particle from an Orbiting System.

It does not matter the orientation of an Atomic Spin Magnetic Moment (SMM), the Atom will end up either aligned with the SGMF or against SGMF. You are either with us or against us. An atom in a Stern-Gerlach Device has no memory of the Spin it had before it entered the Stern-Gerlach Device. Orientation of Spilt beams says nothing about the actual orientation of the Atoms prior to their entering of the SGMF. You cannot use the SGMF to determine the orientation of the SMM of an Atom. You cannot use SGMF to measure the component of Spin Magnetic Moment or the component of Spin of an Atom on an axis or in a certain direction. It is the whole Spin Magnetic Moment of an Atom or a charged particle that is oriented towards an external Magnetic Field, not the projection of the Spin in the direction of the external Magnetic Field. The orientations of Atoms in split beams are volatile, not permanent. As soon as the atoms in the split beams are out of the SGMF, the magnetic coupling between the atoms takes place and they reorient themselves so that no two neighboring Atoms have the same orientation.

Lemma:

In the absence of an external magnetic field, the orientation of neighboring Atoms in a beam are directly opposite to each other naturally due to Spin Magnetic Moment coupling between neighboring atoms.

Lemma:

As soon as the first Atom of a beam of Atoms enters the SGMF, it is torqued to orient toward the SGMF and drift it as Spin-UP. The rest of the atoms will be entering the SGMF as Down, Up, Down, Up, ... with alternative spins.

B. It is not Possible to Prepare a Particle to be Spin-Up or Spin-Down:

Lemma:

The set or prepared Spin-Up and Spin-Down of particles by a Stern-Gerlach Device are volatile. They only remain in the set or prepared positions of Spin-Up or Spin-down as long as SGMF is present.

It does not matter how hard you try, if all you have is a single particle, you cannot prepare it to be Spin-Down by sending it through a SGMF. If all you have is only a single particle, when you send it through a SGMF, it always orients itself toward SGMF, and hence ends up as Spin-Up. You can take any particle and send it through a Stern-Gerlach Device, it always ends up as Spin-Up.

If all you have is a single particle, you cannot get it to be Spin-Down unless you can make it enter the SGMF exactly against the SGMF, which is impossible. If you have a particle that has orientation exactly against the SGMF, it is already Spin-Down relative to the SGMF, and hence there is no reason to send it through SGMF. If you send a particle that has the orientation against SGMF, then it passes through the SGMF while shifting down without any change in orientation since the orientation torque is zero.

If a single particle goes through SGMF as Spin-Down, you are certain that the prior orientation of the particle is against the SGMF. It cannot be of any other orientation. However, if a single particle goes through a SGMF as Spin-Up, you have no clue to the actual orientation of the particle. It says nothing about the prior orientation of the particle. You only know for sure that it is not against the SGMF. The actual orientation can be of any angle, except it is not against SGMF. More importantly, once the particle is out of the SGMF, its alignment is neither in the direction of the SGMF nor against it. Its alignment is determined by the population of the Atoms or the magnetic field of the environment that it is a part of.

Lemma:

If a single particle goes through a SGMF as Spin-Up, it says nothing about the orientation of the particle. The actual orientation could have been of any angle except it was not against the SGMF.

If you send two consecutive Atoms one after another through SGMF, the first Atom will always be deflected in the direction of the SGMF as Spin-Up while the second Atom will be deflected against SGMF as Spin-Down. Once the Atoms are out of the SGMF, their orientations are determined by the magnetic field of the environment and the magnetic coupling of neighbors.

You cannot prepare particles to be Spin-Up or Spin-Down. Particles do not have a memory of its orientation. The orientation of a Spin is not a state of an Atom or charged particle. The orientation of the Spin exists only relative to an observer. Orientation is an observer dependent quantity, which is not a state of a particle. Orientation of a particle is completely determined by the population of Atoms or the magnetic field of the environment the particle is in or particle is part of.

Noteworthy:

- A lonely Single Particle through SGMF (θ≠180) is always Spin-Up, never Spin-Down.
- The first atom of a beam of atoms is always Spin-Up.
- The second atom of the beam that is magnetically coupled to the first atom goes through the SGMF just after the first Atom, and it is always Spin-Down, never Spin-Up.
- Particles Do Not Have a Spin Memory. The direction of Spin is never a state of a particle. The direction of Spin only exists relative to observers.
- The orientation of Spin is not a property of a particle. The orientation of the Spin is a vector. Vectors cannot come in quanta.
- Spin is bipolar. Bipolar entities cannot come in unipolar quanta. Spin cannot be Quantized.

C. There are no Spin-Up or Spin-Down Particles:

Spin-Up and Spin-Down are not states of a particle. Spin is bipolar. Bipolar spin has no unipolar Up and Down states. Spin-Up and Spin-Down reside in the same Particle with relative to an Observer. Spin-Up and Spin-Down are non-Separable since separation results in the creation of Magnetic Monopoles. You cannot create Magnetic Monopoles. There are no Magnetic Monopoles. As a result, Spin-Up and Spin-Down are Not in a Superposition. There is no Up without Down and vice versa. Up and Down are perfectly correlated negatively and exist in the same bipolar Spin.

The claim by some physicists that there had been a monopole soup at the beginning just after a Big-Bang (Big-Nonsense) is simply preposterous. Magnetic monopoles cannot exist in any situation. Magnetic fields are loops. No magnetic monopole can exist in isolation in any circumstance, impossible. Bigbang is mythical. Space cannot expand or contract. It is the matter that expands or contracts. A mass cannot warp space even if the space is warpable since it is not the mass that occupies the space. It is the volume of an object that occupies the space. If space is warpable, it is the volume of an object that must warp space.

Light is not relative and hence Einstein's Relativity is false [15,16]. The Lorentz Transform cannot transform Maxwell equations for propagation of light [17]. Time cannot be relative. If time is relative, time will be directional. If time depends on motion, the directional motion cannot produce a non-directional time. Time must be non-directional. There was no Big-Bang [5, 9]. The nonsensical concept of Big-Bang is a result of our misinterpretation observation.

Galaxies are not moving away. If galaxies are moving away, all the stars in a galaxy must have the same redshift. The redshift of a star in a galaxy cannot be attributed to a universe expansion. The redshift of light from distant galaxies is due to the change of the medium along the path of light [12,5].

Light has no kinetic energy. What light has is electromagnetic potential energy. Electromagnetic potential energy can be converted to kinetic energy of charge particles. The energy of light cannot be given by e=hf since frequency has no existence without amplitude, e≠hf. Further a galaxy away, higher the wavelength shift, and hence higher is the red shift. The redshift of a star in a galaxy cannot be attributed to a universe expansion. The inter galactic distances between gravitationally bound galaxies cannot be altered by the expansion of the universe. Universe is not expanding [12,9]. Universe cannot expand. There is no multiverse. There is no dark matter. or dark energy (sciencing in the dark) [6,12]. No Dark Matter and Dark Energy are required. There is no need for Dark Matter and Dark Energy.

Spin-Up and Spin-Down are not orthogonal. They cannot be represented by orthogonal vectors. Spin-Up and Spin-Down are in perfect correlation negatively. If you represent Spin-Up by a vector, the Spin-Down is the same vector in the negative direction. There is NO Quantum Measuring Problem. A particle of mass has no place for a wave function. Particles are not waves. There are no collapsing wave functions. Nothing is waving in a particle. The oscillation of a particle is not a wave. Nothing is collapsing in a particle due to observation. Everything in a particle is deterministic. If there is a wavefunction, and if it collapses every time it is peeked at, then that wavefunction should be always at a collapse state since every particle is peeked at by other neighboring particles. Wavefunction itself is meaningless. Particles do not behave as waves. Particles cannot behave as waves. What is there to wave in a particle? There is nothing waving in a particle. Probability distribution is static, never a wave. A wave is never static, always propagating, and hence a wave cannot be a probability distribution. Oscillation of a particle is not a wave and the position and the momentum of a particle cannot be described by the wave equation.

Unlike a probability distribution, a propagating wave cannot have unit area under its wave. A wave normalized in the range of a wavelength is not a probability distribution. For a wave to be a probability distribution, it must be normalized for the entire range. A propagating wave cannot be normalized for the entire range. A wave does not exist if it is not propagating, and a propagating wave cannot be normalized. A wave with zero crossings cannot be a probability distribution of the position and momentum even when it is squared and normalized.

There is no mechanism to distinguish the wavefunction of one particle from the wavefunction of another particle. A wave has no existence without propagating. A propagating wave function cannot be anchored to a particle. A particle cannot behave as a wave. Wave is not a probability distribution. Probability distribution is not a wave. Nature does not normalize. Irrespective of the size of a particle, the state of a particle at any time must be UNIQUE.

It costs energy to be uncertain. An electron on a circular orbit in an atom does not radiate since there is no motion of the electron along the centrifugal force. There is no acceleration without motion along the force. Force per unit mass and acceleration are not the same. Gravity and acceleration are not the same. A falling apple has acceleration. An apple on a tree has no acceleration. Einstein's equivalence principle is false. General Relativity is meaningless. If space is warped by a mass, orbiting systems are not possible.

Stern-Gerlach Principle: Bushism

You are either with us or against us. If you are not totally against us, you have the potential to be our friend and hence we will torque you toward us (Spin-Up). If you are against us (Spin-Down), you are a high potential activist, you are our enemy, period.

Important Directional Note:

Spin-Up does not mean Up \uparrow or \nearrow . You can equally call \downarrow , \leftarrow , \rightarrow or \checkmark as Spin-Up, and it is same for Spin-Down. Up and Down are relative to an Observer. Spin-Up means in the direction of External Magnetic Field while Spin-Down is against the External Magnetic Field; the External Magnetic Field can be in any direction, North, South, East, West, Left, Right, In, Out etcetera. Particles do not have Up and Down Memory, or any other orientational signature. Nature does not have Ups and Downs. Nature does not have directions; direction is always relative to an observer.

Lemma:

Up and Down are Observer Dependent labels that

do not stick to a particle. They do not represent states of a particle. Up and Down are observer perceptions that depend on the location of an observer. Observer dependent quantities cannot come in quanta.

XVI. DOUBLE-SLIT EXPERIMENT HAS NOTHING TO DO WITH PROBABILITY; THERE ARE NO PARTICLE WAVES

In the Double-Slit experiment, when the moving charges are stopped by the Double-Slit barrier, it generates electromagnetic radiation waves that pass through both slits equally generating two separate diffraction patterns if the two slits are distant apart. When the two slits are brought closer, these two diffraction patterns start to overlap producing an interference pattern. Interference pattern of two slits is the superposition of the two diffraction patterns generated by two slits when the two slits are closer.

Property-1:

The diffraction pattern itself is determined by the width w of the slits. The distance d between the slits determines the extent of the interference of two diffraction patterns on the screen.

Property-2:

When two slits are separated by a large distance, two separate disjoined diffraction patterns appear on the screen.

Property-3:

When two slits are closer together, as in the case of Double-Slit experiment, these two diffraction patterns interfere on the screen generating an interference pattern of bright and dark lines on the screen. Process is totally deterministic. The major lobe of the interference pattern is centered around the center point O, where the extended line along the beam through the midpoint between the slits intersects the screen [2].

Lemma:

The wavelength of the interference pattern is determined by the change of chomentum qu, not the momentum mu, where q is the charge, m is the mass of the particle, u is the speed of the particle. The wavelength λ is given by,

λ=η/qu

where η is the radiation constant. Wavelength has no direct relation to the mass of the particle. The effect of mass is indirect since the mass affects the speed.

Lemma:

It is only in the case of a beam of electron in the Double-Slit experiment, the wavelength of the electromagnetic waves generated by the stopping of the electrons by the Double-Slit Barrier is inversely proportional to the momentum of electrons, $\lambda = \eta_e / p_e$, where η_e is the radiation constant and p_e is the momentum of electrons [2].

Corollary:

For a mass with charge q=ne and momentum p, the wavelength of electromagnetic waves generated by the stopping of the mass is given by,

λ=η_e/np_e,

where $p_e=m_e(p/m)$, m_e is the mass of an electron, e is the charge of an electron.

The wavelength $\lambda = \eta_e/np_e$ is not a wavelength of a hypothetical particle wave. A particle of momentum p is not a wave and De Broglie wavelength $\lambda = h/p$ has no existence. A Particle wave is an oxymoron. There are no particle waves.

The wavelength of electromagnetic waves that are resulted from the stopping of a charge particle of mass m with charge q and momentum p is not proportional to the reciprocal of the momentum, 1/p; it is proportional to the reciprocal of the momentum of an electron, $1/p_e$, where $p_e=m_e(p/m)$, m_e is the mass of an electron. The larger the charge,

The wavelength of electromagnetic waves generated by an object of mass m with charge q and momentum p is given by,

 $\lambda = \eta_e / np_e$,

where n is the number of electrons the charge q of the mass equivalent to, q=ne, e is the charge of an electron,

De Broglie wavelength λ =h/p is meaningless. λ ≠h/p. There are no particle waves.

Property-4:

Since the charge particles of speed u are stopped at the Double-Slit barrier, the change of chomentum is equal to the chomentum qu. The wavelength is inversely proportional to the change of chomentum qu. The change of momentum has nothing to do with the generation of electromagnetic waves.

Property-5:

A particle or mass enables the motion for a charge. Mass is required since charge has no existence or motion without a mass. Mass is a chauffeur for a charge.

Property-6:

A charge moves at the same speed as the speed of the particle that carries the charge, u. The electromagnetic radiation waves generated by the collision of charges with the barrier propagate at the speed of light.

Property-7:

The optimal electromagnetic radiation is achieved when the charge to mass ratio of the particles is the highest,

[q/M]_{max}=e/m_e

where, q is the charge of a particle of mass M, e is the charge of an electron, and m_e is the mass of an electron.

Since a charge has no existence without the mass of an electron, electrons are the particles with the highest charge to mass ratio. This is the reason why we have Electrons Microscopes, not Proton Microscopes. This is the reason why a beam of electrons is used in the Double-Slit Experiment.

Property-8:

The frequency f of the electromagnetic radiation that results from the stopping of a beam of electrons at the Double-Slit barrier is given by, $f=c/\lambda$, where, c is the speed of light. By measuring the wavelength λ on the screen behind the double-slit barrier, we can obtain the frequency of the wave that resulted from the collision of the electrons with the double-slit barrier. No electron is passed through the double-slit barrier since two slits are off to the direction of the beam. All the electrons in the beam are stopped by the Double-Slit barrier.

When we use a beam of charged particles as input to the Double-Slit Experiment, all the particles are stopped by the Double-Slit barrier [2]. There are no particles on the other side of the barrier. No particles hit the screen that is there behind the double-slit barrier. If you place a particle detector at the screen, there will be no indication of any particles reaching the screen. If an electromagnetic wave detector is placed at the screen, it will indicate the presence of electromagnetic waves at the screen.

When moving charge particles are stopped suddenly, it generates electromagnetic radiation. It is this radiation that passes through the slits and interferes on the screen to generate an interference pattern. The wavelength of the interference pattern depends inversely on the change of speed of a moving charge or the change of chomentum qu, where q is the charge of a particle and u is the speed of the particle. The frequency of the electromagnetic radiation is directly proportional to the change of chomentum qu. Since the charges are stopped by the Double-Slit barrier abruptly, change of the chomentum is equal to the chomentum qu. In the Double-Slit experiment, the interference pattern includes fringes or bright lines on the screen.

In the Double-Slit experiment, let us assume the central line, or the extended line of the beam that passes through the center of the line connecting two slits, intersects with the screen is point O. Then, if we have the mth bright fringe at point P on the screen at distance z_{mb} from O, and the screen is at distance L from the double-slit barrier, the wavelength λ of the interference pattern is given by the relationship,

 $z_{mb} = (m\lambda L/d)$

where, $(m\lambda/d)$ <1, m=0, ±1, ±2, ±3, ...

d is the distance between the slits, subscript _{mb} stands to mth bright fringe.

Smaller the distance between the slits, larger is the separation between the bright lines as long as λ <d. If λ >d, there are no interference patterns of bright and dark lines. Larger the distance between the Double-Slit barrier and the screen, the larger the separation between the bright lines. The main lobe of the interference pattern is centered at O, that is the point where the extended line of the beam crossing

the midpoint point between the line connecting the two slits intersects with the screen. The beam of particles never reaches the point O. Beam is stopped by the Double-Slit barrier. But the electromagnetic waves generated by the stopping of charged particles in the beam by the Double-Slit barrier propagate through the slits and reach the screen at O in-phase and add constructively producing the peak brightness of the main lobe, m=0.

The dark lines on the screen are at distance z_{md} given by the relationship,

 $z_{md} = (m+1/2)\lambda L/d),$

where, $(m+1/2)\lambda < d$, m=0, ±1, ±2, ±3, ...

subscript _{md} stands to mth dark line.

At the first dark line, m=0, and hence the distance z_{od} is given by, z_{od} =(1/2) λ L/d.

So, the main lobe of the interference pattern is centered at O and has the band width $2z_{od}$. The band width of the main lobe is $\lambda L/d$.

A beam of particles does not reach the center point O on the screen or any point on the screen since all the particles are stopped on the way by the Double-Slit barrier. Particles cannot cross the Double-Slit barrier. There is no slit on the barrier along the line of the beam of particles for the particles to go through. Particles do not have any knowledge of two slits off its path. Particles cannot go through the slits since the slits are off to the path of the beam. The electromagnetic radiation waves, produced by the collision of charge with the Double-Slit barrier, undergo diffraction at the slits and propagate to produce an interference pattern on the screen.

If we close slit-2, all the radiation waves that arrive on the screen will be from the other open slit, slit-1. There is no interference, and hence there will be no interference pattern. However, we still can see dark and bright lines on the screen when slit-2 is closed if λ <w, where w is the width of the slit. Although this looks like an interference pattern, this is not an interference pattern. When radiation waves pass through a slit, they undergo diffraction. What we see on the screen is the diffraction pattern of bright and dark spots. The distance to the mth bright line on the screen z_{mb} is given by,

 $z_{mb} = (mL\lambda/w)$

where, $m\lambda < w$, $m=0, \pm 1, \pm 2, \pm 3, ...$

w is the width of a slit.

Similarly, the distance to the m^{th} dark line on the screen z_{md} is given by,

 $z_{md} = (m+1/2)\lambda L/w),$

where, $(m+1/2)\lambda < w, m=0, \pm 1, \pm 2, \pm 3, ...$

The distances to the bright lines are inversely related to the width of the slit. Smaller the width of the slit, w, larger the separation between the bright lines. If the line parallel to the line of the beam through the open slit, slit-1, intersects the screen at O_1 , then, the beam is centered at O_1 on the screen. If the other slit, slit-2 is open and slit-1 is closed, the beam will be centered on O_2 , where O_2 is the point on the screen where the center line through the slit-2 parallel to the screen where the center line through the slit-2 parallel to the extended line of the beam intersect [2].

In the case where both slits were open, the beam

is centered along the extended line of the beam at point O on the screen, the center point on the screen corresponding to the center point between the slits on the Double-Slit barrier. There is nothing strange happening in the Double-Slit experiment when we use a beam of particles. All the particles are stopped at the barrier. Everything that is happening behind the Double-Slit barrier is a result of the electromagnetic waves generated with the collision of charge particles at the Double-Slit barrier.

The centering of interference pattern at O on the screen, where the beam has no opening in the Double-Slit barrier to reach O, has been used to support the spookiness in Quantum Mechanics; this is simply groundless, false, quite simply preposterous. Two diffraction patterns are centered at O_1 and O_2 . If two slits are closer, O_1 and O_2 are closer and hence the superimposed pattern will have the peak at O, which is the midpoint of O_1O_2 , even though point O is covered by the Double-Slit barrier. It is simply due to the diffraction when electromagnetic waves pass through a slit. You can achieve this same thing using a beam of light too. It is not limited to particles. This shows that this is not something that is peculiar to a beam of particles.

When two slits are far apart, waves through each slit generate separate diffraction patterns on the screen centered on their own centerline interaction points on the screen, O_1 and O_2 . The point O on the screen is the midpoint of O_1O_2 . When we bring slit s_1 and s₂ closer together, diffraction patterns start to overlap. However, initially, the overlapping will be in the positive tail of one diffraction pattern centered at O_1 with the negative end of the tail of the other diffraction pattern at O₂. If the slits are at a significant distance, then, there will still be two main lobes centered at O₁ and O₂. If we bring slits closer and closer, the two main lobes of the diffraction patterns start to overlap generating one interference pattern with one main lobe centered at O with peaks with decreasing magnitude in the tails. The peaks correspond to the bright lines while the troughs correspond to the dark lines.

If the screen is a phosphor screen, what we observe is not the lines since the illumination of the phosphor screen at any point corresponds to the strength of the electromagnetic field. As a result, there will be bright spots corresponding to the peaks of the waves.

The peaks of the interfering electromagnetic waves appear as bright spots on the phosphor screen. It is the misinterpretation of the bright spots as particles colliding with the screen that led to a probabilistic interpretation. No particle ever reaches the screen in the double-slit experiment. Particles do not choose which slit to go through probabilistically. No particle crosses the Double-Slit barrier to the other side. All the particles are stopped at the Double-Slit Barrier. It is the electromagnetic waves generated by the collision of charged particles with the double-slit barrier that undergo diffraction through the slits in the barrier and interfere on the screen behind the double-slit barrier generating the interference pattern.

If you remove the phosphor screen completely and place a particle detector at that place, you will not detect any particles there; particles cannot reach the place where the screen is. There are no particles behind the Double-Slit barrier on the side of the screen. You will only find electromagnetic waves behind the Double-Slit barrier when you carry out the Double-Slit experiment with a beam of charged particles as input.

The claim that Quantum Particles go through both slits is pure nonsense, not science, voodoo-science. Non-science may just appear as science when everybody believes in it. A lie becomes the truth when the jury considers it to be right. What the jury considered to be right may not be the truth. Nonsense is nonsense even when everybody believes in it. Religious doctrines are utter nonsense, yet billions of people believe in them because they were either taught or forced to believe them. It is the same flat-earth syndrome again, we had been there before.

Common-sense must prevail ultimately, sooner or later. Irrespective of size, no particle can be at several places simultaneously, at the same instant. Physical laws must be the same irrespective of the size and the location of the object. There are no multiple worlds for our mental alternate realities, for alternate realities we envision. Something that has not happened is not a reality; it is a human-dreamed-up reality. Alternate realities that are brewing in our human psyche are not realities in parallel worlds.

There is no probability involved when the Double-Slit Experiment is used with a beam of microscopic Particles. What you get for a beam of particles in the Double-Slit experiment can also be obtained using a beam of electromagnetic waves. The underlying principle is the same. The only difference is the source of electromagnetic waves. In the case of a beam of light, we have a direct source of electromagnetic waves. In the case of a beam of particles, we have an indirect source, where electromagnetic waves are generated by colliding charge particles, not any particles, CHARGE particles. There will be no interference pattern in the Double-Slit experiment if an electrically neutral beam of particles is used.

The nuisance of de Broglie's particle waves of wavelength $\lambda = h/p$ is easy to demonstrate using the Double-Slit experiment. Carry Out the Double-Slit experiment for a beam of electrons of momentum p. Carry Out the same experiment for a beam of protons of momentum p. Here the momentum of electrons in the beam is the same as the momentum of protons in the beam of protons. If you obtain the wavelength for the two beams, the wavelength will not be the same even though the momenta are the same. The claim that the interference pattern on the Double-Slit experiment is a result of particle waves and the wavelength is given by $\lambda = h/p$ is preposterous, $\lambda \neq h/p$. You will not get the same wavelength if you carry out the Double-Slit experiment for a beam of electrons and for a beam of protons of the same momentum.

Lemma:

If the Double-Slit experiment is carried out for a beam of electrons and for a beam of protons of the same momentum, the wavelengths of the two interference patterns will not be the same. It demonstrates the invalidity of de Broglie's wavelength and the bizarreness of the concept of particle waves. There are no particle waves. Particles are not waves.

The outcome of a Double-Slit Experiment is deterministic. State of a particle is unique. There is no Measurement Problem in Microscopic Particles or Quantum Particles. Size of a particle does not destroy reality. Reality is that the Position and the Momentum of a particle are UNIQUE at any instant. A particle cannot be at multiple places at the same time. A particle cannot have multiple speeds at the same time. There is no momentum without the change of the position. There is no change of position without passing of time. If the position of a particle is fixed, there will be no momentum. If the momentum of a particle is a constant, then, the path of a particle will be either linear or circular. Electrons on circular orbits do not radiate since there is no motion along the centrifugal force. There is no acceleration unless there is a motion along the force. Acceleration is not a force per unit mass. Acceleration is given by $a=\partial^2 x/\partial t^2$. $a \neq F/m$. If $\partial x = 0$. a = 0 even if $F \neq 0$.

Lemma:

Newton's second law does not apply to stationary objects; $a \neq F/m$ for stationary objects. Since the acceleration $a = \partial^2 x / \partial t^2$, there is no acceleration without motion even when there is a force $F \neq 0$. There is no momentum without motion. If the position is fixed, there will be no momentum. For a fixed momentum, the path is linear or circular, and cannot be a wave.

Lemma:

The precision of the measured momentum is directly proportional to the precision of the position measurement since the momentum per unit mass is the change of position per unit time. The position and momentum of a neutral particle can be measured simultaneously using a burst of light since light has no effect on electrically neutral particles. The frequency shift of the light burst provides the momentum information of the particle while the time delay of the light burst provides the position information of the particle.

Noteworthy:

- Interference Pattern in the Double-Slit Experiment is not due to the collision of Particles with the screen.
- No Particle reaches the screen since they are blocked by the barrier.
- It is the electromagnetic waves generated by the collision of charged particles with the Double-Slit barrier that generates the Interference pattern on the screen behind the barrier.

- Peaks of interfered waves appear as bright spots on the Phosphor screen. Phosphor screen is sensitive to the strength of the electromagnetic field; brightest where the strength is stronger (peaks) and darkest where the strength is lowest (troughs).
- There will be no interference pattern in the Double-Slit experiment if a beam of electrically neutral and stable particles is used. Stable particles do not disintegrate under a collision.
- Neutrons are not stable particles. Neutrons disintegrate under collision. A beam of neutrons will generate an interference pattern since electromagnetic waves are released in a collision due to the disintegration of the unstable neutrons.
- A beam of electrons with momentum p and a beam of protons with the same momentum p do not produce interference patterns of the same wavelengths.

Lemma:

When two slits are at a distance, the waves through slits generate two separate diffraction patterns on the screen centered at O_1 and O_2 . If we bring the two slits closer, they start to interfere to produce an interference pattern centered between O_1 and O_2 , initially with two major lobes unaltered if the slits are still significantly apart. If we bring two slits closer and closer, two major lobes merge to become one centered at O, which is the middle of the O_1 and O_2 [2].

Lemma:

Particles do not go through the slits since the slits are not on the path of the beam of particles. Particles have no knowledge of the slits.

A. Act of Observation does not Make Interference Pattern Disappear in the Double-Slit Experiment

It has been claimed that the act of observation makes the interference pattern disappear. This claim is false and meaningless, not science. It is hard to comprehend the existence of such claims in physics.

If that claim comes from a voodoo practitioner or someone belongs to a strange religious cult it is understandable since such bizarre claims are the foundation of religious doctrines; there are plenty of those mis-guided blind faith religious groups are around creating havocs in the world: some are extremely cruel to the fellow human as well as to the rest of the species and the planet in the disguise of the religious faith. Some try to justify any barbaric activity under the faith. If a man can have multiple wives, why can't a woman have multiple husbands? What is the logic other than man's domination and down right discrimination and subjugation? Religious doctrines are pronounced by the man for the advantage of the man. It is the religious dogmas that allow such subjugation to perpetuate. If you fast in a cave for a few weeks, what you undergo is hallucination; hallucination is not a communication with some hypothetical entity beyond or a creator.

The act of observation does not make the interference pattern in the Double-Slit experiment disappear. One has to be scientifically blind to make such a claim. It is not science. It is voodoo science. How shameless physicists have to be to claim that a particle goes through two slits simultaneously when you are not looking, and if you watch, particles go through one slit? Nonsense! These people call themselves physicists or scientists, and the institutions teaching these nonsense are called Science Institutions; what a travesty.

Property:

Superposition of reflected waves from a passive surface of a detector and the waves generated by an active detector with the interference pattern of the Double-Slit experiment on the screen makes the interference pattern disappear. The act of observation itself has no effect on the interference pattern. Failure to realize this is the genesis of voodoo-physics.

It has been experimentally observed that the interference pattern in the double-slit experiment disappears when a detector is placed near one or both slits to make simple observation. It is this experimental observation that led to the proclamation that the mere observation itself makes the interference pattern in the Double-Slit experiment disappear.

Yes, if you place a detector near the slits in the double-slit experiment to observe the slits or even just for the fun of it, the interference pattern may disappear. You do not even have to observe, just the placement of the detector itself is sufficient to make the interference pattern disappear. You do not even need a detector, just the placement of any reflector surface will make the interference pattern disappear. Because this disappearance has nothing to do with the involvement of an observer, detector, or the act of observation itself.

When you place a detector, the surface of the detector reflects part of the waves from the slits back onto the screen on slightly longer paths that can annihilate the interference pattern on the screen. It is the position of the detector that annihilates the interference pattern on the screen, not the act of observation itself. The placement of a detector will reflect part of the waves back onto the screen in different paths at different time delays.

In addition, waves generated by an active detector also propagate on to the screen directly together with the reflections from the surface of the detector of the waves from the slits in the double-slit barrier. The interference of the reflected waves and the waves generated by a detector will always make the interference pattern partially or completely disappear. It is only when a detector is at certain positions or certain angles that the interference pattern disappears completely.

It clearly shows that it is not the act of the observation itself that annihilates the interference pattern on the screen. It is the interference of the reflected as well as the generated waves from a detector with the interfering waves on the screen that annihilate the interference pattern. If you change the position of the detector or the orientation of the detector, it affects the interference pattern differently. If the disappearance of the interference pattern is due to the act observation itself, then, the position and the orientation of the detector should not have made any difference on the interference pattern since observation is an observation irrespective of the position of the detector or the angle of the detector.

Observation is observation whether it is observed directly or peaked into it from distance by human or any other object. Act of observation is not the cause for the disappearance of the interference pattern. It is the superposition of miscellaneous unwanted spurious waves, due to the placement of a detector, with the interference pattern that makes the interference pattern disappear in the Double-Slit experiment. An Interference pattern is delicate. Superposition of any unwanted spurious waves such as the reflections from a detector surface with the interference pattern will result in the disappearance of the interference pattern.

You do not need a detector to make the interference pattern disappear. You can make the interference pattern disappear by replacing the detector with any reflector. Part of the waves that go through the slits hit the reflector and travel on to the screen on longer paths than the path that travels directly on to the screen. Now, the waves directly from the two slits as well as waves from the reflector interfere on the screen. Any point on the screen has waves in superposition from two slits and the reflector on non-equal paths and hence with different time delays, which destroy the interference pattern due to the superposition of waves from two slits alone. The reflected wave that travels on a longer path interferes with the waves that go through the slits on the screen. The proper positioning or the orientation of the reflector annihilates the interference pattern completely.

The claim that the act of observation itself can make the interference pattern disappear is simply preposterous, nonsense. The act of observation itself of the slits in the double-slit experiment does not make the interference pattern disappear. The interference pattern disappears when a detector is placed near a slit because part of the wave through the slits are reflected onto the screen with different time delays.

Lemma:

If the act of observation makes the interference pattern disappear, then there will never be any interference pattern on the screen since particles are under continuous watch by other particles.

Interference pattern in the Double-Slit experiment is due to the interference of two waves from two slits on the screen. The interference disappearance is due to the superposition of the interference pattern with the reflected and direct waves from a director. In other words, the disappearance of the interference pattern is due to the interference of more than two wave fronts on the screen.

You do not need an expensive detector to make the interference pattern disappear. You can make the interference pattern disappear simply by placing any reflector. This interference pattern disappearance with the placing of a reflector or a detector is not limited to the Double-Slit experiment with a beam of particles. The same phenomena can be observed with a beam of light too.

If you are falsely and blindly certain that a particle probabilistically choses which slits it goes through to make an interference pattern on the screen, and it is the act observation itself that destroys the interference pattern, then, when a beam of light is used, the same act of observation should not have destroyed the interference pattern since light is sure to pass through both slits. However, that is not what happens. The placement of reflector or detector anywhere at any orientation destroys the interference pattern due to beam of light. This shows without a doubt, whether it is a beam of particles or a beam of light that is used in the Double-Slit Experiment, what is going through slits not particles, but electromagnetic waves. are Electromagnetic interference pattern disappears when a third active or passive source or both come into the scene with the placement of an active detector. If a beam of light is used, what you observe on a phosphor screen is an interference pattern made of bright spots just like an interference pattern from a beam of particles.

Lemma:

Interference pattern on the screen in the Double-Slit experiment is due the electromagnetic waves from the collision of charged particles with the double-slit barrier [2].

Lemma:

Act of observation cannot make the interference pattern disappear.

Lemma:

It is the superposition of the reflected and generated waves on different paths with different time delays from the detector/reflector with the interference pattern due to the waves that go through the two slits on the screen that makes the interference pattern in the double-slit experiment disappear, not the act of observation itself by the detector.

Lemma:

If a beam of electromagnetic waves is used in place of a beam of particles in the Double-Slit experiment, what will be present on a phosphor screen is an interference pattern made out of bright spots, not continuous fringes.

If a beam of light is used in the Double-Slit experiment with non-phosphor screen, as it was the case with the original Thomas Young experiment, an interference pattern of solid bright and dark fringes will be present, not an interference pattern of bright spots. However, the interference pattern may not be visible since the electromagnetic waves that resulted from the stopping of the electrons by the double-slit barrier may not be in the visible region of the spectrum.

Whether the interference pattern consists of solid lines or spots is determined by the properties of the screen, not by the type of beam. Whether you get fringes of bright and dark spots or continuous lines is independent of whether you use a beam of charged particles or a beam of light. The nature of fringes, whether continuous or discrete, depends only on the type of the screen used:

- If the screen is made of phosphor, then the interference pattern will be in bright and dark spots for a beam of particles as well as for a beam of light.
- If the screen is made of non-phosphor material, then the pattern will be solid bright and dark fringes for a beam of light.

B. Noteworthy Facts in Double-Slit Experiment

- 1. Double-Slit experiment with a beam of charged particles is one of the most misunderstood experiments from the very beginning. This is the experiment that derailed physics into a mysterious path that it has been taking to this day. It transformed physics into voodoo-physics, and science into voodoo-Science.
- 2. Double slit experiment does not generate an interference pattern if a beam of electrically neutral and stable particles is used. This indicates that it is not the momentum that generates an interference pattern. There is no wave when there is no moving charge.
- 3. The wavelength observed for a beam of electrons of momentum p in the Double-Slit experiment is not the same as the wavelength observed for a beam of protons of the same momentum p. This shows the nonsensicalness of de Broglie conjecture. There are no particle waves. A particle with momentum is not a wave. $\lambda \neq h/p$.
- 4. Although it is not the momentum that generates the interference pattern, without a momentum there will not be an interference pattern since it is the momentum that generates the motion of a charge, chomentum. Momentum is responsible for getting charges moving. Moving charges are responsible for the generation of the interference pattern.
- 5. What generates the interference pattern on the Double-Slit experiment is the electromagnetic radiation resulting from the sudden stopping of the charge particles at the double slit barrier. Particle mass here is simply the carrier of charge. Smaller is the mass, higher is the speed and hence higher is the frequency of radiation. That is exactly the reason why we have electron microscopes, not proton microscopes. If we have proton microscopes, the resolution will not be as good as

the electron microscopes. This is a direct contradiction to the de Broglie wavelength.

- 6. It is the chomentum, which is the product of the charge q and the speed u, qu that is responsible for the interference pattern on the Double-Slit experiment. Higher is the chomentum, shorter is the wavelength or higher is the frequency of the interference pattern.
- The wavelength λ is inversely proportional to the 7. chomentum, qu and hence, $\lambda = \eta(1/qu)$, where, q is the charge of a particle and u is the speed of the particle, and η is the proportionality factor or the radiation parameter that can be determined experimentally using Double-Slit experiment since λ , q, and u are known. If we plot λ against 1/qu, the gradient is the parameter n, the proportionality factor. The wavelength of the radiation must be independent of the mass of the particle. Irrespective of the mass of the particle m, the mass of an electron is intrinsic to the parameter n since there is no existence or motion of a charge without the mass of an electron. The mass of an electron, m_e, is ingrained in the radiation parameter n.
- 8. Mass of a particle is simply the carrier of a charge in the Double-Slit experiment or in Particle Microscopes. Smaller the mass higher the speed and hence higher the radiation frequency or lower the wavelength. This is the reason for choosing smallest charge particles, electrons, in Particle Microscopes. Electron Microscopes provide higher resolution compared to any other Particle Microscope.
- 9. If de Broglie waves are responsible for generating an image in a Particle Microscope, we could be able to increase the resolution by using a beam of particles with higher mass since the wavelength is inversely proportional to mass in the de Broglie waves, $\lambda = h(1/mu)$. This is an indication that de Broglie conjecture is incorrect. There are no particle waves. A particle wave is an oxymoron. It is a moving charge that generates a radiation wave, not a moving mass.
- 10. Larger the charge q to mass m ratio, q/m, smaller the wavelength. If a microscope is designed using a beam of particles, the resolution of the microscope can be increased by choosing particles that have higher charge to mass, q/m, ratio. Particles with the highest charge to mass ratio are the electrons.
- 11. A beam of neutrons will generate an interference pattern since neutrons are unstable. When neutrons collide with the Double-Slit barrier, they disintegrate into charge particles while releasing electromagnetic wave bursts.
- 12. A beam of neutral and stable particles does not generate an interference pattern in the Double-Slit experiment. This falsifies de Broglie's particle wave conjecture.
- 13. A beam of neutral and stable particles does not generate an image in a Particle Microscope.
- 14. If a beam with heavier particles of mass M with

charge q and momentum p is used, the wavelength λ_{M} observed in the double slit experiment will be longer than the wavelength λ_{m} observed for a beam with lighter particles of mass m with the same charge q at the same momentum p, $\lambda_{M} > \lambda_{m}$. This is a complete contradiction to the de Broglie wavelength. If the observed wavelength is given by de Broglie wavelength λ =h/p, the wavelengths for both beams should have been equal since both beams have the same momentum.

- 15. According to de Broglie wavelength λ =h/p, the observed wavelength is inversely related to the mass m for a given speed u, $\lambda = h/(mu)$. The decrease of wavelength with increase of speed is intuitive and practically real. But, the decrease of wavelength with the increase of mass is against our intuition, and practically impossible. You cannot increase the resolution of a Particle Microscope by increasing the mass of the particles. De Broglie wavelength conjecture is false. De Broglie's hypothetical particle waves play no role in particle microscopes. De Broglie waves or particle waves have no existence. There are no particle waves. There are no wave particles. Wave particles and particle waves are oxymorons. There cannot be a wave particle duality since propagation and motion are not the same. Particles move. Waves propagate. Wave bursts move. Motion is relative. Propagation if not relative.
- 16. The invalidity or the error of the de Broglie wavelength is clear since there is no interference pattern in the Double-Slit Experiment when a beam of neutral and stable particles is used. It is an indication that the momentum of a particle does not generate waves. Momentum does not generate an interference pattern.
- 17. The wavelength for a beam of particles of mass m and charge q with momentum p in the Double-Slit experiment will not be the same as the wavelength for a beam of particles of mass M with the same charge q and momentum p. This is a direct contradiction to the de Broglie wavelength.
- 18. According to de Broglie wavelength $\lambda = h/p$, wavelength depends only on the momentum p. De Broglie wavelength is independent of the charge of the particle. In fact, the wavelength of the interference pattern in the double slit experiment depends on the chomentum, the product of the charge and the speed of the particles used, not the momentum of the charge particles.
- 19. It is only when a beam of electrons is used in the Double-Slit experiment that the de Broglie wavelength gives the false impression that it is right. The observation will not support the de Broglie wavelength for any beam of particles except a beam of electrons. These waves are not particle waves. They are electromagnetic waves.
- 20. If two particles of different mass have the same momentum, de Broglie wavelengths of the

particles will be the same. However, a Particle with smaller mass has higher speed than the particle with higher mass, and hence a smaller mass carries the same charge faster resulting in a higher radiation frequency by the stopping of the particle at the Double-Slit Barrier compared to the particle with higher mass traveling at a lower speed even though they have the same momentum. De Broglie wavelength conjecture is incorrect.

- 21. If two particles have different charges but the same mass and the same speed, then the particle with higher charge will generate higher frequency radiation than the particle with lower charge as a result of its stopping at the Double-Slit barrier even though they both have the same momentum. This is a direct contradiction to the de Broglie wavelength conjecture where the wavelength or frequency is independent of the charge of a moving particle.
- 22. Wavelength of the interference pattern in the Double-Slit experiment depends on the charge of the particle, not the mass of the particle. Wavelength is independent of the mass of a particle and depends only on the charge of the particle and the speed of the charge. The speed of the charge depends on the mass of the particle for a given momentum.
- 23. In the Double-Slit experiment, a particle is just for carrying the charges since a charge has no existence without mass, nothing more.

C. The Effect of Observing the Slits in the Double-Slit Experiment When a Beam of Light is Used

When the Double-Slit Experiment is carried out with a beam of light, an interference pattern appears on the screen indicating that light is a wave. When a detector is placed near the slit to observe what is going through slits, the interference pattern disappears depending on the position of the detector. Instead of a detector, if you place any reflector, that will also annihilate the interference pattern. It is not the act observation that makes the interference pattern disappear from the screen.

Lemma:

Irrespective of whether it is a beam of particles or beam of light that is used in the Double-Slit experiment, it is the electromagnetic waves that generate an interference pattern. The process of interference pattern generation is the same. The only difference is the source of the electromagnetic waves. In one, the source is a beam of electromagnetic waves, while in the other electromagnetic waves are generated as a result of stopping of the charge particles by the Double-Slit barrier.

Lemma: Observer Independent Interference Pattern

The act of observation does not annihilate the interference pattern. Irrespective of whether it is a beam of particles or a beam of light that is used in the

Double-Slit experiment, what annihilates the interference pattern in the Double-Slit experiment with the placement of a detector is the superposition of reflected waves from the surface of the detector with the interference pattern on the screen. Not the act of observation itself.

When you place a detector or a reflector at the slits, it will reflect a part of the light from the slits back onto the screen. Since the detector is active, it also generates waves that will propagate directly onto the screen. Now, with the placement of a detector near the Double-Slit experiment, what is on the screen is not just the waves that pass through the two slits that generated the interference pattern. On the screen, the interference pattern is in superposition with the reflected waves from the detector as well as the waves generated by the detector. All the waves travel on different paths with different time delays and meet on the screen annihilating the interference pattern.

The act of observation itself does not make the interference pattern disappear. Why did physicists make such a preposterous and false claim that the act of observation makes interference patterns disappear in the double-slit experiment? This nonsensical claim is simply ridiculous, not science. The sustenance of such a false and meaningless claim to this day in physics and science in general is an indication that there is something wrong with the guardian of science, journals, and academia. You cannot maintain fallacy by ignoring the facts and rejecting publications that threaten the status quo of science. You cannot make the sun orbit the earth by rejecting to accept it in any other way and by rejecting to publish any proof that contradicts the belief. Religions could not make the sun orbit the earth by prohibiting to believe it in any other way. How did the people in the twentieth century make such a claim that the act of observation itself makes the interference pattern disappear from the double-slit experiment? How did the people in the twentieth century make such a claim that a particle can go through two slits simultaneously when nobody is watching? Incomprehensible. How did Physics turn into a joke? A particle is not a thief.

On the other hand, it should not be that puzzling since the majority of people are still believing flat-earth and earth-centric era meaningless, brutality driven, self-serving religious dogma. We still have people praying several times a day for imaginary higher beings looking for a solution to their problems. When you see the actions and behaviors of the countries that are run by religious doctrines, and how gender discrimination is carried out openly by religious doctrines, and the devastating results due to the clashes between minor differences between religious ideologies throughout the history, you can see the mockery of religious ideology itself. It is a perfect petri dish environment for voodoo-physics to take foot hold. On top of that we also have propaganda journals and an education system dedicated to maintaining the status quo of religious dogma run by voodoo-science priests as editors and reviewers to maintain scientific

fallacy perpetually.

Noteworthy:

- The act of Observation does not destroy the Interference pattern in the Double-Slit Experiment.
- It is the reflected wave from the detector/reflector that destroys the interference pattern.

Lemma:

If the Double-Slit Experiment is carried out with a beam of light, the interference pattern on the screen disappears if a detector/reflector is placed near the slits. This disappearance has nothing to do with observation itself since the light passes freely through both slits whether it is being observed or not. Light is not a thief that has to be cautious of observers

Lemma:

If a beam of light is used in the Double-Slit experiment, the interference pattern on a phosphor screen will appear as ridges of bright spots. It is only when a non-phosphor screen is used, the ridges appear as bright lines as in the Thomas Young experiment. If Thomas Young had used a phosphor screen, he would have observed the ridges of bright spots instead of solid lines.

Bright spots are a result of the inherent characteristic of a phosphor screen when it is exposed to electromagnetic waves; brightness at any point is proportional to the strength of the electromagnetic waves at that point. The points corresponding to the peaks of the waves appear the brightest. The points corresponding to the troughs of the waves appear the darkest.

D. An Experiment to Demonstrate the Double-Slit Blunder

If you carry out the Double-Slit Experiment using a beam of electromagnetic waves, instead of a beam of electrons, you will still see an interference pattern of fringes made out of bright spots. If you have access to a Double-Slit Experiment, try it. The bright spots of the screen correspond to the peaks of the wave. In the Double-Slit Experiment for a beam of electrons also, the bright spots on the screen correspond to the peak of electromagnetic waves generated by the stopping of electrons at the Double-Slit Barrier; they are not a result of collision of electrons with the phosphor screen. All the electrons are stopped at the Double-Slit Barrier. No electrons cross to the other side of the Double-Slit barrier.

XVII BENDING OF LIGHT NEAR A GRAVITATIONAL OBJECT HAS NOTHING TO DO WITH GENERAL RELATIVITY

Every object has a medium that surrounds it. Larger the object, higher the density of the medium that surrounds it. A Gravitational object generates a density gradient in the medium that surrounds it. Larger the gravitational object, steeper the density gradient in the medium that surrounds the gravitational object. It is this density gradient of the medium that bends light. It is this density gradient of the medium that shifts the wavelength of light. The density gradient of the medium blueshifts the oncoming light while it redshifts the outgoing light. The density gradient of the medium that surrounds dense objects such as blackholes is so steep that they redshift outgoing light below the visible region making them invisible. Gravity cannot shift frequency. The density gradient of a medium cannot shift frequency. There is no frequency shift. Gravity has no effect on time. Gravity affects clocks as chunks of mass. Clocks do not determine time. Time itself is not affected by gravity. Gravity has no effect on the massless. Gravity has no effect on the time period T of a wave and hence the frequency f=1/T is not affected by gravity. Gravity has no direct effect on light.

However, gravity has an effect on light through the medium since gravity can alter the density of the medium creating density gradient. The variation of the density gradient of a medium alters the speed of light. Higher the density gradient, lower the speed of light. As a result, since $c=f\lambda$ and frequency is unaltered, wavelength is blue shifted as light travels in an increasing density gradient towards a gravitational object. Similarly, since frequency f=1/T is unaltered and the speed of light increases as light travels from a dense medium to a less dense medium as it is the case with outgoing light from a gravitational object such as a star, outgoing light undergoes a wavelength redshift. There is no wavelength shift in a vacuum. The diffraction of light near the sun is noticeable during a solar eclipse since the density gradient of the medium near the sun is steeper. Although light is diffracted near the earth due to the density gradient of the atmosphere, the density gradient is not steep enough for a noticeable diffraction.

When Arthur Ellington ventured into measuring the diffraction of light near the sun during an eclipse, he had one goal; he wanted to validate General Relativity. So, he conveniently and unscrupulously disregarded the effect of the medium and falsely attributed the diffraction of light near the sun to General Relativity for personal triumph; pure deception. The density gradient of the medium near a massive star cannot be disregarded as it can be disregarded near the earth. If one wants to claim the diffraction of light near a gravitational object is a result of General Relativity, then, one has to consider a gravitational object in a vacuum. Gravitational objects in a vacuum cannot diffract light. On the other hand, it is not possible to have a vacuum in the presence of an object of matter.

The redshift of light near a star is not a result of an expansion of the universe, not a result of General Relativity. Gravity cannot warp space. The redshift of light near a star is due to the density gradient of the medium. Object will release matter into space. The density gradient of the matter surrounding a star increases as stars release more and more matter resulting in an increase in redshift with time. The increase in redshift near a star is not a result of an
accelerated expansion of the universe. Space cannot expand. Space cannot be warped. Diffraction of light near the sun is not an effect of General Relativity. Arthur Ellington's experimental observation of the bending of light near the sun is correct but he either knowingly or unknowingly misinterpreted the result, an intentional wicked deception or an interpretation blunder.

The use of the diffraction of light near the sun to substantiate the General Relativity is just another bogus experiment in Physics. There is no dearth of such experimental misinterpretations or blunders in experimental Physics. There are plenty of such experimental blunders that propelled Physics into voodoo Physics, into the supernatural. The use of the diffraction of light near the sun to substantiate General Relativity is nothing more than cheating in desperation. When you spend a large sum of money into an experiment and the livelihood and reputations of individuals are on the line, they are inclined to produce positive results by any means; this is exactly what happened with Arthur Ellington's eclipse data expedition.

Arthur Ellington, who also happened to be one of the few experts of General Relativity at the time, turned a blind eye to the real cause of the diffraction of light near a gravitational object and misinterpreted results in favor of Einstein's General Relativity that he highly favored. General Relativity itself is utter nonsense. There is no spacetime [4,15]. When Maxwell equations are not transformable onto inertial frames, there is no spacetime function [16,4]. When Lorentz Transform cannot transform Maxwell equations onto inertial frames, there is no spacetime function [17,4]. Lorentz Transform is bogus; it does not exist. Time is not relative. Mass is not relative. Light is not relative. There is no Lorentz force for propagating electromagnetic waves. The path of light is not relative. Maxwell equations for propagation of light cannot be transformed onto inertial frames. The Lorentz Transform cannot transform Maxwell equations onto inertial frames. The Lorentz Transform only transforms static electric and magnetic fields onto inertial frames, not light [16,17]. Lorentz Transform and Special Relativity are not the same. The path of light is unaltered relative to observers in the Lorentz Transform whereas the path of light is altered relative to observers in Special Relativity. You cannot justify Special Relativity using Lorentz Transform. You cannot justify General Relativity using the diffraction of light near the sun. You cannot justify a false time dilation by taking a clock on an airplane around the world; that is ridiculous. You cannot make the false claim that gravity affects time by taking a clock onto a mountain. The Lorentz Transform is not unique. If there is space-time, the space-time function must be unique. Spacetime function is not unique [4].

The spacetime function made its first appearance in the Lorentz Transform. For the spacetime function to exist, the Lorentz Transform must exist. For the Lorentz Transform to exist, the Lorentz Transform must be able to transform Maxwell equations for propagation of light. The Lorentz Transform cannot transform Maxwell equations for propagation of light [16,17,4] and hence the spacetime function has no existence.

Space and time are mutually independent. Space is 3D. Time is not a dimension. Time is a definition. Universe cannot be 4D. No species can function in a 4D or any higher nD universe where n>3. Gravity has no effect on light. Light has no effect on gravity. Observers cannot alter the path of light, speed of light, and the direction of light on its path. Light cannot follow the geodesic. Light cannot take a curved path at constant speed. Gravity cannot slow time. Gravity has no effect on the massless.

Lorentz and Einstein did not transform Maxwell equations for propagation of light onto an inertial frame. Lorentz Transform with Einstein's time dilation factor cannot transform Maxwell equations onto an inertial frame. Einstein made it look transformable by exploiting the non-uniqueness of the Lorentz Transform and covered it up with rhetoric, pure deception. Light does not propagate relative to observers. The path of light cannot be altered relative to observers. The path of any moving entity cannot be altered relative to observers. A moving arrow cannot tilt relative to observers. Observers cannot derail light [15,16].

If you want to see the mockery of Einstein's Time Dilation and Special Relativity, all you have to do is consider a beam of light at an angle [15] on a moving train instead of a vertical beam of light that Einstein used in his thought experiment. If time is falsely assumed to be relative, the time will be directional. Time cannot depend on speed. Time is not relative. Propagation of light is not relative. The mass of an object is not relative. It is not the mass of an object that varies with the speed, it is the mechanism of the measuring instrument that depends on the speed. You cannot transfer your measuring disabilities onto the mass itself. A burst of light does not behave as a golf ball. Light has no momentum. Any entity that has no standstill cannot have momentum. Light does not have a stand still existence. If an entity has momentum, that entity must be stoppable by applying equal and opposite momentum. Light is not stoppable by any means. Light cannot be bestowed upon momentum by proclamation. No physical change can take place relative to observers. It is the path of light that shifts relative to observers. The shift of the path of light relative to observers does not alter the path itself. Observers cannot bend light. Gravity cannot bend light in a vacuum.

Special Relativity based on the false assumption that the path of light is observer dependent. The path of a moving entity cannot be altered relative to observers. Trains do not derail relative to observers. A moving arrow in a train does not tilt relative to observers. Observers cannot bend light. If light is relative as it is assumed in relativity, the space-time function cannot be unique, a contradiction. General Relativity is false. Light is not Relative. If light is relative, time cannot be unique [4]. Time cannot be relative. Mass is not relative. If time is assumed to be relative, the relative time will be directional. Time cannot be directional. Gravity cannot bend light. If gravity bends light, light cannot have a constant speed in a vacuum, yet the General Relativity requires speed of light to be constant in a vacuum.

If space is warpable, what warps the space must be an entity that occupies the space. The mass of an object does not occupy the space. It is the volume of an object that occupies the space. If space is warpable, it is the volume that will warp the space, not the mass. If space is warped by an object of mass, space will generate a resistance to the motion of an object and as a result orbiting systems will not be possible if the space is warpable.

Gravity and acceleration are not the same. There is no acceleration without motion. A stationary object on earth has a force but no acceleration. There is no acceleration without motion along the force. A falling apple has an acceleration. An apple on a tree has no acceleration. Newton's third law F=ma does not apply to stationary objects, where $\partial x=0$, $a=\partial^2 x/\partial t^2$. m≠F/a for a=0 or $\partial x=0$. Einstein's equivalence principle that the General Relativity based on is invalid. Both Special Relativity and General Relativity are invalid in their foundation; they are blind theories. Einstein's space bending theories are utter nonsense. Space cannot bend. Space cannot move. Moving space cannot alter gravitationally bound intergalactic distances. You cannot place galaxies on the surface of a balloon to demonstrate how galaxies move with the expanding space; galaxies on the surface of a balloon will collapse under gravity. Galaxies must themselves be orbiting systems for them to remain free.

Gravity cannot bend light. Gravity cannot warp space. Gravity cannot alter the speed of light in a vacuum. Gravity cannot alter the path of light in a vacuum. Gravity cannot alter time. Gravity cannot. Gravity cannot shift frequency. Gravity cannot shift wavelength in a vacuum. Gravity has no effect on light in a vacuum. Gravity has no effect on the massless. Gravity cannot be a wave. Gravity exists between two masses. A single mass has no gravity. Gravitational field is single. A single field cannot propagate. Propagation requires a conjugate pair. Gravity has no conjugate partner. Gravity cannot be a wave. There are no gravitons or gravity particles. There are no photons or light particles. A burst of light is not a light particle. Gravity between two objects must be acted upon without time delay. Gravity has nothing to do with the speed of light. A moving object has nothing to do with the speed of light.

Property:

If gravity bends light, light cannot have constant speed in the presence of a gravitational object even in a vacuum. If the speed of the light is a constant in a vacuum, the path must be linear irrespective of gravity. Bending of light cannot take place if the speed of light is a constant. Constant speed of light and gravity bending light cannot co-exist. The speed of light cannot be a constant on a curved path. Light doesn't follow the geodesic. The path of light is not confined to geodesics. A beam of light orthogonal to the geodesic does not follow the geodesic.

Lemma:

Gravit has no effect on the massless. Gravity cannot bend light. A gravitational object cannot bend light in a vacuum. Gravity generates a density gradient in the medium that it surrounds. The density gradient of the medium bends light.

Lemma:

The path of a moving entity, the direction and the speed of the moving entity on its path are observer independent. It is the path of a moving entity that shifts relative to observers. The shifts of the path of a moving entity relative to observers does not alter the path.

Lemma:

Both Galileo Relativity and Einstein's Relativity are incorrect. Observers cannot derail a train. Galileo derailed trains. Observers cannot derail light. Einstein derailed light. Observers cannot tilt a moving arrow. A burst of light is a massless moving arrow.

The refraction of light near the sun is not a result of aravity bending light. Gravity cannot bend light. Gravity creates a density gradient of the medium near the sun. It is the density gradient of the medium near the sun that refracts the light [5, 4]. You cannot use the refraction of light near a gravitational object to substantiate General Relativity unless you can demonstrate bending of light in a vacuum near a gravitational object, which is impossible. Arthur Ellington's use of the diffraction of light near the sun during an eclipse to substantiate General Relativity is an experimental interpretation blunder, an intentional deceptive misinterpretation for personal glory. Experiments are done for a purpose and they use every possible effort to exploit the observations to justify that purpose. That is why experimental misinterpretations that shamelessly cross the boundary into voodoo physics are quite common in Physics.

The use of diffraction of light near the sun to justify General Relativity is one such voodoo physics effort. The use of the Double-Slit experiment to justify de Broglie's preposterous particle wave is another voodoo physics effort. Spiral pairs in Anderson's cloud chamber experiment represent (electron, proton) pair, not a (electron, positron) pair. Anderson misinterpreted the cloud chamber observations to falsely justify Dirac equations. Mathematical symmetry in Dirac equations does not represent anti-particles. Dirac's equations are invalid since light is not relative and Einstein's Special Relativity is false. Hubble's misinterpretation of the star redshift to make the false claim that the universe is expanding is voodoo physics [12]. These are just a few of many misinterpretations. Modern Physics is full of voodoo Physics observation misinterpretations. The voodoo physics claim that a

particle can be in multiple places simultaneously tops them all and demonstrates the insanity of physicists. In Physics, experimenters are shameless to make any preposterous claim to justify the experimental results.

Gravity does not bend light in a vacuum. If gravity bends light in a vacuum, the speed of light cannot be a constant in a vacuum. Light cannot take a curved path without the change of speed. If there is a bend in the path of light, that means the speed of light is not constant. You cannot have a constant speed of light on a non-linear path. The speed of light in a vacuum is constant and the path is linear irrespective of the presence of gravitational objects. A blackhole in a vacuum cannot attract light. Irrespective of the size of the gravitational object, the effect of a gravitational object on light is always through a medium. It is always a medium that mediates an interaction between light and a gravitational object. Both the path of light and the speed of light on its path are independent of observers and gravity.

Lemma:

Bending of light in a vacuum in General Relativity is self-contradictory. If gravity bends light in a vacuum, the speed of light cannot be a constant in a vacuum, without which neither Special Relativity nor General Relativity has an existence.

Lemma:

There is no bending of light near a gravitational object in the absence of a medium surrounding the gravitational object. It is the density gradient of the medium that bends light, not the gravity itself. General Relativity has no validity.

XVIII. FUNDAMENTAL ELEMENTS OF A PARTICLE CANNOT BE DISCOVERED BY COLLIDING CHARGE PARTICLES IN A PARTICLE COLLIDER SUCH AS LARGE HADRON COLLIDER (LHC)

Has anybody ever seen a Higgs Boson? No. They have interpreted two light bursts as a result of the decay of a Higgs Boson. Experiments provide data. Colliders provide a path of the debris after a collision. So, the validity of finding new particles is as good as the interpretation and the analysis of data. If you use equations that are invalid, your results will be invalid and the discovered particle will not be real. If you fail to filter out the components that are extraneous to the split of the particles themselves, the results will be invalid and the discovered particles will not be real.

High-Speed Particle Accelerators are billion-dollar wonders and they are awe inspiring. However, all they provide are the tracks of debris from collisions. The validity of the discovery of new particles from the debris depends on the validity of the equations used in the analysis of the tracks. Billion-dollar wonder soon becomes a billion-dollar blunder if the equations used in the analysis of the debris of a collision happen to be false. We have already shown that Special Relativity is both mathematically and conceptually false [15,16,4]. So, if the analysis of the debris of collisions in Particle Accelerators are carried out based on

Special Relativity, the result will also be false; in that case, you will end up with discovering particles that are not real, that have no real existence. In addition, the debris must only contain what resulted from the split of particles, nothing else. If the stopping of particles generates radiation, then that radiation is present at the crash site as a contaminant. These contaminant-radiation must be removed for the proper analysis of the debris. If the analysis is carried out without filtering out the contaminant, the discovered particles will be an anomaly rather than real particles present in the debris. When it comes to the discovery of fundamental particles of nature by using the collisions in Particle Accelerators, a billion-dollar wonder can easily become a billion-dollar blunder unknowingly.

The discoveries of particles and their lifetime in particle accelerators are based on two equations; the relativistic energy of a particle from Special Relativity Special Relativity and the Heisenberg Uncertainty Principle. The relativistic energy of a particle in Special Relativity is given by,

 $e^2=(pc)^2+(mc^2)^2$ (18.1) The solution to this equation is given by $e=pc\pm jmc^2$ [14,13]. Relativistic energy is not real, not unique. Energy must be real and unique. Relativistic energy cannot exist.

The Heisenberg Uncertainty Principle is given by,

∆x∆p≥h	(18.2)
∆e∆t≥h	(18.3)

where, Δx is the uncertainty of position, Δp is the uncertainty of momentum, Δe is the uncertainty of energy, and Δt is the uncertainty of time.

Since $p=m\partial x\partial t$, the precision of momentum is directly related to the precision of position, not inversely, the position and momentum of a particle cannot be a Fourier Transform pair since a mass cannot be in infinitely many places simultaneously. The Uncertainty Principle cannot hold.

They measure the energy and the momentum of a particle and use $e^2=(pc)^2+(mc^2)^2$ to obtain the mass m. When a particle has a very short lifetime that is not measurable, it is calculated using the Heisenberg Uncertainty Principle in the limit $\Delta e \Delta t$ =h. A particle with a shorter lifetime has a heavier mass and a one with a longer lifetime has a lighter mass.

The discovery of new particles including the Higgs Boson rely on Einstein's Relativity and Heisenberg Principle. So, the validity of the discoveries of new particles rests on the validity of Einstein's Special Relativity and the Heisenberg Uncertainty Principle. As we have seen, Special Relativity is both mathematically and conceptually invalid. If the position and momentum of a particle is assumed to behave as a wave, the Position Operator cannot be the position itself and if the Position Operator is chosen to be the position itself, the position and momentum of a particle cannot be assumed to be a wave. A particle of mass cannot be in multiple places simultaneously. The position and momentum of a particle cannot be a Fourier Transform pair and hence the Heisenberg Uncertainty Principle is invalid. The discovery of new

particles in particle accelerators is based on an invalid foundation.

The relativistic energy of a particle is $e^{2}=(pc)^{2}+(mc^{2})^{2}$ is a result of the false assumption time and mass are relative. The mass of an object cannot be relative. Time is not relative. Lorentz-Einstein Physics is a result of a mathematical oversight, deception, or blunder. Maxwell equations for light cannot be transformed onto inertial frames [17,4]. The mass must be conserved. Mass and energy are not equivalent. Mass cannot be converted to energy. You cannot generate a mass by dividing hf by c². Light has no mass, no momentum. Light cannot exist without mass. If the relativistic energy of a particle is $e^2=(pc)^2+(mc^2)^2$, then, there are two solutions to e. One solution is $e=pc+jmc^2$ and the other is $e=pc-jmc^2$. If the relativistic energy of a particle is $e^2 = (pc)^2 + (mc^2)^2$, the energy will not be real and the energy will not be unique [14].

The relativistic energy $e^2=(pc)^2+(mc^2)^2$ is based on the assumption that the time is relative and the relative time t' is given by t'= γ t, where $\gamma=1/(1-v^2/c^2)^{1/2}$. Einstein's relativistic time t'= γ t is incorrect. If time is assumed to be relative and the path of light is assumed to be relative, then the relative time depends on the angle θ of a beam of light to the direction of the train, t'= $\eta(\theta)$ t [15]. When $\theta=\pm\pi/2$, $\eta(\theta)=\gamma$. Einstein's relative time is given by t'= γ t only when $\theta=\pm\pi/2$, $\eta(\theta)=\gamma$. Einstein's bizarre Relative Time Dilation Factor or Relativity Factor only holds for $\theta=\pm\pi/2$. It does not hold for any other direction [15]. It cannot be forced upon any other direction just by forcing the average length to contract in the direction of motion as Einstein did in Special Relativity [15,16].

If time is assumed to be relative, time is directional. If Einstein had considered a beam of light at an angle in a moving train instead of a vertical beam of light in a moving train in his thought experiment, he should have realized the mockery of Time Dilation Factor and Special Relativity. You cannot consider a time dilation factor in the direction orthogonal to the direction of motion of a frame and force it into other directions because each direction has its own unique time dilation factor. If time is assumed to be relative, the time will be directional. Observers cannot bend light. The path of light cannot be altered relative to observers. Maxwell equations cannot be transformed onto inertial frames [16,4]. Einstein Special Relativity is a mathematical and conceptual blunder.

Theorem: Dilation Factor $\eta(\theta)$ at Angle θ

When time is forced to be relative, the relative time is directional. The time dilation factor in Special Relativity is directional. For a burst of light traveling at an angle θ to the direction of motion of the Einstein train, the relative time t' and relative distance d' are given by, t'= $\eta(\theta)$ t d'= $\eta(\theta)$ d, where d is the distance traveled at time delay t at an angle θ . The time dilation factor $\eta(\theta)$ at any angle θ in Special Relativity, the hidden equation, is given by,

 $η(θ)=γ^{2}[(v/c)cos(θ)+(1-(v^{2}/c^{2})sin^{2}θ)^{1/2}],$

where, $\gamma = 1/(1-v^2/c^2)^{1/2}$, $-\pi \le \theta \le \pi$.

When $\theta = \pm \pi/2$ or 90°, $\eta(\pm 90^\circ) = \gamma$.

The average $\eta(\theta)$ for $\theta=0^{\circ}$ and $\theta=180^{\circ}$ is given by, (1/2)($\eta(0^{\circ})+\eta(180^{\circ})$)= γ^2 . Special Relativity forces this average Time Dilation Factor to be γ simply by forcing the average length for $\theta=0^{\circ}$ and $\theta=180^{\circ}$ to contract by the factor $1/\gamma$. This does not make γ the Relativity Factor for the entire frame for any direction. For any direction,

 $\eta(\theta) = \gamma^2 [(v/c)\cos(\theta) + (1 - (v^2/c^2)\sin^2\theta)^{1/2}].$

The average Time Dilation Factor does not apply for one directional motion. As a result, Special Relativity based on the average forward and backward relative time does not apply for real-time system dynamics. Special Relativity cannot describe real-time systems. Special Relativity cannot describe splitting of atoms, collision of particles, or radioactive decay.

Einstein's ubiquitous Time Dilation Factor or Relativity Factor $\gamma = 1/(1-v^2/c^2)^{1/2}$ does not apply for any direction on a reference frame. Einstein's time dilation Factor or Relativity Factor is not applicable for the entire frame. The mass of an object is not relative. Time is not relative. Observers cannot tilt a moving arrow. Observers cannot bend light. The path of a moving entity is unaltered relative to observers. Light is not relative [17,4,15]. The relativistic energy $e^{2}=(pc)^{2}+(mc^{2})^{2}$ of a particle is invalid; it is meaningless. And hence, the so-called new particle discoveries in particle colliders are bogus. Einstein's Special Relativity is bogus. Light is not relative. A mass at rest cannot have speed c and hence rest energy $e \neq mc^2$ relative to light since light is not relative. A mass cannot have energy e=mc² unless the mass starts at speed c and remains at speed c, which is not possible. The rest kinetic energy of a mass is an oxymoron. The so-called new particle discoveries are bogus in their very foundation.

Light has no momentum. Light is not particles. Particles are not waves. Light cannot be given momentum by proclamation. Mass cannot be converted to energy since energy has no existence without mass. Light has no energy. Light has electromagnetic potential energy. Electromagnetic potential energy is not energy unless it is converted to kinetic energy of charge particles. Light has no effect on electrically neutral particles. The interaction of light with particles is not a collision of momenta. Light is a momentum generator on charge particles. The momentum is not conserved in the presence of light.

If you want a billion-dollar blunder in Physics, you do not have to search far. The Large Hadron Collider (LHC) is one such blunder [6,9]. Electrons, protons, and neutrons were not discovered using accelerated particle collision. Yes, if we want to investigate if protons themselves are made of fundamental particles, we have to break the protons into smaller pieces to find it out. To break protons into small pieces, we can accelerate them to high velocities and bring them into collision. Now the question is, can we obtain the fundamental particles that protons are made of by accelerating them to a high-speeds and bringing them into collision. No, you cannot obtain the fundamental particles of nature by colliding charge particles to very high speeds.

You cannot generate mass by colliding particles. A mass in a closed system cannot decay. The generation of electromagnetic waves does not result in a mass loss. The mass is a fundamental property of a particle. There are no massless particles. A light burst or a burst of electromagnetic waves or light have no mass, no momentum, no energy, no temperature, no heat, no entropy.

The claim in Special Relativity that the mass of an object increases with speed is utter nonsense, simply preposterous. The mass of an object neither can increase with speed nor lose in a split. The energy released during the split of an atomic nucleus is binding energy. Release of the binding energy does not result in a loss of mass. Atomic energy is not a result of a mass loss. Atomic energy has nothing to do with the speed of light, $e \neq mc^2$. Light is not relative and hence a rest mass does not have speed c relative to light [4,15,16]. The mass must be conserved.

There is no energy without an association with a mass and hence mass cannot be converted to energy. If light has energy, why is outer space so cold? Light is useless without electrons, charge particles, Cosmic Microwave Background (CMB) is a result of the sparsely distributed charge particles in space; CMB is not some remnant from a bigbang. The concept of bigbang is nonsense. If it is not for the sparsely distributed charge particles present in outer space, there would be no temperature or comic background temperature. Electromagnetic potential energy is not energy unless it is converted to the kinetic energy of a charge particle. There is no interaction of matter and electromagnetic waves or light without charge particles. Light has no interaction with electrically neutral particles. Interaction of light with matter is not a collision of momenta.

The generation of electromagnetic waves in a Synchrotron is not a result of bending of electrons on a circular path. An electron at a constant speed on a circular path does not generate radiating electromagnetic waves. There is no displacement in the direction of the centrifugal force for an electron traveling on a circular path at constant speed and hence there is no energy loss. It is the acceleration of an electron on a circular path in a Synchrotron that generates electromagnetic radiation in a Synchrotron. The frequency of radiation generated by a Synchrotron is proportional to the acceleration of electrons.

Einstein's Relativity is utter nonsense [15,16,4]. The mass of an object does not increase with speed. You cannot obtain a mass by dividing electromagnetic energy by c^2 . What does mass have to do with the speed of light? Nothing. If you divide hf by c^2 , what you get is nonsense, not mass, m#hf/c². Frequency has no energy. The energy that is released in the splitting of an Atomic nucleus is the binding energy of

the nucleus. Mass cannot be converted to energy. Energy has no existence without mass. There cannot be a mass loss in a splitting of a nucleus. What is released in a splitting of a nucleus is electromagnetic radiation. The release of radiation in the split of the nucleus of an Atom does not result in a mass loss in a closed system. This electromagnetic radiation is transformed to energy when electromagnetic waves encounter electrons in matter. The generated kinetic energy on charge particles by electromagnetic waves is a function of not just the frequency, but also the amplitude of the radiating electromagnetic waves.

You cannot give electromagnetic waves a mass just dividing the electromagnetic potential energy by c^2 . There is no massless energy. Mass has nothing to do with the speed of light. The energy of a mass does not depend on the speed of light unless the mass is traveling at the speed of light. There is nothing preventing a mass traveling at the speed of light. Propagation of light is not relative. A rest mass has no speed relative to light since light is not relative. An entity that has no standstill existence cannot be relative and cannot have momentum. For e=mc² to hold, light must be relative, light must have standstill existence. Light has no standstill existence. Light has no existence without propagating. A rest mass has no rest energy relative to light, $e \neq mc^2$. Planck's energy e=hf is meaningless since frequency has no existence without amplitude. $e \neq hf$.

Mass and energy are not equivalent since energy has no existence without mass. Mass in a closed system is conserved. Energy is the kinetic energy of masses. Not all the energies are the same. Potential energy is not energy until it is converted to kinetic energy of masses. Light has no energy. Light has no temperature. Light has no heat. Light has no entropy. Light is useless in the absence of charged particles. There is no light without charge. Electromagnetic waves have potential energy. Electromagnetic potential energy of charge particles. Light has no effect on electrically neutral particles. Light generates energy on charge particles. Light is a momentum generator on charge particles.

When you collide charge particles at high speed, they generate radiation extraneous to particles themselves. This extraneous radiation has nothing to do with the constituents of the particles themselves. If you want to find the elementary components of a particle, the electromagnetic radiation generated by the stopping of the charge particles in a crash must be removed from the crash site. This extraneous radiation is not a product of the disintegration of the particles themselves. This extraneous radiation is non-separable from the crash site. It is the interpretation of this extraneous radiation as new particles generated by collision that led to the false impression of mass generation. Although a magnetic field can be used to distinguish the path of an electromagnetic radiation burst from the path of a charge particle, a magnetic field cannot be used to distinguish the paths of a l;ight burst from the path of a

neutral particle.

When fast moving charge particles are brought to a sudden stop by a collision, the sudden deceleration of the charge particles generates radiation bursts. The change of chomentum, $\Delta(qu)$, generates radiation, not the change of momentum, where q is the charge and u is the speed of the charge. These radiation bursts are contaminants at the site of collision. These extraneous radiations are not a result of the disintegration of the particles themselves. It is this extraneous radiation that gives different results for every collision. If this extraneous radiation is not there, you do not have to keep colliding particles thousands of times; all you need is one collision.

In the absence of extraneous radiation, every collision should give the same result. This extraneous radiation has turned the Large Hadron Collider (LHC) into a clairvoyant's 8th ball; you can use it to prove anything you want; you can see in it what you want to see. If you keep colliding particles, you may get lucky and hit the jackpot occasionally and find the right mixture of extraneous radiation to prove whatever you want to prove, just like the discovery of the so-called Higgs Boson. The Higgs field cannot exist as a wave or as a static field. There are no mass generating or mass giving particles. A field cannot be an outcome of an exchange of particles. A single field cannot propagate. A single field cannot be perturbed. The so-called mythical wave particles cannot reside in a single field. There are no special fields generating particles unto themselves.

A single field cannot propagate. Propagation requires a conjugate pair of fields. Gravity is single. Gravity does not have a conjugate partner field. Gravity cannot propagate. Gravity cannot be a wave. Gravity cannot be a result of exchange of particles. Gravitational field is static. Static field has no existence without an anchorage to its source. There are no gravitons since the gravitational field is static and single. A single static field cannot be disturbed. Gravitational field can exist since it has a source that it can anchor to. On the other hand the Higgs field is single. The Higgs field cannot propagate since it is single or does not have a conjugate partner. A single field cannot exist without an anchorage to its source. As a result, the Higgs field cannot even exist as a static field since there is no Higgs source. There are no Higgs bosons. There are no gravitons. Gravity cannot be a wave. There are no gravitational waves. Gravitational waves are fantasy waves. LIGO is a fantasy wave detector.

There is no force carrying mysterious particles. A field is not a result of an exchange of particles. Electromagnetic field is not an exchange of particles. There are no light particles; it is a misnomer. Einstein's photon derivation is incorrect and meaningless. Coherent light cannot consist of spatially random particles. Light in a vacuum does not have entropy. Light in a vacuum does not have temperature. Boltzmann entropy cannot be applied to light as Einstein did in his derivation of photon or light quanta. The energy of a so-called hypothetical light

quanta or photon cannot be given by e=hf since frequency has no existence without amplitude. If light consists of spatially random light quanta, coherent light rays cannot exist. If energy is quantized as e=hf, the energy of a continuous spectrum would be infinite. If energy is quantized as e=hf, the Spectrum cannot be continuous. If the Spectrum is continuous, energy cannot be quantized as e=hf. Planck's e=hf has no existence since frequency has no existence without amplitude.

Gravitational force is not an exchange of particles. You do not need to invent another mass giving particle for a particle to have a mass. The mass of a particle is a fundamental property of a particle. It is not a derived property. A life giving particle is not required to have a life. There are no life-carrying souls or spirits. There are no gravity carrying particles or gravitons. There are no light carrying particles or photons. Propagation of light is not an exchange of photons. Light waves are not probability distributions of finding photons. A probability distribution does not propagate. There are no mass giving particles or Higgs Boson. There are no Bosons since there are no integer Spins or spin quantization. Spin is a vector. Vectors cannot come in quanta. Bipolar Spins cannot come in unipolar Up and Down quanta. Pauli's 2D matrices have no existence since Spin monopoles have no existence. If you replace the x, y, z components of an Angular Momentum Operator by the Pauli's x, y, z Spin matrices the resulting Matrix is no longer an Operator of observables. Matrix operators cannot exist in Quantum Mechanics.

There are no light particles, photons, or light guanta. There are electromagnetic wave bursts. There are no Fermions since there are no Spin 1/2. Quantum spin is meaningless. Spin is 3D and bipolar. Up and Down spins are perfectly correlated negatively and cannot be represented by 2D orthogonal vectors. Sopin-Up and Spin-Down cannot be states of a particle without Spin Monopoles. There are no Spin Monopoles. Light has no spin. Every spin does not generate a magnetic field. Spin magnetic field is static. Propagating magnetic fields are not spins. Polarities of light are not spins. Polarity is unipolar. Spin is Bipolar. Unipolar Polarities of light cannot be used to simulate Bipolar Spins of particles. Horizontal Polarization can exist without Vertical Polarization and vice versa. However, Spin-Up has no existence without Spin-Down and vice versa. Horizontal and Vertical Polarizations are orthogonal. Up is just the negative of Down and vice versa. Up and Down are not orthogonal. Up and Down are perfectly correlated negatively.

There are electrons and protons. If it is a particle, it has a mass. There are no massless particles. There are no anti-particles. Anti-Particles are a result of experimental misinterpretation of Anderson's cloud chamber experiment. Two spiral paths used to make the claim for a (electron, positron) pair cannot represent the paths of electrons and positrons since they are not the same even though they are in opposite directions. The spiral paths must be the same in opposite directions to make the claim that they represent an electron and positron since electrons and positrons, if they exist, must have the same mass. The paths are opposite to one another since they have the same charge.

A wave is a wave, not a particle. A particle is a mass, not a wave. De Broglie waves are waves of human insanity, not particle waves. There are no fractional Spins. There are no integer Spins. Spin cannot be quantized since there are no Spin Monopoles. Electromagnetic fields and gravitational fields are not results of particle exchanges. It costs energy to exchange particles. It costs energy to exchange a mass. It takes time for an exchange. The gravitational effect between two masses cannot have a time delay. There are no photons. There are no gravitons. Light bursts are not photons. If light consists of spatially random photons, there cannot be coherent light. Mass and associated gravitational fields are a single entity.

Lemma:

A single mass has no gravitational field. Gravity is the interaction between masses. There is no gravitational field without the interaction of two masses. Mass of an object and its gravitational field of infinite span are a single entity.

XIX. PATH TO LHC ENLIGHTENMENT

- Special Relativity is invalid and it is utter nonsense [15,16,4]. Time and mass are absolute. There is no rest energy. There is no relativistic energy. If you want to see the mockery of Special Relativity, consider a beam of light at an angle in a moving train.
- e²=(pc)²+(mc²)² is invalid since time and mass are not relative. If e²=(pc)²+(mc²)², the energy e will not be real [14,15].
- Einstein's relative energy of a particle, e²=(pc)²+(mc²)² cannot give the mass m of a particle for the observed energy and observed momentum of the particle. New particles obtained by applying relativistic energy e²=(pc)²+(mc²)² to Particle Accelerator data are not real; they are bogus.
- Position and momentum of a particle of mass cannot be a Fourier Transform pair. The Heisenberg Uncertainty Principle does not hold. The relationships $\Delta x \Delta p \ge h$ and $\Delta e \Delta t \ge h$ do not hold. $\Delta e \Delta t \ge h$ cannot be used for obtaining the half-life for observed energy of a particle.
- Half-lifetimes of particles obtained by applying Heisenberg Uncertainty Principle to Particle Accelerator data are not real; they are bogus since Heisenberg's Uncertainty Principle does not hold.
- The calculations that have been used to discover new particles in Particle Colliders are dubious.
- Anti-matter is a result of experimental misinterpretation. There is no antimatter.
- Light is not particles. Particles are not waves. A particle cannot be in multiple places

simultaneously.

- Einstein's e=mc² is the kinetic energy of a rest mass relative to light. Light is not relative. Light has no standstill existence. A rest mass cannot have relative speed c and relative kinetic energy e=mc² relative to light, e≠mc². No mass can have a relative speed relative to an entity that has no standstill existence.
- The split of the nucleus cannot cause a mass loss. e≠mc². The release of electromagnetic waves from the split of a nucleus does not cause a mass loss.
- Mass cannot be converted to energy since energy has no existence without an association of a mass. Light has no energy. Electromagnetic potential energy is not energy unless it is converted to kinetic energy of charge particles, electrons. Electromagnetic waves have no mass. Electromagnetic potential energy cannot be converted to mass.
- Mass and energy are not equivalent. Mass cannot be converted to energy. Energy cannot be converted to mass.
- The generation of electromagnetic waves does not cause a mass loss.
- Mass must be conserved since there cannot be energy without an association of a mass.
- Time and mass are absolute.
- If a particle is assumed to behave as a wave, the Position Operator cannot be the position itself and vice versa.
- Mass and energy are not equivalent.
- There is no energy in the absence of mass.
- The massless has no energy.
- A rest mass has no kinetic energy, e≠mc².
- Collision of Particles does not generate mass.
- Mass is independent of speed or acceleration.
- Mass in a closed system conserved.
- The interaction of light and matter is not a collision of momenta.
- Light is not relative. Light has no momentum.
- A moving arrow cannot tilt relative to observers.
- The path of a moving entity cannot be altered relative to observers.
- Observers cannot bend light.
- Galileo derailed trains. Einstein derailed light. They are catastrophic mistakes in Physics that paved the way to voodoo Physics.
- If a particle is falsely assumed to behave as a wave, the Position and Momentum Operators are determined by the plane wave equation and they commute. We cannot define the Position Operator as the position itself.
- Light in a vacuum has no momentum, no energy, no temperature, no entropy. Light is simply useless in the absence of charge particles. There is no light in the absence of charge particles.
- Light is a momentum generator. Light generates momentum on charge particles.
- Light has no effect on neutral particles.
- Gravity has no effect on light in a vacuum.
- Collision of charged particles generates

extraneous radiation. It is the invalid representation of the extraneous radiation as particles that gave the impression of mass creation in charge particle colliders.

- Electromagnetic Radiation is not relative and hence has no effective mass [4].
- Electromagnetic Radiation is not particles. Light bursts are not particles.
- Outcome of colliding charge particles is not the same as the outcome of colliding neutral stable particles; the outcome is completely different.
- Fundamental Elements of a Particle cannot be obtained by colliding charge particles since the radiation due to the stopping of the particles in a collision cannot be separated from the radiation due to the disintegration of the particles in the collision.
- By colliding neutral stable particles, it is possible to unravel constituent elements of the neutral particles. However, particle accelerators are useless for colliding neutral particles. It is not possible to accelerate neutral particles in accelerators.
- Large Hadron Collider is a Billion-Dollar Blunder Hidden in the Swiss Alps. A Crafted Prophecy (CRAP) generator.
- An electron traveling on a circular path does not generate radiation. In a Synchrotron, what generates electromagnetic waves is the changing speed of a circular path. The turning of an electron on a circular path at constant speed does not generate electromagnetic radiation. An electron on a circular orbit in an Atom does not radiate.
- Just because Physicists describe the production of gamma radiation in the radioactive decay of a proton by using hypothetical positrons does not mean positrons exist. The two spirals in Anderson's cloud chamber experiment cannot be attributed to the electron-positron pair since those two spirals of opposite direction are not equal. There is no antimatter. Mathematical symmetry is not required to have a physical symmetry.
- If galaxies are moving away radially, then all the stars in a galaxy must have the same redshift. The redshift of a star in a galaxy cannot be attributed to the motion of galaxies. Hubble's v=Hd is false and meaningless, where v is the radial speed of the galaxy, H is the Hubble Constant, d is the distance to the galaxy.
- Universe is not accelerating. The increasing redshift of a star is a result of the increase of the medium density surrounding the stars due to the accumulation of ejected matter from the stars with time.
- If the H is a constant in the Hubble's Law v=Hd, and the age of the universe is given by 1/H, then the age of the universe will be a constant, forever young. Hubble's Law is invalid and the age of the universe cannot be a constant given by 1/H.
- The redshift of a galaxy cannot be attributed to a universe expansion. Universe is not expanding.

- No special Relativity is required. No Dark Matter is required. No Dark energy is required.
- Einstein's theories are bogus and have no place in physics. Particle accelerator evaluations are misguided adventures.

If you want to find the elementary components of a particle you cannot discover them by colliding charge particles. You must collide neutral and stable particles. You cannot accelerate neutral particles in an accelerator. A particle accelerator is useless in finding elementary particles of nature.

Colliding charge particles in an accelerator in the hope of discovering the fundamental elements of nature is simply a useless costly exercise. The Large Hadron Collider (LHC) is a billion-dollar blunder. All the particle accelerators are useless unless means to separate the extraneous radiation due to the stopping of charge particles in a collision from the crash site is found. This is an impossible task since extraneous radiation is non-separable from the electromagnetic burst due to the disintegration of the particles [9].

There may be a way out of this dilemma if and only if the extraneous electromagnetic waves generated by the stopping of charge particles are in a different frequency band from the frequency band of the electromagnetic waves generated bv the disintegration of the particles into their constituent elements. The frequency of the extraneous radiation is determined by the charge of the particles and the speed of the charge. Hence, the speed of the charge particles can be adjusted so that the frequency of radiation generated as a result of the stopping the charge particles at the collision is out of the frequency band of the electromagnetic wave bursts that resulted from the disintegration of the particles themselves. In this case, we can directly filter out the extraneous radiation that has nothing to do with the disintegration of the particles. However, the non-overlapping frequency bands cannot be guaranteed since we have no prior knowledge of the frequencies that result from the disintegration of the particles themselves.

We cannot expect the two frequency bands to be non-overlapping. If the two frequency bands are non-overlapping, in order to isolate the extraneous radiation, all we need to know is the frequencies of the extraneous radiation. As we have seen, the wavelength of the extraneous radiation due to the stopping of a particle of charge q and mass m at speed u is given by $\lambda = \eta(1/qu)$, where η is the radiation constant. As you might have already guessed, the wavelength of the radiation is a result of the change of chomentum qu, not the momentum mu. Particles are not waves.

The momentum only has an indirect effect on the radiation since it determines the speed of a charge, which is the same as the speed of a particle. Finding a way to Filter out the extraneous radiation is the only possible way we can turn around the useless Particle Colliders such as the Large Hadron Collider into something useful; it is worth the try since we have already spent billions of dollars and years on it. If there is no separation between the frequency bands, it is not possible to separate the extraneous electromagnetic waves from the crash site. Without separating extraneous radiation, you cannot discover the elementary particles of nature by colliding charge particles and hence LHC will be useless. The particle zoo that we have today is a result of not removing the extraneous radiation from the crash site. If the extraneous radiation is removed from the crash site, the result for each collision would be the same and we do not have to keep colliding the same particles.

Today, what the Large Hadron Collider produces is simply garbage. You can go on colliding mindlessly since the extraneous radiation is different in each collision hoping to find the data to prove whatever you want; magician's or soothsayer's 8th ball. If you keep colliding, once in a while, you will hit the jackpot and find a data set that matches what you want to prove, which in fact proves nothing; pure deception. A theory based on deception requires an experimental deception for its justification. Physicists are fooling themselves just for the sake of holding onto their jobs, not for the advancement of science.

XX. BIPOLAR SPINS DO NOT HAVE UNIPOLAR UP AND DOWN

Orbiting systems such as Atoms spin. Even though an Atom is neutral, a spinning Atom has a Spin Magnetic Moment. Spin is Bipolar. Bipolar spins have no unipolar Up or Down. Spin can be either Spin-Up or Spin-Down relative to an Observer. One person's Spin-Up particle can be Spin-Down for another Observer. If you are in North America, what is the Spin of the Earth? Now, phone someone in Australia and ask what the Spin of the Earth is. The answer is the complete opposite of yours. If the direction of a Spin, Spin-Up or Spin-Down, is a state of a particle, the answers must have been the same. The answers are different because the direction of a Spin is not a state of a particle. If the Spin-Up and Spin-Down are states of a particle, they should not vary from Observer to Observer; they should also be independent of the location of an observer. The direction of Spin of a particle is Observer Dependent. Observer Dependent Quantities CANNOT come in Quanta. Observer dependent Quantities CANNOT be Quantized. Nature cannot quantize what is in an observer's mind. Spin is Bipolar. Spin cannot be quantized into unipolar Up and Down because there are no unipolar Spin-Up or unipolar Spin-Down. Spin-Up has no existence without Spin-Down and vice versa and hence Spin-Up and Spin-Down cannot be represented by 2D orthogonal vectors. Spin cannot be represented by 2D Pauli Matrices. Matrix Operators cannot be in Quantum Mechanics.

Polarization of light is not a Spin and has nothing to do with Spin. Polarization is Unipolar. There are waves of Vertical polarization and Horizontal polarization and many other polarizations. Polarization of light is not bipolar. Polarization of light is not a spin. So, stop using the polarization of light to make false claims about Spin. If you are implementing Q-Bits using the Polarization of light, you are not building Quantum Computers, you are building optical processors. Q-bit based on polarization of light is not a Quantum Bit; it is an Optical Bit (O-Bit). You cannot simulate Spin of a particle using the Polarization of light.

XXI. ENTANGLEMENT AND ACTION AT DISTANCE (NOTHING SPOOKY HERE)

A change of one object at one location cannot affect another object at distance location unless there is some coupling between them. There is no mysterious voodoo connection between distant particles. If some changes in one particle affect another particle at a distance, they must be coupled gravitationally. electrically, magnetically, or electromagnetically. There are no magical voodoo connections between particles in nature. There are no voodoo spirits flying around, they only exist in the human mind stuck in outdated religious doctrines, human hallucination, or in human insanity. It was the mental hallucination under fasting that made for some people to declare themselves as messengers of God in the dark ages or earth centric era. If somebody does the same today, he/she would be a laughing stock of the town.

Property:

Change of orientation of one magnet affects another magnet at distance. Atoms are magnets due to their Spin Magnetic Moment (SMM) and they are magnetically coupled. The change in the orientation of one Atom affects the orientations of the other Atoms that are magnetically coupled at a certain distance.

The effect of gravity extends to an infinite distance although the magnitude of effect decreases inversely with the square distance. There is nothing spooky about action at a certain distance. You press a button on your remote, the garage opens; you click a mouse, money transfers from one country to another; they work because these entities are coupled. When you make some changes to an Atom X situated here, if it affects the Atom Y there at a distance, then those Atoms X and Y are magnetically coupled since each Atom consists of its own Spin Magnetic Moment due to the Spin of the nucleus, but this effect is at very close distance in the absence of other external magnetic fields. The entangle particles magnetically coupled particles. There is no other voodoo connection between particles. You do not need to evoke a hypothetical mysterious voodoo connection to explain the action at distance.

All atoms are orbiting systems. Every orbiting system has a Spin. In the case of atoms, the Spin of an atom also generates a Spin Magnetic Moment μ . Every atom, irrespective of whether it is electrically neutral or charged, has its own Spin Magnetic Moment μ that results from the atomic spin. Because of this Spin Magnetic Moment of an atom, every atom is a little magnet that is free to orient itself subjected to the magnetic forces of the environment the Atom is in.

As a result, nearby Atoms are magnetically coupled.

Lemma:

Entangled particles are magnetically coupled. There is nothing spooky about action at distance between Magnetically Coupled Particles.

Lemma:

Spin of a particle cannot be measured using Stern-Gerlach Device. Stern-Gerlach Device is not a Spin measuring Instrument. This device forces a single Atom to always orient in the direction of SGMF (Spin-Up) while it is in the SGMF. If there are two Atoms, the orientation of the following Atom is always against the previous Atom (Spin-Down) while they are in the SGMF. This forced orientation by SGMF is volatile. Stern-Gerlach Device cannot set the spin of a particle permanently. Stern-Gerlach Device cannot be used to measure the x, y, z components of a spin magnetic field of an atom or a charge particle.

Lemma:

The outcome of the Stern-Gerlach Experiment cannot be used to substantiate spooky probabilistic entanglement of particles since the outcome of the Stern-Gerlach Experiment is deterministic; there is no probability here. Bipolar spins cannot have unipolar Up and Down states. The Up and Down orientation of Stern-Gerlach Device is deterministic and both Up and Down beams in the Stern-Gerlach Device have equal number of atoms.

A. Nature's Abhorrence:

Nature abhors the probability. Humans invented probability for gambling. We embrace probability for objective decision making for the purpose of exploiting the planet to the maximum in the absence of the knowledge of underlying physics. Nature may start to abhor humans as well if we consider ourselves above nature, not as a part of nature.

Corona-Virus December-2019 (COVID-19) can be one of the signals by nature to put us in our rightful place for our treatment, rather mistreatment, of animal species and nature, and for our arrogant presumption that all the species are given to us for our exclusive use or consumption by a creator. COVID-19 certainly demonstrated who is the boss. A creator is a concept of flat-earth or earth-centric era. A creator is a man-created concept for the benefit of man in the dark ages. Hallucination is not communication with a creator. If you fast for several weeks in a cave what vou attain is hallucination, not a communication with a creator. In the dark ages, they were not aware that starvation generates hallucination and they falsely attributed it to a conversation with a creator leading to religions centered on a creator. Religions are created by man for the benefit of man with rules designed for gender discrimination. All religions are gender discriminatory. You cannot find the truth in the dark-age religious text.

There is nothing believable or worthwhile in a religious text. Why does a creator require our

prayers? If the universe is a creation by a creator, no intelligent creator would have created so much junk. No intelligent creator would have created species in such a manner one has to eat the other for existence, a cruel act. Look at our solar system. Except for a very negligible habitable part on earth, the rest of the planets are toxic gasses balls or useless ice balls, what a waste of resources. No skillful engineer or architect would have wasted so much resources in a creation. If the universe is a creation of a creator, that creator deserves condemnation, not praise; it is not a praiseworthy job by any means. If an engineer had created the universe, he would have lost his head in the town square for incompetence, cruelty, and for the waste of resources; he/she would have lost his/her license to practice for good. The concept of a creator is utter nonsense. Religious doctrines are utter nonsense; they are mechanisms for legalizing gender discrimination; they are mechanisms for men to justify and practice polygamy. If a creator allows a man to have multiple wives, why does a creator not allow women to have multiple husbands, a simple logic that exposes the mockery of religions.

Universe is not a creation of a creator. No creator can be that ignorant. Dark-age religious doctrines have no place today or any day. How can the people who had no idea what orbits what can be messengers of a creator. One has to be out of one's mind to look for the truth in the flat-earth or earth-centric dark-age religious text. Religions are exploited as a mechanism of compliance and as a means for justifying the unjustifiable. What body-parts women choose to cover is none of men's business. How can a doctrine that prevents girls getting an education can be called a religion? How can a doctrine that allows men to have multiple wives and prevent women from having multiple husbands be a religious doctrine; a doctrine associated with a creator? History is filled with religious brutality. We can witness the same religious brutality even today in some parts of the world that is still governed by religious doctrines. The dark-age religious doctrines have no place today or any day.

It is insane that there are some of us who consider hunting as a sport. Hunting is considered an entertainment for some ignorant hereditary heads of states; then again, they are there for their genes, not for anything else. The choice of the head of a state based on genes is an insult to humanity and human intelligence. Even more disturbing is our inability to realize that. There are no royal genes. The main requirement for a head of state should be the brain not the genes. To become a janitor you require qualifications, yet no qualification is required for the job of head of the state, what a joke. It looks like the head of the state is a job that does not require any brain. Their reserved hunting grounds are a testimony towards their attitude, or rather lack of it, and lack of respect for the other species and nature. So-called her/his majesty has all the luxury paid by the public purse, yet she/he looks so bitter and unhappy. Nobody is born royal. Nobody is born majestic. Everybody, from janitor to king or queen to founders of

religions to white to black to brown to yellow to in between is descendent of naked apes, which is undeniable. Either everybody is equally royal and majestic, or none is royal or majestic; that is the reality.

Ancient Romans considered bringing down animals in arenas as entertainment. Today, we consider it as an ancient disrespect for nature, arrogance, ignorance, and stupidity. However, it is impossible to comprehend that there are some of us even todav who consider bullfiahtina as entertainment. Who thought some of us would be having such a mind set in these days and age? We are in dire need of mental awakening and rehabilitation; we need to leave the ancient mythical baggage we are carrying behind. If any right-minded person points out the harmfulness of some of our customary actions in today's environment, we label that person as racist; we cannot avoid that since every cruel activity has become a custom of some cultural group.

There are people who still carry out barbaric acts of offering animals to a hypothetical creator in the name of barbaric religious doctrines. Why do you offer a goat to a guy who creates goats? What is the logic? If there is a creator he/she/it must be thinking, "I am the creator, I can create whatever I want. Why do I need a goat carcass? All I see is some stupid person destroving a beautiful animal for no reason. Where did I go wrong in creating these idiots?" These selfish, blind and dumb individuals who have no respect for life are always ready to sacrifice another life blindly for hope of gaining hypothetical, imaginary, the non-existing credits for afterlife. Goats and other species are not there for our use; they are not here to do whatever we want to do with them. They are here for the same reason why we are here. If there is a creator capable of creating the universe, that creator will not be so dumb to not see our selfish intentions of those cruel offerings. Human cruelty has no bounds. Four barbaric individuals in uniform in Minnesota clearly demonstrated how cruel humans can be toward fellow human beings today, May 27, 2020 in front of a live audience on the street in a disgraceful and disturbing act of racial hatred; an animalistic act.

Bringing the awareness of the dangers and inappropriateness of some ancient customs and activities into the focus is not being anything against the group that practices that activity. Wrong activity is wrong when it is a customary act for a group. If we had foreseen the dangers of vet-markets, the world would not have been in a lock-down today due to animal to human transferred virus, COVID-19, and we would not have lost so many lives for no fault of their own. It is time to re-think our actions and establish sustainable harmony with nature and other species instead of looking at every moving species as a potential meal for us, and looking for ways to exploit all the resources to the maximum without paying no attention to the unexpected consequence.

COVID-19 shows the danger of the vet-markets; it provides an easy link for the animal to human virus

transfer. Some activities that would have been acceptable when the world is less crowded and traveling around the globe is not that efficient may not be acceptable when the world is as crowded and traveling around the world is fast and easy and accessible to many as it is today. Whether the vet-markets are in America, Europe, Asia, Africa or anywhere else, it does not matter, voicing the opinion about the dangers of the vet-market is not racism. If the planet is to remain livable without becoming as useless as the rest of the planet, our activities must adapt with the changing environment with ever increasing population. Customs have to adapt and must change. Archaic religious doctrines have to change or be disposed of. Governments of today should not be based on the religious doctrines introduced by people of flat-earth or earth-centric era. How can a guy who didn't even know what orbits what could be a messenger of a creator? We do not have to worship a creator just because our ancestors had done it or others are doing it. Religion is a business. We do not have to be bound by a religious doctrine just because our ancestors believed it. We cannot continue to carry out some ancient practices such as vet-markets in an era that links the world communities with airplanes and bullet trains. With the availability of such efficient transport modes, localization of virus or bacterial spread is nearly impossible today as we have witnessed with COVID-19 pandemic.

Now that we are in unimaginable numbers dominating the planet, if we consider every species as a meal, our immense ever-increasing number, voracious appetite, and lack of respect for the wellbeing of the other species and the planet in general will bring them into extinction just like what happened in the Easter Island. All the living species are not on this planet for our consumption. Other species also have all the rights we enjoy. If a creator entity had created all these living species in a way one has to eat each other to survive as that was suggested by religious doctrines, that creator entity must have been brainless, heartless, and pure evil for creating species in a way one species has to consume others exploiting every opportunity. Not a praiseworthy work by any means if the universe and everything in it is a work of a creator. Why did a creator create so much junk? It is a work that deserves condemnation, not praise. It appears as a work of a dark and gruesome character. If an Engineer had created it. he/she would have lost his/her head in the town square. Why would anybody with a right mind create so many junk planets and galaxies that have no use. Any creation must have a purpose.

By the way, are you planning to take pesticide and herbicide when you go to Mars? I am sure you are not going to forget to take dandelion spray when you go to Mars. How can anybody live on Mars if there are dandelions there? If pesticide targets the neural system of pests for their demise, how can our neural system be free of the same effect? The ever-increasing neurological disorders in humans is a testimony to the detrimental effect of pesticide in humans. Preventive measures for health should not be delayed until it is proven, especially when it is not reversible.

Universe is not a creation of a purpose. Universe cannot be a result of a creation. Any creator capable of creating the universe cannot be that ignorant to create so much junk. There is no creator. The creation theory is an archaic concept that has arisen from our inability to explain why we are here. Some had used this human ignorance for personal gain by claiming themselves as messengers of a creator and enforcing their authority militarily on others making it a religion that the rest had to follow unquestionably. What we have today as religions are the blind followers of nonsensical archaic doctrines that explain nothing. Religions turn people with the ability to think into non-thinking zombies looking forward to another life with some better benefits that they do not possess in this life, a heaven. Flat-earth and earth centric doctrines have no place today; they blind the minds. Breathing is an involuntary activity and we want to keep it that way as an involuntary activity. If we turn it into a voluntary activity, it may evolve into a voluntary activity.

B. Interaction of Atom at Distance

If there are two atoms, X and Y, next to each other, their orientations, i.e. the directions of the Spin Magnetic Moments (SMM) of Atoms, will always be opposite to each other due to the attraction of the opposite and the repulsion of the alike. If atom X has its Spin Magnetic Moment oriented in one direction Spin-Up (\nearrow), then, the other neighboring atom Y is going to have its Spin Magnetic Moment oriented in the directly opposite direction, Spin-Down (\checkmark). This is simply due to the attraction of the opposite and the repulsion of the opposite and the spoke the alike polarities. There is nothing spooky here.

When atoms X and Y are next to each other, atoms X and Y will be magnetically coupled or entangled:

[X ́∕] [Y ∠]

Now, let us move the particle Y into a different location at distance while maintaining the magnetic coupling,

 $[X \nearrow]$...separated but still coupled ... $[Y \checkmark]$ provided that there is no external magnetic field. If there is an external magnetic field, both particles align with the direction of the external magnetic field. Particle X and Y are not in the vicinity of each other. Or, perhaps, they are separated by a wall too. But they are still magnetically coupled nevertheless or entangled.

Now let us manually rotate the particle X by 180° degrees.

Original: X and Y are Magnetically Coupled [X ↗] ...separated but still coupled ... [Y ∠]

Rotated: X rotated by 180 Degrees, X and Y are still Magnetically Coupled

 $[X \swarrow]$... separated but still coupled ... $[Y \nearrow]$

Now, after the rotation, the particle X is in Spin-Down (\checkmark) orientation. If you check the orientation of the distant particle Y, you will notice that it is now in Spin-Up (\nearrow) orientation. The distant particle Y has changed from Spin-Down (\checkmark) orientation to Spin-Up (\neg) orientation when we change the particle X from Spin-Up (\nearrow) orientation to Spin-Down (\checkmark) orientation. It does not matter how far the particles are apart, if they are still magnetically coupled and free to orient themselves, any change we make to the particle X will be reflected in the distant particle Y in the opposite; there is nothing spooky about it.

If you turn the orientation of particle X to be along the vertical axis +z, then the orientation of the particle Y will be in the -z direction, the direct opposite,

 $[X \uparrow] \theta=0$... separating distance $[Y \downarrow] \theta=\pm 180^{\circ}$

If you explain the real reason for the action at distance between particles in a book and try to sell it, nobody is going to buy it, because it is the boring truth that has no entertainment value. However, if you write a book by mystifying and spookyfying the action of the particles at distance with some sprinkling of broom-riding Harry-Potterization and Houdinification, you got a winner; it suddenly got the entertainment value required for public consumption; millions and millions of copies will be sold easily; you will be laughing all the way to the bank as a millionaire. There is no other possible reason for University Professors to practice voodoo-physics. In fact, it is the only reason. They also have to prevent the interruption of the flow of funds for the voodoo-physics by condemning and immediately rejecting any opposite views that might demystify the physics. Propaganda Journal editors and reviewers are there on guard to do that job and maintain the status quo. I am sure we all have experienced the arrogance and the nastiness of the editors and reviewers of propaganda journals, not an experience anybody wants to re-live. It is interesting that people who become editors and reviewers of propaganda-journals are the people who have no clue about the subject. From their responses, they appear scenile. In one way, it is understandable since anybody who is intelligent and knowledgeable has more important things to do than becoming editor or reviewer of a journal.

It is interesting that if you lie down on a couch or under the stars with a glass of wine on a tropical beach and spend a few minutes writing a fantasy song, you are paid handsomely to publish. Not only that, based on the number of times a song is played, the author receives a check every year for eternity. If you spend years working on a scientific problem and come up with a paper, you have to pay and surrender the copyright to get it published. Not only that, you also have to go through rejection after rejection with demeaning verbal harassment by editors and reviewers in addition to the similar treatment by supervisors and bosses whoever you come along the way.

Reviewers and editors treat authors like criminals if

Journal of Multidisciplinary Engineering Science Studies (JMESS) ISSN: 2458-925X Vol. 10 Issue 5, May - 2024

the content does not agree with their cult ideology. Some brutish and heartless reviewers reject papers claiming mockingly that this guy deserves the prize. They are so ignorant to realize the impact of such a statement has on a person. Some bullish and ignorant editors even send emails asking to stop coming up with theories that are in conflict with the status co. What is wrong with this picture? This is the scientific reality today, everyday. Everybody is on the wing to condemn you and your work even when they cannot pinpoint any mistake in your work, there is never sole to give you a helping and encouraging hand. That is the dirty reality of scientific discovery, so called higher education. They want their blunders hidden, because the exposure puts their jobs at risk. They condemn anything that goes against the status co, their bread and broccoli. They turn a blind eye to the mistakes and blunders of the accepted theories and experiment misinterpretations. Their whole effort is to protect their jobs at any cost, not the advancement of science. They twist reality to misinterpret experiments to justify theories. They do what their job description prescribed to carry out to keep their jobs. Otherwise, there is no reason for anybody with a right mind to believe Special Relativity, General Relativity, and Quantum Mechanics; they are pseudo-mathematical garbage [4,15,16,12,13,19].

Today, research is considered to be something people do when they cannot get a real job. Teacher is what you become when you cannot do anything else. If you are hired to teach, you have to teach what you have been hired to teach, you have to teach the religious text, you cannot question it. If you are hired to teach the bible, you cannot question its validity. If you have been elected as Pope, you cannot question God. It does not matter how many degrees you have, if you are a researcher with a wrong color at a university, the first question you get is "which professor are you working for". If you go for a job interview, the first question they ask is "how many journal papers you have". It is a number game. Professors get up in the morning thinking "how am I going to cook up another publication to keep my job".

Now, in the internet information age, we have many new journals with editors and reviewers that are more open to new directions; they do not carry an ancient baggage and they do not charge exorbitant sums of money as those propaganda journals publishers demand. Why do they charge so much to stick a paper in a server in some abandoned underground bunker or in a basement? When those so-called scientists cannot defend their textbook theories against the work that demonstrates the mistakes of those theories, they simply reject publishing it simply by claiming the work is not suitable for their journal and then ignore it and continue doing what they have been doing blindly simply because the status co keep them employed till retirement. It is only after retirement that at least a very few of them chose to voice their genuine concern about the invalidity of Modern Physics, the sorry state of Modern Physics, invalidity of Modern Physics.

How can anybody who claims that a particle of mass can be in multiple places simultaneously be a scientist? How can a guy/gal who claims time is relative and light propagate relative to observers be a scientist? How can a guy who claims a particle is a wave be a scientist? How can a guy/gal who uses the redshift of a star in a galaxy to claim the universe is expanding be a scientist? How can a guy/gal who claims spin comes in Up and Down guanta be a scientist? How can a guy/gal who uses Polarization of light to simulate Spin of a particle be a scientist? How can a guy/gal who claims orbits are quantized and when an electron changes orbits it disappears from one orbit and reappears in another orbit be a scientist? They are fraudsters, voodoo practitioners, not scientists.

Propaganda journals have become just dust collectors that nobody reads or cares about. Has anybody read a propaganda journal lately? Nobody expects to find anything new in those Journals. Reading those propaganda journals is just like reading an ancient religious text, simply a waste of life. You will not find anything worthwhile or meaningful in a religious text. You will not learn anything from that. Have you seen how much they charge for a publication? Why do they charge that much to stick a file of a few kilo-bites on a server; it is outrageous. What more can you expect from a breed who are trying to sell the bogus idea that particles can be at multiple places at the same time, and mass can be generated by colliding particles; not that different from snake-oil salesmen. Next time if you come across anybody talking about voodoo-physics, just ask them to prove light is relative; nobody will be able to. Einstein did not prove it [15,16,4,5]; he just proclaimed it; his apostles spread the word; this Crafted Prophecy (CRAP) became to be known as Modern Physics, it is in fact voodoo-physics. Ask them to show how you can assume the Position Operator to be the position itself if the position and momentum of a particle is assumed to be a wave. Ask them how a particle of constant momentum can behave as a wave. Ask them how a particle can go through two slits simultaneously. Ask them how the precision of momentum can be inversely related to the precision of position when the momentum is defined as $p=m\partial x/\partial t$.

Particles are not waves. Waves are not particles. There is no wave-particle duality. Propagation of light is not relative. Maxwell equations for light cannot be transformed onto inertial frames [16]. The Lorentz Transform cannot transform Maxwell equations for propagation of light. Lorentz Transform only transforms the static electric and static magnetic fields, not the propagation of light [17]. The Lorentz Transform is not unique [4]. Position and momentum of a particle cannot behave as a wave [13]. There cannot be momentum if the position is fixed. If the momentum is fixed, particles can only be on a linear or circular path. If the momentum is constant, a particle cannot behave as a wave. If a particle is assumed to behave as a wave, the position operator cannot be the position itself. If the position is assumed

to be the position itself, a particle cannot behave as a wave. If a particle is assumed to behave as a wave, the position and momentum operators are determined by the wave equation and they commute. If the position operator is assumed to be the position itself, the eigenspace of the position operator is not unique and the eigenspace of the momentum operator is also an eigenspace of the position operator. Position and momentum are simultaneously measurable. The precision of the momentum is directly proportional to the precision of the position, not inversely. A particle cannot be in multiple places simultaneously. Bipolar spin cannot come in unipolar Up and Down. Polarization of light is not spin.

XXII. **QUANTUM SUPERPOSITION** Property:

Spin-Up and Spin-Down are non-separable Spin Bi-poles, and hence cannot be in a superposition. There is no existence of Spin-Up without Spin-Down and vice versa. Spin-Up and Spin-Down are mutually dependent, perfectly correlated negatively, and hence cannot be represented by orthogonal vectors.

Lemma:

Spin-Up and Spin-Down cannot be represented as the eigenvectors of 2D Pauli's Spin Matrices. Pauli's 2D Spin Matrices have no existence. Spin-Up and Spin-Down cannot be 2D. If Pauli matrices replace the x, y, and z components of a Spin Operator, the resulting Spin Matrix is no longer a Spin Operator.

It has been claimed that a particle is in both Spin-Up state and Spin-Down state at the same time until it is observed. It has also been claimed that the wave function collapses when an observation is made. If this holds true, every wave function should always be in a collapse state since every event and every particle is always observed by other events and particles. Because observation is observation whether the observation is being made by another event, another particle or a human observer.

The talk about Schrodinger's cat being both alive and dead at the same time until it is observed also stemmed from this idea of states being in a superposition until an observation is made. Spin-Up and Spin-Down are not states of a particle. Spin-Up has no existence without Spin-Down. There are no Spin Monopoles. Without Spin Monopoles, Spin cannot come in Quanta of Spin-Up and Spin-Down. Spin is Bipolar. Bipolar Spin has no Spin-Up and Spin-Down states. Spin of a particle cannot be in superposition as Spin-Up and Spin-Down since Spin-Up has no existence without Spin-Down and vice versa.

The Polarization of light is not Bipolar. Polarization is Unipolar. Polarization of light is not a Spin. The Horizontal and Vertical Polarization of light cannot be used to simulate the Spin of a particle. Different Polarizations can be in superpositions, whereas Up and Down spins cannot be in superpositions. Every Spin does not generate a magnetic field. Every magnetic field is not a Spin. Spin Magnetic Moment is static. A propagating magnetic field is not a Spin. Light has no spin. Light cannot be particles. Light bursts are waves. Einstein's photon or light quanta derivation is a mathematical blunder. Light in a vacuum has no entropy and Bltzmann entropy is not applicable to light.

The talk about Schrodinger's cat has been the favorite pastime for physicists for more than a century. However, there is a big difference between the Spin being Spin-Up or Spin-Down and a cat being both alive and dead. Spin is Bipolar. Dead and Alive are unipolar. You cannot compare Bipolar events with Unipolar events. Bipolar Spin-Up and Spin-Down cannot be compared with the Unipolar Alive and Dead.

Spin-Up and Spin-Down reside in the same particle relative to an Observer. A particle does not have a Spin-Up state or a Spin-Down state. A particle that is Spin-Up for one observer can be Spin-Down for another observer at the same time. Similarly, a particle that is Spin-Up for one observer at one location can also be Spin-Down for the same observer at a different location. Spin-Up and Spin-Down are Spin Bi-Poles, not Monopoles. Spin-Up and Spin-Down have no independent existence of their own; one cannot exist without the other. Spin-Up and Spin-Down cannot be in a superposition since there are no Spin-Up and Spin-Down monopoles.

However, it does not matter from which direction, from which place the observation had been made, a cat is either dead or alive for all observers. A cat cannot be alive for one observer and dead for another observer. Cat cannot be alive for an observer relative to one location and the same cat cannot be dead for the same observer at a different location. The state of a cat is observer independent, Unipolar. Unlike a Spin of a particle, dead and alive do not reside in the same cat. Dead and alive are not Bi-Poles. Dead and alive are Monopoles. Spin-Up and Spin-Down are Bi-Poles.

On the other hand, a particle can be Spin-Up for one observer while the same particle can be Spin-Down for a different Observer at the same instant. Further, if a particle appears as Spin-Up for an Observer from one direction, the same particle appears as Spin-Down for the same Observer from a different direction. Spin-Up and Spin-Down are not states of a particle. Dead and alive are states of a cat. There are no Spin-Up particles or Spin-Down particles. There are dead cats and live cats. Spin-Up and Spin-Down are observer dependent and not states of a Spin.

Unlike Spin-Up or Spin-Down, there are dead cats and live cats. If you see a cat that is dead when you observe from one direction, the same cat is dead for the same observer in any other direction. Unlike Spin-Up and Spin-Down, no cat can be dead and alive at the same instant for two Observers irrespective of where the Observation is made from. You don't know the state of a cat does not mean the state of the cat is uncertain. The state of a can is certain. Dead Cat is dead whether it is observed from the South pole or North Pole. State of a cat is Observer independent; however, this is not the case with Spin of a particle. The Spin of the earth is different for Observers in the South Pole and the North Pole. Spin is Observer dependent.

Orbiting systems Spin. Atoms are orbiting systems. Atoms Spin. Spin-Up and Spin-Down reside in the same particle. Spin-Up or Spin-Down do not exist in a particle itself without an observer. There is no Spin-Up or Spin-Down without an observer. It is only relative to an Observer Spin-Up and Spin-Down have an existence. Take the observer out of the scene, and then Spin-Up and Spin-Down disappear from existence. To say there are Spin-Up particles is equivalent to saying that there are Magnetic Monopoles. There are no Magnetic Monopoles and hence there cannot have any Spin-Up or Spin Down atoms.

Whether a particle is Spin-Up or Spin-Down depends on the Observer. Ask someone in Canada whether the earth is Spin-Up or Spin-Down. Ask the same question somebody down under, in Australia. The answer you get will be completely opposite. If the earth has a unique Up or Down state of a Spin, how can the Spin be observer dependent? The direction of a Spin is not a state of a particle. Spin-Up and Spin-Down are not states of a particle. Whether a particle is Spin-Up or Spin-Down depends on the observer. Particles spin. Particles do not have Spin-Up or Spin-Down orientation in the absence of observers. Observers are not required for particles to Spin. Nature does not have Ups or Downs.

The reason for the non-existence of Spin-Up particles and Spin-Down particles is the fact that there cannot be an Up without a Down and vice versa. Up and Down resides in the same particles. Magnetic fields are in loops. Magnets are Bi-Polar. Spinning Atoms are Bi-Polar. Spin Magnetic Moment of an Atom is Bi-Polar. Any Magnetic Field is Bi-Polar. One person's clockwise spin is another person's anti-clockwise Spin. Since the Spin-Up and Spin-Down reside in the same atom, you may be inclined to claim that an atom is in the Superposition of Spin-Up and Spin-Down orientations; this is incorrect.

Entities in superposition must be able to be separated into individual entities. However, Spin-Up and Spin-Down cannot be separated. Spin-Up and Spin-Down do not exist as separate entities since there are no Spin-Monopoles. As a result, Spin-Up and Spin-Down are not in Superposition. You cannot separate the North Pole from the South Pole. You cannot separate Spin-Up from Spin-Down. You cannot separate Magnetic North from Magnetic South. You cannot separate Clockwise Angular Momentum from Anti-Clockwise Angular Momentum. In each of these, one has no existence without the other.

On the other hand, Dead and Alive do not have mutual existence; they only have separate existence. Dead and Alive are mutually Exclusive. A cat cannot be dead and alive at the same time. State of a Cat is independent of an Observer. State of a particle is independent of an Observer.

Spin-Up and Spin-down are not states since Spin-Up and Spin-Down are observer dependent; they have no existence without an observer. State of a particle or an atom is observer independent. Observer dependent parameters cannot describe a state of a particle. Nature cannot quantize a Spin into Spin-Up or Spin-Down since nature has no idea what Observers refer to as Spin-Up and Spin-Down. Spin cannot come in Quanta. Angular Momentum cannot come in Quanta. Vectors are observer dependent and cannot come in quanta. Vectors can be in one direction for one observer and can be in the completely opposite direction for another observer. Vectors cannot be quantized. Any entity that has a belonging cannot come in quanta.

Although Spin-Up and Spin-Down reside in the same particle, you cannot say that they are in Superposition. Unlike the superposition, you cannot separate Spin-Up and Spin-Down from a particle to obtain Spin-Up particles and Spin-Down particles; that is prohibited by the nature of Magnetism and the very nature of Spin. There are no Magnetic Monopoles. There are no Spin-Up particles. No Spin-Down particles. Spin-Up and Spin-Down are the labels that do not stick, and they are assigned to a particle by Observers; they differ from Observer to Observer.

Lemma:

Dead and Alive are Unipolar. Spins are Bipolar. Both dead and Alive cannot reside in the same object simultaneously since they are unipolar. Both Spin-Up and Spin-Down reside in the same particle simultaneously since Spin is Bipolar. Dead and Alive are states of a living being that have existence independent of observers. Spin-Up and Spin-Down are not states of a particle and have no existence independent of observers.

Properties: Dead and Alive Cat

- 1. They are Monopoles.
- 2. They are separable.
- 3. Not a vector.
- 4. Alive Cat is alive from any direction for any observer. Dead cat is dead from any direction for any observer.
- 5. They have no existence concurrently.
- 6. They only have separate existence. Their existence is independent of an observer.
- 7. They do not exist in superposition. Cat either Alive or Dead.
- 8. A cat cannot be both Alive and Dead for any observer at the same time.
- 9. Cat is alive if and only if it is not dead.
- 10. Cat is dead if and only if it is not alive.
- 11. They are observer independent.
- 12. They are ingrained states of an object, the cat.
- 13. They are observer labels that do stick on an object, the cat.
- 14. They are inherent characteristics of an object, the cat.

Properties: Spin-Up and Spin-Down Atom

- 1. They are Bi-Poles.
- 2. They are non-separable.
- 3. A vector.
- 4. For an observer, seen from one direction along a vector, if it is Up, and the same seen from opposite direction it is Down.
- 5. They co-exist in the same object. Their existence is only relative to an observer.
- 6. Spin-Up has no existence without Spin-Down and vice versa.
- 7. They are not in a superposition since they are non-separable. However, a particle can be Spin-Up for one observer and Spin-Down for another observer at the same time since they are observer perceptions.
- 8. A particle cannot be both Spin-Up and Spin-Down for the same observer at the same time.
- 9. A particle is Spin-Up if and only if it is Spin-Down from the opposite direction.
- 10. Particle is Spin-Down if and only if it is Spin-Up from the opposite direction.
- 11. They are observer dependent.
- 12. They do not represent states of an object.
- 13. They are observer labels that do not stick to an object.
- 14. They are not inherent characteristics of an object.
- 15. Spin-Up and Spin-Down are not states of a particle and have no existence independent of observers.

Lemma:

State of a cat is observer independent. Spin-Up and Spin-Down are observer dependent. There is simply no comparison between the Schrodinger-cat and the Spin of a particle. The Schrodinger cat experiment is simply nonsense, not physics. There is no possible reason for this to be the talk of the physics community for a century.

Lemma:

Whether a cat is Alive or Dead is not determined by an observer. Whether a particle is Spin-Up, or Spin-Down is determined by an observer.

Property:

My ignorance about the state of an object does not make the object to be in a superposition of all the possible states until I come to know its state. My ignorance of the state of a penny does not mean the penny is in both Head and Tail states; the penny is either Head or Tail, not both. What is taking place in the universe is observer independent. The state of an object is observer independent.

Take Home Message:

Alive or dead State of a cat is not comparable to the Up or Down Spin of a particle. Your observation does not determine the state of a cat since the state of a cat is a monopole. It is either alive or dead irrespective of the observer's presence. On the other hand, Spin-Up or Spin-Down has no existence until an observer comes and decides what it is supposed to be. If an observer decides a particle to be Spin-Up, then, and only then, Spin-Down comes into existence, and vice versa.

Consider an arrow as a vector. If you stay along the arrow and observe it from the leading tip of the arrow, it appears to be coming down on you and hence the vector is Down for you. If you observe it from the tail end of the arrow, it appears as if it is going away from you and hence the vector is Up for vou. Spin-Up and Spin-Down are different perspectives of the same Spin by observers. If you consider Atom to be Spin-Up, the label does not stick to the Atom; it is for your eyes only. Another observer may see it as Spin-Right. That does not stick to the Atom either.

Lemma:

Spin Up, Down, Right, Left, In, Out, etc. are for an observer's eyes only.

No observer can see an arrow going out and coming in at the same time. That is not possible. Spin of an Atom cannot be both Spin-Up and Spin-Down for the same observer. An arrow cannot go Up and Down simultaneously for any observer. A particle cannot be in a superposition of Spin-Up and Spin-Down simultaneously since Spin-Up has no existence without Spin-Down. For Spin-Up to be in a with Spin-Down, superposition Spin-Up and Spin-Down must be monopoles. There are no Spin-Up and Spin-Down monopoles since Spin is Bipolar. Up and Down cannot be in a superposition. Tip of an arrow does not exist without the tail of an arrow. You cannot separate Spin-Up and Spin-Down. Spin-Up and Spin-Down of an Atom are not in a superposition.

If your Q-Bit is working, you may have to rethink and reformulate your Q-Bit gismo to find out the real reason for its working. If your Q-Bit gismo is working, why it is working is not what you think it is. Q-Bit based on the Polarization of light is not a Quantum Bit, it is an optical processor, an Optical Bit or O-Bit. Polarization of light has nothing to do with Quantum Mechanics. Polarization of light is not a Spin. Polarization of light is Unipolar. Different Polarizations can be in a superposition since polarization is Unipolar. A particle cannot be in a superposition of Spin-Up and Spin-Down since the Spin is Bipolar.

A particle cannot be in multiple states simultaneously. The state of a particle must be unique. The position and momentum of a particle must be unique irrespective of the size of a particle. The position and momentum of a particle are not mutually independent since the position of a particle depends on the momentum. The position and momentum of a particle cannot be a Fourier Transform pair.

XXIII. OBSERVING A PARTICLE AS SPIN-UP DOES NOT MAKE SPIN-DOWN DISAPPEAR Lemma:

There is no Spin-Up without a Spin-Down. The

observation of a particle as Spin-Up relative to an observer brings Spin-Down into existence and vice versa.

If a Canadian observes the earth as Spin-Up, that does not make Spin-Down disappear. Earth is still Spin-Down for an Observer in Australia. If you shrink down the earth to microscopic level, this observation is still the same; shrinkage/enlargement factor does not change the outcome. The claim that once a particle is Observed as Spin-Up, the Spin-Down ceases to exist and vice versa is incorrect. No particle can be Spin-Up without its counterpart Spin-Down. As soon as you demarcate something as Up, the Down is automatically there in it whether you like it or not; you cannot get rid of it; it is like a shadow; it is a shadow. If there is a clockwise Spin, then, there will be a counter-clockwise Spin in the same particle at the same time. If a particle is a Spin-Up particle from one direction for an Observer, the same particle is a Spin-Down particle from the opposite direction for the same Observer, just like our earth's magnetic field. Spin of a particle is Bipolar.

It is the Observer that defines what is Up and what is Down; Up and Down are not properties of the Spin of a particle itself. Particles do not come with Spin-Up and Spin-Down labels attached to them. When an observer sees a particle as Spin-Up, it simply means that the Observer labels that polarity as Spin-Up, a reference direction. Spin-Up and Spin-Down are not properties of particles themselves; they are Observer references. Is there an 'Up' side to the earth's magnetic field? No. Not everybody has the same Ups and Downs. Nature does not have dichotomies, up and down, rich and poor, ugly and beautiful, short and tall, thin and fat, good and bad, peace and conflict, dumb and smart etcetera; they exist only for the conscious mind.

The North Pole has no existence without the South Pole, and vice versa. Spin-Up has no existence without Spin-Down and vice versa. Clockwise has no existence without anti-clockwise. They exist in the same particle at the same time relative to an observer. They are non-separable. You cannot say Spin-Up and Spin-Down are in Superposition since you cannot separate them. They are non-separable since there are no Spin monopoles. Only the separable entities can be in a superposition. Observation that a particle is Spin-Up is not going to eliminate Spin-Down from existence. In fact, it is guite the opposite. The observation that a particle is Spin-Up brings Spin-Down into existence since Spin-Up has no existence without Spin-Down. It is only for an observer that the Spin-Up and Spin-Down appear as distinct, not to the particle itself.

XXIV. UNSEEN REALITY

Quantum Mechanics (QM) was founded on the conjecture that particles are waves of de Broglie wavelength. De Broglie wavelength is incorrect since no particle has the energy required to be at de Broglie wavelength. No genuine experiment can substantiate de Broglie wavelength except the misinterpretation of the Double-Slit Experiment, a double-slit blunder. If you repeat the Double-Slit Experiment for a beam of protons with the same momentum as the beam of electrons, you will realize the mockery of particle waves or de Broglie wavelength λ =h/p. The wavelength of the interference pattern for a beam of protons is not the same as the wavelength of the interference pattern for a beam of electrons for the same momentum.

Spin-1/2 is the direct manifestation of the incorrect derivation of de Broglie wavelength. Spin-1/2 disappears when the fitting wavelength that the energy of a particle can support is used. The energy of a particle of mass m with momentum p is not given by e=pc; it is given by e=p²/2m. Particles are not waves. Waves are not particles. There is no wave particle duality. The claim that a moving particle has a wavelength is meaningless. A particle with momentum p does not have a wavelength, $\lambda \neq h/p$. Frequency has no energy. If energy comes in quanta, the energy quantum cannot be given by e=hf since frequency has no existence without amplitude, e \neq hf.

Spin Magnetic Field of an Atom or a charged particle is static. Every spinning particle does not generate a Spin Magnetic Moment. Only the spinning Atoms and charge particles generate Spin Magnetic Moment. Spin Magnetic Moment is static. The magnetic field of a propagating electromagnetic wave is not a Spin. Light has no Spin. Polarization of light is not a Spin. Horizontal and Vertical Polarization of light cannot represent the Spin-Up and Spin-Down of an Atom or a charge particle. Polarization of light is Unipolar. Spin of a particle is Bipolar.

Moving mass or particles do not generate waves. Momentum does not generate waves. When a moving particle is stopped, it does not generate waves. Electrically neutral particles of mass with accelerating or decelerating speeds do not generate waves. Particles of mass moving at uniform speed do not generate waves. Neither constant momentum nor change in momentum generate waves. Then, what generates waves when a particle of mass is on the move?

What generates waves is moving charges, chomentum. Mass is just a carrier of charges since charges have no existence or motion without a mass. The smallest charge carrier is the mass of an electron. As a result, the wavelength is related to the mass of an electron independent of the mass of the charge particle that is in motion. It does not matter what the mass of the charged particle is, the conversion factor between the wavelength of radiation at the stopping or collision of a charged particle and the chomentum qu of the particle depends on the mass of an electron, not the mass of the particle that is being stopped or in a collision.

The frequency of the radiation cannot be increased by increasing the mass of the particle, which is a direct contradiction to the de Broglie wave conjecture and Quantum Mechanics. According to the de Broglie wave, frequency is directly proportional to the mass of the particle, or wavelength is inversely proportional to the mass of a particle. The frequency of the wave for a beam of protons traveling at speed u in the Double-Slit experiment cannot be higher than the frequency for a beam of electron traveling at the same speed u in the Double-Slit experiment. Yet according to de Broglie wavelength, higher the mass higher the wave frequency for the same speed u, which is impossible. It lacks not just the common sense; it lacks all the senses, a pure nonsense. Just pluck a string of a guitar if you want further proof.

Spin Magnetic Moment (SMM) of an Atom is not due to the Spin of electrons since SMM due to the Spin of electrons is proportional to the surface area of the electron, which is negligible. Further, the SMM of two neighboring electrons are one against the other and hence the net Spin Magnetic Moment of an Atom due to the Spin of electrons is zero for an Atom with even number of electrons. Spin Magnetic Moment of Atom is due to the Spin of the Nucleus of the Atom. Even though an Atom is electrically neutral, an Atom has a Spin Magnetic Moment since an Atom is an orbiting system consisting of charge particles.

Spin is an inherent characteristic of any Orbiting System. Atoms to planetary systems to galactic systems onward, every orbiting system spins. When an Orbiting System such as an Atom spins, the spinning nucleus takes all the bound electrons in a Merry-Go-Round ride creating circular current loops, which generates Merry-Go-Round Spin Magnetic Moment (SMM) of an Atom. Orbiting electrons also generate Orbiting Magnetic Moment of an Atom. Orbiting Magnetic Moment of an Atom. Orbiting Magnetic Moment of an Atom is equal and opposite to the Merry-Go-Round Magnetic Moment and hence they cancel out.

The Spin Magnetic Moment of an Atom due to the spin of electrons is zero. The Spin Magnetic Moment due to Merry-Go-Round spin cancels out with the Orbit Magnetic Moment of an Atom. What is left is the Spin Magnetic Moment due to the spin of the nucleus itself. So, the Spin Magnetic Moment of an Atom is due to the spin of the nucleus. You can also say that the Spin Magnetic Moment (SMM) of an Atom is due to the spin of the Atom itself on its own axis. Spin Magnetic Moment of an Atom is orthogonal to the plane of spin of the Atom, which is also the orbiting plane of all the electrons in the Atom.

The Orientations of neighboring Atoms are not random since they are magnetically coupled. If you change the orientation of one Atom, the rest of the Atoms follow suit. Irrespective of the direction of the Stern-Gerlach Magnetic Field (SGMF), when the first Atom in a beam of Atoms enters the strong SGMF, its SMM aligns with SGMF instantly, and the rest of the Atoms reorient themselves due to magnetic coupling while they are still outside the SGMF so that no two neighbors have the same orientation.

With the entrance of just the first Atom into the SGMF, half of the Atoms in the beam are oriented towards the SGMF while the other half of the Atoms are oriented against SGMF. Since all the Atoms, after the first Atom, are arriving at SGMF already aligned

with or against SGMF, they will be deflected toward or against SGMF splitting the beam into two separate beams of equal number of Atoms. State of a Particle is unique, and a hypothetical wave function or probability has no place in it. The direction of Spin relative to an observer is not a state of an Atom. An Atom or a charge particle does not have Spin-Up or Spin-Down state since Spin is Bipolar.

The orientation of an Atom in a SGMF says nothing about the orientation of an Atom prior to its entering the SGMF. Stern-Gerlach Device may be a good toy for children, nothing else. Even as a children's toy it is not suitable since it is a health hazard. There is no practical use of a Stern-Gerlach Device. The Stern-Gerlach device cannot set the spin of a particle to a desired direction permanently. The permanent setting of a Spin is not possible. The Stern-Gerlach device cannot measure the x, y, or z components of a Spin of a particle. The Stern-Gerlach device cannot measure the Spin of a particle. The fact that the Up and Down Split beams in the Stern-Gerlach Device have equal number of Atoms is an indication that the Spin of a particle is not probabilistic. If the Spin-Up and Spin-Down are probabilistic, there is no reason for Up and Down beams to have an equal number of atoms.

If you rotate SGMF in any direction, Split beams will also rotate by the same angle in-phase; everything else remains the same. After the split, each beam remains in Spin-Up or Spin-Down orientation as long as they are still in the SGMF. The orientations of Split beams Spin-Up and Spin-Down have nothing to do with the orientations of original Atoms; that information is completely erased by the SGMF. Atoms in Split-Beams are on a forced orientation by SGMF.

Spin-Up and Spin-Down are not intrinsic to an Atom; they are intrinsic to Stern-Gerlach Magnetic field. It is just like entering a country. You just follow the rules of whatever country you are in. Once you leave a country, you do not carry those rules, you have nothing to do with them anymore. When you enter a new country, you follow the new country's rules. You only have to follow the rules of a country only as long as you are in that jurisdiction. What is legal (in phase) in one jurisdiction (one SGMF) can be illegal (out of phase) in another jurisdiction (another SGMF).

Stern-Gerlach Device cannot be used to measure or to prepare the Spin of a particle. Spin components of a particle along x, y, z axes cannot be measured or set using Stern-Gerlach Device. If you send the Spin-Up Split-beam through a Second SGMF placed in the same direction as the first SGMF or in phase, beam will pass through without a split since atoms are pre-aligned with the second SGMF; no hypothetical wavefunction collapse or Berlin-Hagen Interpretation is at work here. Placing two Stern-Gerlach Devices next to each other in phase, or in the same orientation, in series is simply equivalent to the extension of the length of the SGMF.

If the second SGMF is at any non-zero angle to the first SGMF or out of phase, the Spin-Up split beam will

split again into two beams with equal number of atoms; it is the same for Spin-Down split beam. This is because when the Up or Down beam leaves the first SGMF, the magnetic coupling between Atoms makes the Spins of the Atoms to realign so that the Spins of the neighboring Atoms are of opposite orientations before the beam enters the second SGMF. When both split beams are out of the SGMF, atoms in Spin-Up and Spin-Down beams realign so that no two neighbors have the same orientation, just like the original beam of Atoms that entered the first SGMF.

Spin is Bi-Polar, and hence Spin-Up and Spin-Down are not mutually independent or orthogonal. Spin-Up and Spin-Down are perfectly correlated negatively. Spin-Up and Spin-Down are non-separable due to the absence of Spin Monopoles and hence they are not in a superposition. Spin-Up and Spin-Down are Observer dependent, and hence neither Spin-Up nor the Spin-down a state of particle. Spin-Up and Spin-Down are not parameters of a particle or states of a particle. Spin-Up for one Observer is Spin-Down for another. Nature has no Ups and Downs. Nature cannot quantize Observer dependent entities. It is an observer who defines Spin-Up and Spin-Down, which varies from observer to observer for the same particle. Particles do not have any knowledge of what observers have in their mind. Spin-Up and Spin-Down, which are the Impressions of observers, cannot come in quanta, Observer Impressions cannot come in guanta.

No two Neighboring electrons have the same Spin solely due to the attraction and repulsion of magnetic polarities, not an Exclusion Principle. Vectors do not come in Quanta. Vectors cannot be quantized. The eigenvalues of the square Angular Momentum Operator are not the same as the eigenvalues of the sum of the squares of the 2-Dimensional Spin Operators. When the x, y, and z components of the Angular Momentum Operator are substituted by the Pauli's 2D Spin Operators, the resulting Operator is no longer an Angular Momentum Operator; it has no eigenvalue representation since it is non-square matrix. In addition, spin of a particle cannot take place in 2-Dimension, and hence 2D Spin Matrices cannot exist; there are no Pauli Matrices. In fact, there cannot be Spin Matrices of any order. Matrices Operators cannot be in Quantum Mechanics.

Although the self-cross-product of the angular momentum operator is the Planck constant times the phase-shifted angular momentum operator by 90 degrees, matrices that satisfy this condition are not angular momentum operators. Matrix operators cannot exist in QM. Matrix Operators cannot satisfy the non-commutative relationship of operators that is fundamental to Quantum Mechanics. Even the Matrices of infinite order cannot exist in QM since matrices of infinite order cannot be square matrices and hence cannot be Hermitian. Matrices of infinite order do not have eigenvalue representation. Matrices that have no eigenvalue representation cannot exist in Quantum Mechanics. If the x, y, and z component of a Spin Operator is replaced by Pauli's Matrix Operators, the resulting matrix has no eigenvalue representation and hence it is no longer an Operator.

SGMF is neither a filter that blocks out Atoms of different orientation to its own, nor a Spin measuring or Spin setup device. Irrespective of the actual orientation of an Atom, the first Atom that goes through SGMF is almost always Spin-Up; only time the first atom can be Spin-Down is if its actual orientation is against SGMF. The orientation of the following magnetically coupled Atom is always against the orientation of the preceding Atom due to magnetic coupling. If SGMF records an Atom as Spin-Up, it only means that the original Spin of the Atom was not against SGMF, nothing else; actual orientation of the Spin can be at any other angle. SGMF is blind to the actual orientation of the Spin of an Atom.

It does not matter what the actual orientation of an Atom and the direction of SGMF are, any Atom in the SGMF is either aligned with or against SGMF. Half of the atoms are Spin-Up and the other half of Atoms are Spin-Down while they are in the Stern-Gerlach Device. Once they are out of the SGMF, the Spins of the neighboring Atoms are in opposite directions, (Up, Down, Up, Down, ...).

Surprising but True: Atoms in an External Magnetic Field are Governed by Bushism (Worth Repeating).

You are either with us or against us, the Bushism; if you are not totally against us, we will torque you Up to our side, Spin-Up; if you are totally against us, you are our enemy, we see to your Downfall, Spin-Down.

Bushism is the operation principle of Stern-Gerlach Device. It is simply a useless device. It has no use for anything except to demonstrate that an Atom has a Spin Magnetic moment (SMM), and Atoms in a population are magnetically coupled. It has no use even as a children's toy since it is a health hazard.

An Atom in the SGMF is just like toddlers under parental or teacher supervision; they behave according to the instructions given if parents or teachers are in the vicinity. As soon as they are out of the sight of the parents and teachers, they do what they want to do. They have no memory of what they were being told. However, children will remember through repetition; no such luck for Stern-Gerlach Device.

In the case of an Atom, no matter how many times an Atom has been there in a SGMF, it will never learn to remember the direction of the SGMF. As soon as Atoms are out of SGMF, they are back at their prior orientation, like nothing happened. External magnetic fields cannot alter the Spin of an Atom permanently. In the absence of an external magnetic field, the direction of the Spin of an Atom is determined by the Spins of a group of Atoms the Atom is part of.

Presence of Atomic SMM is an indication that Atom is an orbiting system. Spin is a Bi-Polar 3D vector and hence cannot be represented by 2D matrices. Spin Quantization as Up and Down is not possible since there are no Spin Monopoles. The representation of Spin-Up and Spin-Down by orthogonal vectors cannot be done without Spin monopoles, without Magnetic Monopoles. There are no Spin Monopoles. There are no Magnetic Monopoles.

Entanglement is magnetic coupling between the Spins of neighboring Atoms, which is real. There is nothing spooky about action at distance between magnetically coupled particles. Spin entanglement can only take place in the absence of any external magnetic field. In the presence of an external magnetic field, entanglement is not possible. The entanglement of the Spins of two particles by the Stern-Gerlach devices is volatile, not permanent.

Fictitious Spin-1/2, which has spookified nature, is merely a result of a theoretical blunder wrapped in bogus interpretation of the Stern-Gerlach Experiment. Quantum Mechanics mantra "Shut Up, Compute, and publish (SUCp), you will get the tenure" is no different from Religious mantra "Shut Up, Donate to us, and pray (SUDp), you will get an admission ticket to the paradise for the next life." The only difference is that the tenure is given in this life, whereas whatever given by a religion is always for the next life that does not exist. In religion, it does not matter what you do, you don't get reward until you exit this life and start whatever comes next, if the next exists; nobody knows what that next is; nobody knows what is waiting after the exit, not even the religious priests who make that phony claim and make a living out of it, for their selfish gain. Have you ever questioned where the priests get funds to support their fancy lifestyle? What a way to stop questioning. Interestingly, there are people who believe in these Crafted Prophecies (CRAP). You may wonder where the money comes for building palaces for the top echelons of the religions; they get to enjoy this life to the fullest from your donations, while you have to wait until the exit to collect your reward. Isn't that interesting? What did a guy who claimed he was a messenger of a creator did just after that claim, he went on a marriage spree with no regards to age and asked the followers (men) to do the same. If a man can have multiple wives, why can't a woman have multiple husbands? Simple Logic. It shows religions were created by whom for whose benefit? Religions remain as means to justify and continue historical gender discrimination. Gender discrimination is the norm of every religious Doctrine. Before you pray toward a black box several times a day, don't you think you should at least ask what is in the Box? You do not have to pray toward space junk. There is no creator Up in space. So, stop pointing Up into space to indicate where the creator is. There is no Up in space.

Another similar class of predators is the executives of charity organizations. We all know what is going on there. When a disaster strikes, they are there in full force on fundraising for disaster relief. Their only concern is not the victim of the disaster, but to make sure they have enough funds to pay their million-dollar salaries and bonuses until the next disaster strikes. If those charity organizations can initiate a natural disaster, they certainly will since their bank accounts get multi-billion dollar boost every time a disaster strikes. Money sits in their bank accounts to pay for million-dollar executive salaries, yet disaster victims are still living in rundown tent cities as in the case of Haitian earthquake victims. They collect billions of dollars and deposit them in their bank accounts, distribute a few water bottles and few tents, and they move on to the next fundraising venture. If you want to get a glimpse into the so-called charity organizations, look at the lifestyle of executives of the charity organizations. They build million-dollar mansions for themselves from the money that is raised for disaster victims; decades passed, yet Haitian earthquake victims are still in temporary shacks.

Nature does not normalize. QM has no existence without wavefunction normalization. For a function to represent a probability distribution, the function must be static and the area under the function must be unity for the entire range of the function without zeros. Wavefunctions are not static functions. Wavefunctions have no existence without propagation. Propagating wave functions cannot be normalized for the area under it to be unity for the entire range. Wavefunction normalized for the area under it to be unity just for the range of wavelength cannot represent a probability distribution. The square of a wave with zero-crossings cannot represent a probability distribution. Probability is for the past, not for the present. A propagating wave cannot be a probability distribution and probability distribution cannot be a propagating wave. A probability wave is an oxymoron.

Quantum Measurement Problem is a human folly, result of several theoretical and experimental а blunders. The state of an electron in an atom cannot be uncertain. Uncertainty of an electron breeds radiation. The state of a microscopic particle cannot have uncertainty. Uncertainty is not free. Uncertainty costs energy. The position and momentum of a particle cannot be uncertain. The position and momentum of a particle are mutually dependent. There cannot be momentum without the change of position. If a particle has momentum, the position of the particle cannot be fixed. A particle with constant momentum must take a linear or circular path. There is no measurement problem associated with microscopic particles. There is nothing preventing the measurement of both the position and the momentum of a particle concurrently. The precision of momentum is directly related to the precision of position since the momentum per unit mass is the change of position per unit time. To measure both the position and the momentum of a particle simultaneously, all you need is a single radar pulse. The time delay of the radar pulse provides the position information, while the frequency shift of the radar pulse provides the momentum information.

Irrespective of the size of the particle, the state of a particle is unique. Mathematical representation of the state of a particle must be unique. You cannot use a non-unique mathematical model for modeling the state of a particle; the model must be unique. You cannot model the state of a particle using a non-unique mathematical model and force your intentional or no-intentional modeling mistake on nature and falsely claim that a particle can be at multiple states at the same instant. State of a particle cannot be represented by eigenvalues of operators since eigenvalues are not unique. A Matrix operator has multiple eigenvalues hence the position and momentum a particle cannot be modeled by Matrix Operators. Matrix Operators cannot satisfy the non-commutative relationship that is fundamental to Quantum Mechanics.

The Position and the Momentum of a particle must be unique at any time. Momentum has no existence without change of position. Position of a particle must change for it to have a Momentum. If position is fixed, there is no momentum. If momentum is fixed, the path is either linear or circular, not a wave. The momentum determines the position of a particle and the change of the position determines the momentum of a particle; the position and momentum are mutually dependent. Position and Momentum cannot be independent. If Momentum cannot even exist when position is fixed, there is no way for the Position and Momentum pair to be a Fourier Transform Pair. The position and momentum of a particle must be independent in order for them to be a Fourier Transform pair; this is impossible since the momentum per unit mass is defined by the change of position per unit time. As a result, Position and Momentum cannot be a Fourier Transform Pair.

The existence of momentum requires the change of time and hence Function $\exp[(j/\hbar)\mathbf{p} \cdot \mathbf{r})]$ has no existence if the time is fixed. Heisenberg's Uncertainty Principle has no existence without Position and Momentum of a particle being a Fourier Transform Pair. The Position and Momentum pair of a particle cannot be a Fourier Transform pair since there is no momentum without the change of position. The Heisenberg Uncertainty Principle is false, invalid.

Schrodinger equation was founded upon the invalid representation of the state of a particle as eigenvalues of operators. Schrodinger equation also incorrectly assumes that the energy of a particle is quantized. In addition, Schrodinger equation also assumes that the function $\exp[(j/\hbar)\mathbf{p} \cdot \mathbf{r})]$ is time independent, which is completely incorrect since it has no existence if time is fixed. Function $\exp[(i/\hbar)\mathbf{p} \cdot \mathbf{r})]$ is time dependent since position **r** and momentum **p**, are time dependent. At any given time, there is a unique position and a unique momentum for any particle irrespective of its size. The position and the momentum of a particle are unique at any given time. The energy of a particle is continuous, not quantized, e≠hf. You cannot replace the energy of a particle by e=hf. Energy cannot be quantized e≠hf since frequency has no independent existence. Frequency has no existence without amplitude. The relationship e=hf is meaningless since the frequency f has no existence without amplitude. State of a particle cannot be modeled as eigenvalues since eigenvalues are not unique and hence the Schrodinger equation does not hold true. Probability-waves, Particle-waves,

Wave-particles, and Light-Quanta are oxymorons. Reality does not depend on Observers; it is the Observers who misrepresented Reality and turned physics into voodoo-physics.

Lemma:

No matter how many times an Atom is placed in an external magnetic field, you cannot alter the Spin of an Atom permanently. Atoms do not have a memory of its direction of the Spin since the direction of the Spin is not a state of an Atom. Spin or the orientation of the Spin of an Atom is determined by the population of Atoms in the absence of an external magnetic field.

Lemma:

Bell's theorem is meaningless since the direction of Spin is not a state of a particle.

Lemma:

Stern-Gerlach Device is simply useless. It can neither measure nor set the spin of an Atom. The Stern-Gerlach Device can only reveal that an electrically neutral Atom has a Spin Magnetic Moment. We do not need a Stern-Gerlach Device to know that since an Atom, which is an orbiting system of charge particles, has a Spin Magnetic Moment..

First Law of Mathematical Modelling:

It does not matter what you are modeling, the model that is used for representing any real system must be unique.

Eigenvalue representation is not unique and hence the state of a particle cannot be modeled as eigenvalue representation of operators. An observable cannot be represented by a matrix Operator since that representation is not unique. Matrix Operators cannot be in Quantum Mechanics since Matrix Operators do not satisfy the non-commutative relationship that Quantum Mechanics is founded upon..

Second Law of Mathematical Modelling:

The observables of a model must be real.

A mass cannot be in multiple places simultaneously. Vacuum has no energy. Space cannot be warped by a mass. Time and mass cannot be relative. Mass determines the momentum, not the other way around. Momentum and acceleration do not determine the mass of an object. Space cannot expand.

XXV. INVALID OPERATIONS IN QUANTUM MECHANICS

Matrices have no place in Quantum Mechanics. Matrix Operators of finite dimensions do not satisfy the non-commutative relationship that Quantum Mechanics is based on. It has been suggested that this limitation can be overcome by using Matrix Operators of infinite dimensions [1]. Heisenberg's derivation of Quantum Mechanics is based on the Matrix Operators of infinite dimensions. However, Matrix Operators of infinite dimensions are not Hermitian, not invertible, and have no eigenvalue representation and hence Matrix Operators of infinite dimensions also cannot be Operators of Observables in Quantum Mechanics. Matrices of finite dimension cannot represent the Operators of Observables since they have no eigenvalue representations.

To represent an observable by an Operator, the Operator must have an eigenvalue representation and the eigenvalue of the operator must be unique. The representation of an observable by a matrix Operator is not unique since Matrix Operator has multiple eigenvalues. An observable cannot be represented by an Operator that has multip[le eigenvalues.

Spin bipoles cannot be represented by Pauli\s Spin Matrices since there are no Up and Down unipoles. Spin-Up and Spin-Down that have no existence without each other cannot be represented by the 2D orthogonal eigenvectors of Pauli Matrices. Pauli Matrices make Spin Matrix rectangular and a rectangular Matrix Operator has no eigenvalue representation; Pauli Matrices cannot exist. Irrespective of whether the order of a Matrix is finite or infinite, a Matrix cannot represent the Operator of an observable in Quantum Mechanics.

The inability of Matrix Operators to be in Quantum Mechanics is not the only problem in Quantum Mechanics. There are many other invalid operations in Quantum Mechanics. The basic assumption in Quantum Mechanics that the position and momentum of a particle behave as a wave is meaningless. The choice of the Position Operator in Quantum Mechanics is contradictory. Quantum Mechanics is pseudo-mathematical in its foundation. Here are some of the invalid assumptions, concepts, and operations in Quantum Mechanics:

1). De Broglie's Hypothetical Particle Wavelength is Incorrect, $\lambda \neq h/p$:

The genesis of Quantum Mechanics is the false assumption that a particle with momentum **p** behaves as a wave of wavelength λ given by de Broglie wavelength λ =h/p, where p²=p•p and h is the Planck constant. De Broglie wavelength is incorrect. No particle has the energy required to be at de Broglie wavelength. A particle with momentum p does not have energy e=pc. The energy of a particle with momentum p is $e=p^2/2m$. The energy of a particle has nothing to do with the speed of light c. In fact, the motion of a particle has nothing to do with the speed of light. A particle of mass m does not have rest energy since propagation of light is not relative and has no standstill existence, e≠mc². A stationary mass does not have the relative speed c relative to light since light is not relative and has no stand still existence [15,16]. The rest kinetic energy is an oxymoron. Planck's e=hf does not hold since frequency has no energy and frequency f has no existence without amplitude. Light has no energy, no momentum, no temperature, no entropy. Light is a momentum generator on charge particles. Light has no effect on electrically neutral particles. The

interaction of light with matter is not a collision of momenta.

There are no massless particles. A particle by definition is an entity with a mass. Any entity that has no mass is not a particle. Particles do not behave as waves. If you are religiously inclined to consider the behavior of a particle as a wave, you should at least use the wavelength that the energy of a particle can support. Religions are orthogonal to science. Religion is not the reality. Reality is not a religion. Religious belief is not a realistic belief. Religious Doctrines are personal ideologies or authoritative commandments forced upon us at a time when there was a lack of causal understanding of all that surrounds us, in the dark ages. Religions and the concept of a creator have been forced upon to fill the void of our ignorance of why we are here, just as the fast food for hunger, or probability for our ignorance of the underlying physics of natural processes. Either we just go with it since it is there for the taking for some donation for the temporary gratification or we have to go with it since it is forced upon us. If you need an entry ticket to heaven for the next life, you have to pay the Vatican administrators to enjoy this life extravagantly.

2). Fitting Hypothetical Particle Wavelength:

If a particle of momentum p is falsely assumed to behave as a wave, the fitting wavelength is given by λ =2h/p. De Broglie wavelength is off by a factor of 1/2, which is a crucial ubiquitous factor in Quantum Mechanics. Without de Broglie wavelength error, this factor 1/2 would not have even appeared in Quantum Mechanics. If you love the sound of Quantum 1/2 Spin, then, you may want to thank de Broglie and the gang (cool and the gang) for making this theoretical blunder because without it you wouldn't have come across such a bizarre meaningless nonsense as Spin 1/2. Although talking about "Spin 1/2" may sound brainy, the reality, in fact, is the complete opposite. Even though nobody may want to hear it, the term Spin-1/2 is simply meaningless. You cannot have half Spins or integer spins. Orbiting systems Spin. An Atom spins. A particle ejected from an orbiting system carries its spin with it. Spin is 3D. Spin is Bipolar. 3D Bipolar Spins cannot have 2D states. 3D Spin cannot be represented by 2D Matrix Operators.

This reminds me of a British professor who appeared on a television program and claimed to the interviewer that a spin can be either Up or Down. The interview appeared puzzled when she used her thumb to indicate the direction. It clearly showed that she had no idea of what she was talking about. Nobody who talks about Spin-1/2 has any clue to what exactly it is because there is no Spin 1/2. Spin-Up and Spin-Down are not states of a particle. Spin-Up and Spin-Down have no existence without an observer. Spin is Bipolar. Bipolar Spins cannot have unipolar Up or Down. There cannot be an Up without a Down. Up and Down reside in the same Spin, not in two separate Spins. One person's Up can be another person's Down. Entities that only have existence relative to observers cannot come in Quanta.

If you need a direction of a finger to make a point, you are talking about a mental state, not real state; you are talking about something that is observer dependent. State of a particle cannot be observer dependent. You do not need the direction of a finger to represent the state of a particle. However, you cannot blame the professor, the preacher. Preacher's job is to preach what is in the religious text like a parrot; a preacher is paid to preach the text, what is in the text exactly.

Lemma:

If a particle is assumed to behave as a wave, the wavelength λ that the energy of a particle can support is λ =2h/p. The momentum of a particle cannot generate a wave. Particles do not behave as waves and hence this wavelength is hypothetical. A particle wave is an oxymoron.

Lemma:

It is the stopping of a charge particle of momentum that generates electromagnetic waves; these waves are not particle waves. These generated electromagnetic waves say nothing about the position and momentum of the particle that generated them.

3). Hypothetical de Broglie Wavelength is Not Unique and It Poses a Self-Contradiction:

The wave representation of a particle is invalid and meaningless even with the fitting wavelength. If a particle behaves as a wave, the wavelength of a particle must be unique. Otherwise, wavelength says nothing about the particle. We gain no information about a particle by knowing the wavelength of a particle unless it is unique. If the wavelength of a particle is dependent on the momentum of a particle, λ =2h/p, then, λ will not be unique since the momentum is not unique. Given momentum **p** can be a result of a microscopic particle of very high speed or macroscopic object of very low speed since they both can be at the same momentum.

If the position of a fast moving microscopic particle of momentum p is uncertain, then, the position of a near standstill macroscopic particle of the same momentum must be equally uncertain since de Broglie wavelength is determined by the momentum alone, which are equal in this case. This is a contradiction since a slow moving macroscopic object cannot be as uncertain as a fast moving microscopic particle. There is no uncertainty in position when we have a massive object that is at near standstill. De Broglie conjecture cannot hold true.

If two free-moving particles of the same momentum behave as waves, they both have the same de Broglie wavelength. If we have two particles of mass m and M with same momentum p, they both have the wavelength λ =2h/p. If the speed of the mass m is u_m and the speed of the particle of mass M is u_M, we have,

$u_m = \lambda f_m$ and $u_M = \lambda f_M$,

Multiplying each with respective masses m and M, we have,

 $mu_m = \lambda mf_m$ and $Mu_M = \lambda Mf_M$. Further, if both particles have the same momentum, $mu_m = Mu_M$.

We now have, $Mf_M = mf_m$

or $f_M = (m/M)f_m$.

This indicates that the frequency is decreased by the increase of mass, or wavelength is increased by the increase of mass. However, according to the de Broglie wavelength, λ =h/Mu, wavelength decreases with the increase of mass, or frequency increases with the increase of mass, which is a contradiction. De Broglie wavelength is a self-contradiction. A particle cannot behave as a wave of wavelength described by de Broglie wavelength. De Broglie wavelength is meaningless.

4). Momentum Does Not Generate Waves:

It is not the momentum of a moving mass that generates waves. What generates waves is moving charges or chomentum. When moving charge is stopped, it generates electromagnetic radiation waves. The frequency of the generated radiation is proportional to the chomentum, charge times the speed, qu. Proportionality factor of the Radiation Parameter can be obtained using a beam of electrons or protons in the Double-Slit experiment. The gradient of the curve of wavelength against chomentum, the charge times the speed, is the proportionality factor or the Radiation Parameter. Momentum is just a chauffeur for a charge. Momentum does not generate waves, a charge carried by a mass does.

The optimal radiation energy is generated when the charge to mass ratio of the particles is maximum. The charge to mass ratio is maximum when a beam of electrons is used. As a result, the highest frequency of the radiation waves is achieved when a beam of electrons is used in the Double-Slit experiment or in Charged-Particle Microscopes. When a beam of electrons is used in a Charged-Particle Microscope, it is an Electron Microscope. An Electron Microscope is optimal; it is the highest resolution that can be achieved in any Charged-Particle Microscope.

5). Wavelength Cannot be Inversely Related to Mass:

According to de Broglie wavelength, wavelength is inversely proportional to the mass of a particle for a aiven momentum: higher the mass, the lower is the wavelength. If this is the case, why are we using charge particles with smallest mass, electrons, in Particle Microscopes? Should we not have gotten better resolution choosing heavy particles if the de Broglie wavelength is correct? The fact is that the smaller is the mass of the particles, higher is the resolution in Particle Microscopes. That is why we have Electron Microscopes, not Proton Microscopes. The resolution of Proton Microscopes will be inferior to the resolution of Electron Microscope by a factor of 2000. If the resolution increases with the increasing mass as it is in the case of de Broglie wavelength, then the whole concept of de Broglie waves or particle

waves must be false; it cannot cannot be real.

If de Broglie's particle waves exist, the wavelength of a particle cannot be inversely proportional to the mass of the particle and hence de Broglie wavelength cannot exist and it is meaningless. De Broglie's particle waves of wavelength λ =h/p is voodoo Physics, not Physics.

De Broglie's particle waves play no part in a Particle-Microscope. The operation of Particle Microscopes is based on the electromagnetic waves generated by the stopping of the charge particles, not some hypothetical, non-existent, and meaningless particle waves. The fact is, it is the moving charges that generate waves, not the moving masses. The job of the mass in Particle Microscopes is to bring charges into motion. Momentum of a particle gives the charges the chomentum; it drives the charges. Smaller the mass, higher the speed, and higher the frequency of the generated wave, and hence higher the resolution of the Particle Microscope. What is at work in Particle Microscopes is electromagnetic waves generated due to the stopping of the charges by the specimen that is used for imaging, not particle waves of de Broglie wavelength. There are no particle waves of de Broglie wavelength. Particle waves (de Broglie waves) and wave particles (photons, gravitons, and Higgs Bosons) are oxymorons.

In fact, contrary to the de Broglie wavelength, higher the mass of the particles used in a Charged-Particle Microscope, lower is the resolution. Neutral stable beam of particles does not generate an image in a Charged-Particle Microscope, which indicates that there are no particle waves of de Broglie wavelength.

It is only for the case of moving electrons, the wavelength of electromagnetic waves generated due to the stopping of electrons of momentum p is given by $\lambda = \eta_e/p$, where $p = m_e u$, u is the speed of electrons and m_e is the mass of electrons, η_e is a constant that can be determined by the Double-Slit experiment. The mass m of an object only affects the speed u of the charge q that the mass carries. The wavelength of the wavelength generated by a charge q of any mass with speed u is given by $\lambda = \eta/qu$.

Lemma:

What generates an image of a specimen in a Charged-Particle Microscope or Electron Microscope is the electromagnetic waves generated due to the stopping of charged particles by the specimen. A beam of neutral stable particles does not generate an image in a Particle Microscope. It does not matter what the momentum of a particle is, an electrically neutral particle cannot generate a wave and cannot generate an image of a specimen in a Particle Microscope..

6). Smaller the Mass Higher the Resolution of a Particle Microscope:

What generates an image in Particle Microscopes is the electromagnetic waves generated by the collision of charged particles with the specimen used for imaging, not the mass of the particles. Mass here is just a chauffeur, taxicab. Unlike in a [chauffeur and a patron] pair or a [taxicab and a patron] pair, in a [charge, mass] pair, charge has no existence without a mass; that is why charge particles with smallest mass are used.

If you have access to a Double-Slit Experiment, use a beam of electrons and a beam of protons separately with the same momentum and use the interference pattern to get the wavelength for both beams. According to de Broglie conjecture they both should give the same wavelength since the momentum of both beams is chosen to be the same. However, you may find that the wavelength for beam of electrons is much smaller than the wavelength for a beam of proton because it is not the momentum that determines the wavelength, it is the chomentum, qu that determines the wavelength, where q is the charge and u is the speed of the particles.

In an electric field, the speed of a charge particle depends on the mass of the charge particle. Smaller the mass higher the speed for a given momentum. Higher the mass the smaller the speed for a given momentum. It is only in a gravitational field that the speed of an object is independent of the mass. Gravitational effect on microscopic particles is negligible.

Lemma:

Smaller the mass of a charged particle, higher the acceleration of the charge for a given electric field, and hence higher the frequency of the generated radiation waves due to the stopping of the charge in a collision.

Lemma:

The generated electromagnetic radiation frequency due to the stopping of a moving charge particle is determined by the charge to mass ratio of a particle. The higher is the charge to mass ratio of a charge particle, higher is the radiation frequency or shorter is the wavelength.

The highest achievable radiation frequency or the shortest achievable wavelength by a moving charge particle is given by moving electrons since it is the minimum mass required for the existence of a charge. Frequency of radiation can be increased, or wavelength can be made shorter by increasing the speed of electrons or the momentum of electrons. The separation between two adjacent frequencies, or the separation between two adjacent wavelengths is limited by the speed of light if one assumes that the speed of a mass cannot exceed the speed of light. However, there is nothing that can limit the speed of a mass since propagation of light is not relative. The motion of a mass has nothing to do with the speed of light. Speed of light is not the speed limit of the universe.

Lemma:

Moving electrons of momentum p generate

electromagnetic waves of wavelength $\lambda = \eta/p$. These waves are not particle waves. There are no particle waves.

In Electrons Microscopes, the electromagnetic waves for imaging a specimen is generated by stopping moving electrons by the specimen. Instead of generating electromagnetic waves by stopping moving charge particles, we can simply use electromagnetic waves generated by any other means of the same wavelength or frequency and obtain the same image of a specimen. It is much safer to use electromagnetic waves generated by other means than electron microscopes for diagnosis purposes since the collision of electrons with a specimen can damage the cells of the specimen.

7). De Broglie Wave Conjecture is False:

De Broglie's wavelength conjecture is false and meaningless. In fact, it is the biggest theoretical blunder next to Special Relativity and Relative Time since it is the Special relativity that led to the de Broglie conjecture. Without Relativity, there would be no de Broglie conjecture. Both Special Relativity and the General Relativity are false since light is not relative [15,16,4,5].

Maxwell equations for the propagation of light cannot be transformed onto moving frames. If time is relative, time will be directional. Further if time is relative, time will not be unique. Time must be unique and non-directional. Special Relativity and General Relativity are blind physics. Special Relativity and General Relativity are false in their foundation [15,16]. Lorentz Transform cannot transform Maxwell equations for propagation of light. What the Lorentz Transform transforms is the trivial solution of the Maxwell equations, static electric and magnetic fields, not the propagation of light. The trivial solution to the Maxwell equations is the static electric and magnetic fields. The static electric and magnetic fields satisfy the Maxwell equations,

de Broglie conjecture is а result of misinterpretation of the electromagnetic waves generated by the collision of a charge particle as particle waves. There are no particle waves. If there are particle waves, when a moving neutral and stable particle or a moving mass is stopped, it should generate waves according to the de Broglie conjecture. However, when a moving neutral stable particle or a moving mass is stopped, it does not generate waves. You cannot get an interference pattern in the Double-Slit experiment for a beam of stable neutral particles. You cannot generate waves by throwing golf balls onto a Double-Slit barrier. The change of momentum of a neutral stable particle does not generate waves.

It is the stopping of a charge, the change of chomentum, that generates electromagnetic radiation waves. It is these generated electromagnetic waves due to the stopping of a beam of charged particles by the Double-Slit barrier that had been misinterpreted as particle waves or dBroglie waves in the Double-Slit experiment. There are no de Broglie waves or particle waves. The false concept of particle waves is meaningless, an oxymoron.

de Broglie conjecture came out as a direct extension of wavelength of hypothetical light particles or so-called photons to particles of mass. The energy of a hypothetical photon or light particle e=pc cannot be used as the energy of a particle of mass m as de Broglie did. The energy of a particle of mass m and momentum p is not given by e=pc; it is given by $e=p^2/2m$, $e\neq pc$. There are no photons. Einstein's photon derivation is invalid. Light is never a particle. Light is not relative [16,15,4]. Light cannot be spatially random particles [8]. Boltzmann entropy cannot be applied to hypothetical light particles as Einstein did in his photon derivation. When there are no photons, there is nothing for de Broglie to extend to get his PhD. De Broglie conjecture fails where it originated. De Broglie waves or particle waves and gravitational waves are fantasy waves. Einstein's photons or light particles are fantasy particles.

8). De Broglie's Hypothetical Particle Wavelength is Time-Varying:

If a particle has a wavelength $\lambda = h/p$, a particle with probabilistic position and momentum cannot have a constant wavelength. A particle with probabilistic position cannot have a Momentum Operator given by the derivative with respect to the position. If the wavelength of a particle is dependent on the momentum of the particle, the wavelength will be varying continuously since particles are under constant influence of gravitational and electromagnetic forces, as well as, due to the frequent collisions that microscopic particles undergo. Charge particles are under the continuous influence of electromagnetic forces, and hence the momentum of a particle is varying continuously, not a constant. The position and momentum of a particle is determined by the external forces a particle is subjected to, not the chance or the probability. The wavefunction of a particle is determined by the position and the momentum. As a result, the wavelength of a particle is determined by the external forces a particle is subjected to, and hence it is deterministic. There is no probability here. There are no particle waves. A particle does not have a wavefunction. There are no wave functions for particles. There is nothing waving in an object of mass or a particle of mass.

The position and momentum of a particle of mass must be unique. The position and momentum of a particle cannot be uncertain without the change of the position and the momentum and the passing of time. If the position and the momentum of a charge particle is uncertain, it leads to radiation loss. If the position and momentum are uncertain, de Broglie wavelength itself will be uncertain and time varying.

9). There are No Spin Matrices:

We can find matrices that satisfy the auto cross-product relationship, $S \times S = j2\eta \hbar S$

 η =1/2 for de Broglie wavelength. that no particle has the energy required to be at,

 η =1 for the fitting wavelength that the energy of a particle can support,

where, $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$, $\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z \in \mathbb{C}^{M \times M}$, $M \ge 2$.

Lemma:

For the Spin Matrices S_x , S_y , $S_z \in \mathbb{C}^{M \times M}$, $M \ge 2$ to exist, the Matrix $S = [S_x, S_y, S_z]^T$ must be a valid operator with an eigenvalue representation. The rectangular Matrix $S^T \in \mathbb{C}^{3M \times M}$ has no eigenvalue representation, and hence Matrix $S = [S_x, S_y, S_z]^T$ does not represent a valid operator.

The problem is that when the Spin Matrices \mathbf{S}_x , \mathbf{S}_y , $\mathbf{S}_z \in \mathbb{C}^{M \times M}$, $M \ge 2$ are placed in a Spin Operator \mathbf{S} as its x, y, and x components, the Operator $\mathbf{S}=[\mathbf{S}_x,\mathbf{S}_y,\mathbf{S}_z]^T$ can no longer represent a Spin Operator. A Matrix cannot be an Operator in Quantum Mechanics. A Spin Operator \mathbf{S} with Spin sub-Matrices \mathbf{S}_x , \mathbf{S}_y , \mathbf{S}_z as the x, y, and z components is not a square matrix, not Hermitian, and has no eigenvalue representation. Operator that has no eigenvalue representation cannot be an Operator in Quantum Mechanics.

Knowing fully well that no particle behaves as a wave, if you still want to hypothesize particles to be waves of a certain wavelength, you must make sure that the particles have enough energy to be at that wavelength. Otherwise, the whole endeavor will turn into a big Joke. In fact, Quantum Mechanics itself is a big joke.

Spin matrices of order (2×2) are given below.

$$\begin{array}{cccccccc} {\bf S}_x=\eta \hbar) |0 \ 1| & {\bf S}_y=\eta \hbar) |0 \ -j| & {\bf S}_z=\eta \hbar) |1 \ 0| \\ |1 \ 0| & |j \ 0| & |0 \ -1| \end{array}$$

 $S^{2}=[S_{x}^{2}+S_{y}^{2}+S_{z}^{2}]$

$$S^2 \varphi = 3\eta^2 \hbar^2 \varphi$$

```
S_z φ=sηħφ_z
```

where, $\mathbf{S}^2 \in \mathbb{C}^{2 \times 2}$, φ is a 2-dimensional Eigenvector, $\mathbf{S}^2 = \mathbf{S} \cdot \mathbf{S}$. $\eta = 1/2$ under de Broglie wavelength. $\eta = 1$ under the wavelength that energy of a particle of mass can support or under the fitting wavelength.

Although Matrix S^2 can represent an Operator, Matrix $S=[S_x, S_y, S_z]^T$ does not have eigenvalue representation and cannot be an Operator of an Observable.

Orbit Angular Momentum and Spin Magnetic Moment are Bi-Polar. Bi-Polar quantities cannot be quantized. Vectors cannot be Quantized. Observer dependent quantities cannot come in quanta. Time dependent quantities cannot be quantized.

Spin is bipolar. Bipolar Spins cannot be represented by unipolar Up and Down. Spin-Up and Spin-Down are not orthogonal. Spin-Up and Spin-Down are 3D and correlated perfectly negatively. Spin-Up and Spin-Down cannot be represented by 2D orthogonal vectors since Spin-Up has no existence without Spin-Down and vice versa. Spin-Up and Spin-Down cannot be represented by 2D Matrix Operators since Spin-Up and Spin-Down are not unipolar. Pauli's Spin Matrices require Spin-Up and Spin-Down to be unipolar; Spin-Up and Spin-Down cannot be unipolar. The eigenvectors of the Spin Matrix Operators cannot represent the Spin-Up and Spin-Down. Without unipolar Spin-Up and Spin-Down, there cannot be Pauli Matrices, there cannot be Spin Matrices \mathbf{S}_{x} , \mathbf{S}_{y} , \mathbf{S}_{z} .

Although Spin Matrix $S = [S_x, S_y, S_z]^T$ satisfies $S \times S = j2\eta\hbar S$, the Matrix S does not represent an Operator of an Observable, because S is not a square matrix, S is not Hermitian, and S has no eigenvalue representation. Even though S_x , S_y , S_z and $S \times S$ have properties that are required to be Operators in Quantum Mechanics, Matrix S cannot be an Operator of an Observable in Quantum Mechanics. Matrix S that has no eigenvalue representation cannot be a Spin Operator.

Lemma:

Pauli's Spin Matrices cannot exist. Even though Pauli Matrices S_x , S_y , S_z and $S \times S$ have properties that are required to be valid Operators in Quantum Mechanics, the Matrix **S** cannot be an Operator of an Observable in Quantum Mechanics.

When the fitting wavelength that the energy of a particle of mass m and momentum p can support, e=p²/2m, is used, Spin 1/2 ceases to exist, Spin 1/2 disappears. It is only the Spin-Monopoles that can be represented by Spin Matrices, not Spin Bi-Poles, There are no Spin-Monopoles. Bipolar Spins have no Spin-Monopoles. Spin-Matrices cannot exist without Spin-Monopoles. No Bipolar Spins can he represented with Spin Matrix Operators. Spin Magnetic Moment cannot be represented by Pauli's Spin Matrix Operators or any other Matrix Operators since there are no Magnetic Monopoles; there are no Angular Momentum Monopoles. As a result, Spin Matrices have no existence. Pauli Matrices have no existence.

Nature has no Ups and Downs, no Lefts and Rights, no Ins and Outs, no Norths and Souths; they only have an existence relative to an observer. Entities that only have an existence relative to an observer, Observer dependent entities are not states of particles. Spin-Up and Spin-Down are not states of particles. Spin Up and Spin Down are Observer dependent. Bipolar spins cannot have Unipolar Spin-Up and Spin-Down. Spin matrices of any dimension cannot exist.

Lemma:

Spin cannot be quantized. Spin is Bi-Polar. Bi-Polar Entities cannot be Quantized without Monopoles. There are no Spin-Monopoles.

Lemma:

Spin-Up and Spin-Down that have no existence without observers cannot come in quanta.

Lemma:

A Spin that is Up for one person and Down for another person cannot come in Up and Down quanta.

10). There are No Spin ±1/2 Operators:

Bipolar Spin cannot have unipolar Up and Down. Spin-Up and Spin-Down are not orthogonal. Spin-Up and Spin-Down are perfectly correlated negatively. Spin-Up and Spin-Down reside in the same particle. There cannot be Spin-Up without Spin-Down and vice versa. Bipolar Spins cannot be represented by Pauli's 2D Matrix Operators. Pauli's Spin Matrices represent non-existent Unipolar Spins. Pauli's Spin Matrices are utter nonsense. What is a Half-Spin or an integer Spin anyway? They are meaningless. Talking about $\pm 1/2$ -Spin does not show that you are brainy, but that you are clueless on what you are doing and talking about. Spin $\pm 1/2$ and $\pm 1/2$ are meaningless; they do not exist. There are no Spin $\pm 1/2$ Operators. There cannot be Spin Matrix Operators.

There is no Spin 1/2. Spin 1/2 is simply meaningless nonsense. Nobody even appears to understand what it is. Only thing that is there to understand is the fact there is no such thing. People who write about it do not seem to have a clue. People read about it in textbooks just the way they read ancient Crafted Prophecies (CRAP) such as nonsensical religious texts, which have nothing realistic or meaningful.

Spin 1/2 only appears with the use of de Broglie wavelength $\lambda = h/p$, which is obviously incorrect since no particle has the energy to be at that wavelength. With the use of the fitting wavelength λ =2h/p, Spin 1/2 disappears from existence in Quantum Mechanics. Spin 1/2 is a manifestation of de Broglie wavelength being off by a factor of one half. No particle of mass m and momentum p has the energy required for us to cook up a de Broglie wavelength, what you got is half baked. Those unexpected side effects, such as particles appearing in different places at the same time and multi-worlds are human hallucinations that resulted from consuming half-baked goods such as Quantum Spin 1/2. If you are feeling uneasy about Quantum Mechanics, it is time to open your eyes and see the reality. Reality has turned into a bad word for physicists, for voodoo practitioners.

Spin 1/2 is a prolific paper mill for academia, the only thing they care about. No open minded person cares about or even glances at those propaganda journal publications run by narrow minded, egotistical, nasty, got-stuck-in-the-past editors and reviewers. Most propaganda journals and some of the textbooks are not worth the wood-pulp that is being wasted and the trees that are being cut down. If you need something new that is worthwhile to read and a worthwhile place to publish without breaking the band, discard the old journals that charge exorbitant amounts of money to publish/read and have reached the stature of ancient nonsensical religious texts. Find a worthwhile place to publish that charges next to nothing for a publication. Find an internet journal of twenty first century origin. Leave the old-fashioned propaganda journals (voodoo science Journals) to collect dust in libraries or in museums of history with their old guard blind editors and nasty reviewers who want nothing more than to stick with the preaching of

ancient religious texts blindly. These reviewers do not even seem to know the basic steps of reviewing a paper. When you review a paper, you must clearly indicate why the paper is accepted or rejected. Any pathetic creature who does not know how to do that should not become a reviewer. It is interesting that the people who become reviewers of these so-called scientific journals (voodoo science Journals) are not just the creatures who are ignorant about the subject. they appear to be senile too. The editors of voodoo science journals somehow manage to choose the dumbest and nastiest people as their reviewers. On the other hand, it is understandable since anybody who understand the subject has better thing to do than becoming reviewers for religiously guarded old school voodoo science journals that are desperately trying to hold on to false theories in religious zealous to keep the funding from drying out, which would indeed happen if the fallacies of the long held theories are exposed. Fallacies of long held theories are real and they are going to be out in the open sooner or later, not preventable. If you want to see the mockery of Einstein's Time Dilation and Special Relativity, all you have to do is consider a beam of light at an angle in a moving train. Einstein's time dilation Factor is angle dependent [15]. The Lorentz Transform is not unique [4]. Lorentz Transform cannot transform Maxwell equations onto inertial frames [16,17]. The assumption of the position and momentum of a particle behaving as a wave and the choice of the Position Operator as the position itself are contradictory. A particle being in multiple places simultaneously is voodoo physics. Particle waves and wave particles are oxymorons. There are no particle waves. The position and momentum of a particle cannot behave as a wave. Gravitational waves are fantasy waves. LHC and LIGO are billion dollar blunders [9].

Nirvana: Enlightenment in Physics

Spin 1/2 is a result of de Broglie wavelength error, the Genesis of voodoo-physics. You cannot mix up electromagnetic potential energy with kinetic energy of particles of mass; they are not the same. Light does not have entropy, temperature, momentum, or kinetic energy. Frequency has no energy, $e \neq hf$. Energy cannot solely be given by the frequency itself since frequency has no independent existence without amplitude. A particle of mass m with momentum p does not have energy e=pc. Particles are not waves. Waves are not particles. Light bursts are not particles. Light has no entropy. Light can generate momentum on charge particles. Interaction of light with a mass is not a momentum collision. Compton's wavelength derivation is false. Light has no effect on electrically neutral particles. Coherent light cannot consist of spatially random particles. Realization of this is Nirvana. No meditation, no fasting in a cave for 40 days, or no sitting under a tree thinking about inhaling and exhaling on a meditation posture is required. If you fast for weeks in a cave, what you attain is hallucination. Hallucination does not make you a

messenger of a creator. How can somebody who doesn't even know what orbits what can be a messenger of a creator? Today, if somebody starts fasting in isolation and claims that he/she is a messenger of a creator, he/she would be a laughing stock in town. If some guy appears today claiming that he is a messenger of a creator and goes on enjoying a marriage buffet including less than 10 year olds, he will definitely end up in a mental asylum, unlike in the past. If a man can go on a marriage buffet without even any regard to the minimum age, why can women not go on a similar marriage buffet. It is interesting, they could get messages from a creator only when they are in hallucination under starvation, or false pretended hallucination in the normal state of mind. When you are in hallucination, it is not possible to separate what is real from what is manufactured in the mind. If there is a creator, and the so-called founders of religions in a state of hallucination have obtained messages from a creator, one thing is clear, no real creator would have given messages to keep more than half the population in enslavement under wrap and to allow a marriage buffet only for one group. Those messages are nothing more than human fabrications and self-serving human prophecies of hallucinations or false and pretended hallucinations. Twenty-first century earth is not the time and place for human Crafted Prophecies (hCRAP). Ancient religious texts are an insult to human intelligence. You cannot find truth in flat-earth or earth-centric era religious texts. You cannot find science in voodoo physics texts

Voodoo Science Journals that got stuck in religious doctrines accept complicated mathematical voodoo solutions to simple problems while rejecting simple real solutions to complicated problems. How can one claim that a particle can be in multiple places at the same time and call it physics? How can one claim time is relative, mass is relative, and propagation of light is relative and call it a science? How can one claim a particle is a wave and wave is a particle and claim it is physics? How can one claim position and momentum of a particle is a Fourier Transform pair and call it physics? They reject papers that go against their religious belief claiming that Special Relativity has been there for more than 100 years. Something being there for more than a hundred years does not make it correct or valid. These so-called reviewers cannot even find an acceptable reason to reject a paper because there is no acceptable reason to justify Special Relativity and Quantum Mechanics, voodoo Physics. They have to keep Special Relativity alive because it is their bread and broccoli, not because it is a valid scientific theory. The acceptance of a paper for these ignorant and arrogant reviewers and editors depends on how complicated pages look rather than what is really in it. They are either too lazy to read or have no background or an interest or capacity to understand it. If the paper approves the ideology of the voodoo cult, it is accepted, otherwise rejected. It is clear that the reviewers are overdosed with jealousy rather than the duty. Reviewers should not have

gotten their head swollen for being asked to review because the only reason they were chosen as reviewers is that all the real experts with any common sense are busy. When reviewers and editors receive a manuscript, it appears that they just turn the pages of a manuscript to see if it has complicated mathematics that they cannot understand; if there is and confirms to the religious doctrine of the voodoo-society, it is accepted, otherwise rejected. A paper that is sent to a reviewer lies on his/her desk collecting dust for at least a year before even he/she takes a look at it just to show how busy he/she is. We need editors who are smart enough and courageous enough to teach reviewers that the reviewers job is not to keep it for a year and then just rubber stamp accept or reject but to understand what is in the paper and show clearly why the paper can or cannot be accepted and what has to change in order for a not acceptable paper in the presence form to be acceptable, in a reasonable time frame, within weeks, not years. In any case, I do not even touch those cookie-cutter voodoo-journals and useless websites such as arxiv; they are simply a waste of time. There is nothing to learn from reading religious Journals, voodoo physics journals and textbooks. We do not expect to find science in a Religious Journal, so why bother reading them? They are a hindrance to progress and their extinction is a necessity and a benefit to the society at large. Physics has turned out to be a business, not science. They take every effort to protect the business irrespective of its scientific, mathematical and conceptual bogusness. Special Relativity Quantum Mechanics are bogus in its foundation [4,15,16,13,19].

11). Matrix Operator Representation of Angular Momentum is Not Unique:

For any quantity to come in quanta, that quantity must be unique. Angular momentum of a particle is not unique. For a particle with momentum \mathbf{p} and position \mathbf{r} , the angular momentum ℓ is given by, $\ell = \mathbf{r} \times \mathbf{p}$

where $\mathbf{r}=(x, y, z)$, $\mathbf{p}=(p_x, p_x, p_x)$, $\ell=(\ell_x, \ell_x, \ell_x)$. We can write this as, $\mathbf{Rp}=\ell$ where, $\mathbf{R} \in \mathbb{R}^{3\times 3}$,

 $\mathbf{R} = \begin{bmatrix} 0 & -z & y \\ z & 0 & -x \\ -y & x & 0 \end{bmatrix}$

Matrix **R** is always singular, $|\mathbf{R}|=0$, and hence **p** is not unique. Angular Momentum \prime is not unique for a given particle.

12). Angular Momentum is Time-Varying:

Although the angular momentum of an Orbiting System is time-invariant, angular momentum of an Orbiting Object in a Multi-Object Orbiting System is not time-invariant [6]. Hence, angular momentum cannot come in quanta. Angular momentum cannot be quantized. Although angular momentum can vary with time, there is no mechanism to adapt the angular momentum quanta with time. Time-varying quantities cannot come in quanta. Time varying quantities cannot be quantized. Vectors cannot come in quanta. Vectors cannot be quantized. Nothing in nature is quantized. Energy is not quantized [19,14,13].

13). Angular Momentum Cannot Come in Quanta

Angular momentum must have a rightful owner. As a result, if angular momentum comes in quanta, these quanta should know who they belong to. Angular momentum quantums (quanta) cannot just hang around wherever with whoever since angular momentum belongs to a specific object for a specific purpose. If you cut an angular momentum vector into pieces, you must know how to reassemble the vector into its whole from the pieces, otherwise, orbiting systems cannot hold together. Angular momentum quanta in Modern Physics do not have a mechanism to carry the ownership information and how they form a unified whole.

Angular momentum quanta do not have identifiers indicating which objects they belong to. If angular momentum came in quanta in a soup without identifiers to find out their rightful owner or without knowing how to stick to their owners, there would not be orbiting systems. Unlike data packets on the Internet, angular momentum quanta do not have identifiers. Any quantity that has a rightful owner, such as angular momentum, cannot come in quanta.

If angular momentum can come in quanta, how can an angular momentum quantum of one orbiting object be distinguished from an angular momentum quantum of another orbiting object? What keeps angular momentum quantum belonging to one object stuck to it, not to another? How does one angular momentum quantum know it belongs to this object, not to that object? If angular momentum comes in quanta, angular momentum of a multi-object orbiting system would be a jumble of angular momentum quanta soup that has no way of discriminating which quantum belongs to which object, without which orbiting system cannot hold together.

Angular momentum cannot come in quanta. If angular momentum comes in quanta, orbiting systems cannot be held together. If data packets on the Internet come without headers to identify themselves, we will not have an Internet. If angular momentum comes in quanta without a way to identify themselves, there would not be orbiting systems. We would not be here either.

If angular momentum comes in quanta, these quanta should be able to assemble themselves in a certain direction for an orbiting system to work. Angular momentum quanta do not have direction information to do that. If angular momentum comes in quanta, the direction information is lost. Without direction information, angular momentum is useless. Without the true magnitude and direction information of an angular momentum, orbiting systems cannot be held together.

14). Not Everything Can be Quantized:

For a quantity to come in quanta or to be quantized, that quantity:

- Must be unique,
- Existence should not be dependent on the change of time,
 - Must be a Monopole,
- Not Bi-Polar,
- Must be Scalar,
- Not a vector,
- Time-invariant,
- Position invariant (Space invariant),
- Not Observer Dependent,
- No specific belonging.

Spin and Orbit angular momentum do not satisfy these conditions, and hence cannot come in quanta. In fact, nothing in nature can come in quanta.

Lemma:

Any quantity that has specific belonging cannot come in quanta without identification headers. Nature does not produce identification headers. Angular momentum cannot exist without a rightful owner, and hence cannot be quantized. Vectors cannot come in quanta.

15). Angular Momentum of an Electron Cannot be Quantized:

Angular momentum of an electron in a multi-electron atom is time-varying, not conserved [6,9]. It is the total angular momentum of an atom that is conserved, not the angular momentum of an electron. Angular momentum of an electron is a vector. The direction of Angular Momentum is Observer Dependent. Angular momentum has no existence without change of time. Angular momentum of an electron is not unique. Angular momentum of an electron is not time-invariant. Angular momentum of an electron is Bi-Polar. Angular momentum of an electron is not position invariant, not space invariant. Above all, every angular momentum has an owner. Angular momentum has no existence without an owner. Angular momentum has no existence if the time is fixed. Momentum has no existence if the time is fixed. Nature cannot quantize an entity that belongs to another entity since nature's guanta do not come with identification headers attached. As a result, angular momentum of an electron cannot come in quanta. Bohr Atom is invalid. You cannot quantize orbits. Orbit of an electron cannot be quantized. It is not possible for an electron to move from one orbit to another without crossing the space between the orbits. An electron cannot disappear from one orbit and reappear on another orbit; it is Houdini-fication, voodoo physics, not science.

Lemma:

If angular momentum comes in quanta, there is no way to determine which angular momentum quantum belongs to which electron in an Atom. A quantum without belonging information cannot exist. The quanta in physics without identification headers are

meaningless.

Lemma:

If energy comes in quanta e=hf, the energy of a spectrum of even a narrowest band will be infinite since there are infinitely many frequencies between any two frequencies. If e=hf, the frequency spectrum cannot be continuous.

Property:

Any quantity that has a specific ownership cannot come in quanta. No quantity with ownership can be quantized since quantum ownership itself cannot be specified in the quantum. The data on the Internet can be in quanta since the belonging information of each data quantum is in the header. There is no such mechanism to carry the ownership identification information in any quantum in physics. The angular momentum and Spin have no existence without belonging, and hence they cannot come in quanta; they cannot be quantized.

Lemma:

Nothing in nature can be quantized. Nothing in nature can come in quanta.

Assume there are several people and each person puts a specific number of marbles into a basket. All the marbles are the same; there is no way to distinguish one from the other. The number of marbles put into the basket by one person is unknown to others. In this situation, there is no way to know which marbles belong to whom since all the marbles are the same. If one claims that all the marbles are his and none of the others put any marbles, the rest will be empty handed. There is no way a person can prove that some of the marbles in the basket are his/hers. Although somebody losing his/her marbles is not life threatening here, it is a different story for an orbiting system. The very existence of a planet in an orbiting system depends on the angular momentum.

In the case of an orbiting system, the existence of an orbiting system depends on having the right amount of marbles and there must be natural safeguards to prevent loss of marbles. So, if angular momentum is quantized, each quantum has to have a mean to carry its identification tag. If Angular momentum is guantized, each guantum must have the ownership information as well as how to put the guanta together to bring the total Angular Momentum to life in order to carry out its duty.

Quantization in physics does not facilitate carrying ownership information as a part of quantum. Quanta of any entity in nature cannot exist without ownership information. Angular momentum and Spin have no existence without an owner. As a result, Angular momentum and Spin cannot be quantized. Angular Momentum and Spin cannot come in guanta. In fact, nothing in nature can be quantized. Nothing in nature can come in quanta.

16). Spin-Up and Spin-Down Cannot be in a

There are no Magnetic Monopoles. There are no Spin Monopoles. Spin-Up has no existence without Spin-Down; they are non-separable. Non-separable entities cannot be in a superposition. Entities in superposition must be separable. Spin-Up and Spin-Down cannot be in superposition since they are non-separable. Whether a particle is Sip-Up or Spin-Down is determined by an observer. Spin-Up and Spin-Down have no existence without observers; they are observer dependent. Observer dependent entities cannot be states of a particle. As a result, there is no Spin-Up state of a particle or Spin-Down state of a particle. Spin-Up and Spin-Down have no existence without an observer. Spin is always Bi-Polar. Spin cannot be separated into Spin Monopoles. An Atom or charge particle cannot be in the superposition of Spin-Up and Spin-Down.

Lemma:

Superposition:

and Spin-Down cannot be Spin-Up in superposition since there are no Spin-Up and Spin-Down monopoles. A Bipolar Spin cannot have Unipolar Up and Down Spin Quanta.

17). Spin Matrices Cannot be Operators:

For the Pauli's 2D Spin Matrices to exist or for the Spin Matrices $\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z \in \mathbb{C}^{M \times M}$, M>2 to exist, the Matrix $S = [S_x, S_y, S_z]^T \in \mathbb{C}^{3M \times M}$ must be a valid operator. If S_x , S_v , S_z are square matrices, the Matrix **S** is not square, not Hermitian, and has no eigenvalue representation, and hence the Matrix S can no longer represent an Operator. Without the existence of $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ as an operator, the Spin matrices S_x , S_y , and \dot{S}_z have no existence.

Lemma:

Operators Must be Invertible. Although the Spin Matrices $\mathbf{S}_{x}, \mathbf{S}_{y}, \mathbf{S}_{z} \in \mathbb{C}^{M \times M}$ are invertible for M=2, the Operator $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ is not invertible and does not Represent an Operator. Conversely, if the Operator $\mathbf{S} = [\mathbf{S}_x, \mathbf{S}_y, \mathbf{S}_z]^T$ is invertible and represents a valid Operator, the S_x , S_y , and S_z cannot be square matrices, cannot have eigenvalue representation, cannot be Hermitian, and cannot represent Spin Operators.

18). Spin Cannot Take Place in 2-Dimension:

Spin takes place in 3D. Spin cannot take place in 2D and hence (2×2) Spin Matrix operators S_x , S_y , $S_z \in \mathbb{C}^{2 \times 2}$ cannot exist. Particles of mass cannot even exist in 2D space. How can there be 2D Spins when particles cannot exist in 2D?

19). Spin-Up and Spin-Down are Not Orthogonal:

Spin-Up and Spin-Down are perfectly correlated negatively. Both Spin-Up and Spin-Down exist in the same particle since Spin-Up has no existence without Spin-Down and vice versa. As a result, Spin-Up and Spin-Down cannot be represented by orthogonal vectors. If Spin-Up is represented by vector $\boldsymbol{\varphi}_{U}$ and Spin-Down is represented by vector $\boldsymbol{\varphi}_{D}$, then,

$\phi_{U}=-\phi_{D}$ (Equal and Opposite) $\phi_{U}=-\phi_{D}$ (Perfectly Correlated Negatively)

 $\phi_{\cup}\phi_{D}\neq 0.$ (NOT Orthogonal)

Spin-Up and Spin-Down cannot be represented by 2D orthogonal vectors since Spin is Bipolar and Spin-Up and Spin-Down are perfectly correlated negatively. Spin cannot be represented by 2D Matrices. A particle cannot even exist in 2D. Pauli's Spin Matrices have no existence.

The representation of Spin-Up and Spin-Down as orthonormal basis vectors is incorrect. To represent Spin-Up and Spin-down as Orthonormal vectors, Spin-Up and Spin-Down must be independent from one another, or mutually independent. Spin-Up and Spin-Down cannot have independent existence since there are no Magnetic Monopoles. To say Spin-Up and Spin-Down are orthogonal is to say there are Magnetic Monopoles, which is impossible. There are no magnetic monopoles and hence there cannot be Up and Down orthogonal representation.

Spin-Up and Spin-Down can be simulated/imitated using the Vertical and Horizontal Polarization of light. Polarization of light is not a Spin. Polarization of light is Unipolar. Spin is Bipolar. Spin and Polarization of light are not the same. Polarization of light is not observer dependent, it is observer independent. Polarization is not defined by the Right-Hand Rule. Spin is defined by the Right-Hand Rule. The definition of Polarization is observer independent. The definition of the Spin is observer dependent. Spin-Up and Spin-Down are observer dependent. Up and Down only exist relative to observers.

Lemma:

Spin is Bipolar. Polarization is Unipolar. Polarization is not the same as the Spin. The definition of Polarization is observer independent. The definition of the Spin is observer dependent.

20). Spin-Up and Spin-Down are Observer Dependent:

The orientation of a particle is determined by the environment a particle is in. It is the population of particles, and any other external magnetic field that a particle is in, that determines the orientation of a particle. The orientation of a particle is not an intrinsic property of a particle. The orientation of a particle is not a state of a particle. Whether a particle is Spin-Up or Spin-Down is determined by an Observer. Without an observer, there are no Ups or Downs, Left or Rights, Ins or Outs. There cannot exist an Up without a Down, and there cannot exist Up or Down without an observer. Observer dependents cannot be Quantized. Observer dependent do not come in Quanta.

21) State of a Particle is Not Probabilistic:

The state of a particle cannot be described by Quantum Mechanics. The state of a particle cannot be described by the eigenvalues of operators. Eigenvalue of an Operator is not unique. The state of a particle must be unique. The position and momentum of a particle must be unique at any instant. Irrespective of the size of a particle, the state of a particle must be unique. If you consider that the state of a microscopic particle is probabilistic, at what level does it become non-probabilistic? How big does it have to be to become non-probabilistic? What determines the critical mass below which its state is probabilistic and above that it is non -probabilistic?

Our ignorance of the state of a particle does not make the state of a particle probabilistic or random. A particle cannot be at all the possible states until we observe it. What happens after we observe it, does it go back to being at all the possible states again until it is observed again by some observer? Does the observer have to be a human observer? How did physics become such nonsense? It is we who pay attention to the nature of particles. Particles pay no attention to us. Particles are not going to change the behavior just because we look at them. Particles are not thieves who have to pay attention to who is watching. Particles do not know or care if humans exist or there are human observers or any other non-human observers. There is no particle intelligence. Intelligence is what emerges from a collection of particles in a living cell.

If there is a wave function of a particle, that wavefunction is not going to collapse just because some human that the particle does not even know exists had a peek. If a wavefunction of a particle collapses just because another entity had a peek at it, then, all the wave functions of the particles must always be at collapse state since every particle is always watched or sensed by other particles. For a particle, a human is just another pile of particles, nothing more. For the universe, humans are just a pile of particles, no difference. Universe does not care about humanity or life on a negligible planet.

The most bizarre human Crafter Prophecy (hCRAP), of course next to all the weird religious Crafted Prophecies (rCRAP), must be the bizarre and weird claim that a particle can be in multiple states at the same time; how did such nonsense become science? Even more bizarre is that there are people who think it is the case, and these people are from so-called prestigious universities, who consider archaic propaganda-journals dedicated to maintaining status quo or false ancient belief system as prestigious journals. How did they lower themselves into such a base level in our thinking? They even think that time is relative and you can generate mass by colliding particles. Time is not relative. Mass is not relative [17,18,4].

You cannot generate mass by colliding mass [5,14]. Try colliding stable and electrically neutral particles and see if you can generate mass. It is only when you collide charge particles you get the impression of generating mass because you are falsely representing the extraneous radiation due to the collision of charges as particles of mass. Electromagnetic radiation is not particles. Electromagnetic waves have no mass, no momentum, no energy, no temperature, no entropy. It is only that

electromagnetic waves can generate kinetic energy on charge particles. Electromagnetic waves have no effect on electrically neutral particles. There are no wave particles. There are no particle waves. Electromagnetic radiation has no effective mass. You cannot find fundamental particles of nature by colliding charge particles. Large Hadron Collider (LHC) is a billion dollar blunder, fortune teller's 8th ball. You can use it to prove anything you want. All you have to do is keep colliding until you get lucky, until you get a dataset that agrees with what you want to prove and call for a news conference just as they did for the so-called Higgs particles. You need two to tango. A single field cannot propagate. A single field cannot exist even as a static field without being anchored to its source. The single Higgs field cannot propagate. The Higgs field cannot even exist as a static field since there is no Higgs source that it can anchor to for its existence. Gravitational field is single and hence cannot be a wave.

If you find that the measured mass of a moving particle is different from the mass of a stationary particle, it is because the mechanism of the measuring device depends on the speed, not the mass of the particle. Measuring device gives the correct result when the measuring device is used under the engineering specifications of the device. No measuring device can give the correct result for all the varying environmental conditions the device is used. You cannot force the dependence of the mechanism of a measuring device onto what is being measured. It is the measuring device that is used to measure the mass of a moving particle that depends on the speed, not the mass of a particle itself.

Then again, when we see the ancient religious Crafted Prophecies (rCRAP) that some people are adhering to, it is not that much of a surprise why some people are thinking particles can be in many places at the same time. Not only that, students are paying good money to learn those Crafted Prophecies (CRAP), and all this is happening in the twenty-first century. How can professors, who teach that light is a particle, a particle is a wave, time is relative, mass is relative, and a particle can be in many places simultaneously, go home and look in the mirror? What does a professor who teaches that nonsense for an exorbitant tuition fee see in the mirror? Does a Physics Professor see a scientist in the mirror? Can vou become a scientist without common sense? Intelligence is driven by common sense.

22). Vibration of Wave Function: What Nonsense! There is No Wave Function Vibration

There is another bogus new mantra in town. It is the bogus claim that "everything is an outcome of a vibration of a wavefunction" [3]; a vibration of a vibration, a strangest vibration. Nobody has any idea what a wavefunction of a particle is, yet there comes a wave function vibration. Particles are not waves. The electromagnetic waves generated due to the stopping of a moving charge particle are not particle waves; it is the wavelength of these generated electromagnetic waves that is given by $\lambda = \eta_e/p_e$, where p_e is the momentum of electrons. For a mass m of charge q moving at speed u, the wavelength of electromagnetic waves due to the stopping of the mass is given by $\lambda = \eta/qu$; this is not a particle wave of mass m and momentum p [13,19].

A propagating wave cannot be anchored to a particle. A propagating wave cannot describe the state of a particle that generated the wave. Particles do not have wavefunctions. Particles do not emerge from the vibration of a wavefunction. Objects do not emerge from the vibration of a wavefunction. Fields do not emerge from the vibration of wavefunctions. Space, time, and the Universe itself cannot emerge from vibrations of wavefunctions. "The Vibration of a wave function" is a meaningless phrase. In fact, the wavefunction of a particle is a meaningless phrase. The position and momentum of a particle does not behave as a wave. The position and momentum of a mass must be unique. Particle waves are a result of a mathematical and conceptual blunder. There are no particle waves. There are no wave particles. Time is a definition. Time is not relative. Without living species to define time, there is no time. There is no spacetime. Transform cannot transform Lorentz Maxwell equations for propagation of light onto inertial frames.

What is waving in a wavefunction anyway? What is the vibration of a wavefunction? The phrase "vibration of wave function" is itself meaningless. Wavefunction. even as a definition, cannot even exist without space, time, and motion of particles. How can space emerge from a wave function that has no existence without space, time, and motion of a particle? The claim that the Universe itself can emerge from the vibration of a wavefunction [3] is meaningless; simply preposterous. What does the vibration of a wave function mean? What is vibrating in a wavefunction? How do you vibrate a wave function? Have you seen a particle of mass behaving as a wave? A mass cannot propagate. Propagating waves cannot have a mass. A wave has no existence without propagation. A propagating wave cannot be anchored to a particle. If a particle is a propagating wave, it cannot be at stand still since a wave has no standstill existence.

Probability distribution does not vibrate. Probability distribution does not propagate. Probability distribution is static. If it vibrates, it is not a probability distribution. A wave with zero crossings cannot represent a probability distribution even if you square it and normalize it. If it is a propagating wave, it is not a probability distribution. Propagating wave cannot be normalized. A probability distribution exists for the past, not for the present. Probability distribution cannot give the present state of a particle. Orbiting systems do not run on probability. This is another way to Harry-Potterize or voodoofy the physics; it certainly sells books. In that sense, there is nothing wrong with that since you can make a few bucks. Although the book [3] that I recently came across, "Something Deeply Hidden", is a Crafted Prophecy (CRAP) that has no realistic value, mathematical value, scientific value, or educational value, it is a well written fiction

book by a gifted writer; a talented teacher teaching nonsense; a talented writer writing nonsense. It is a good fictional novel, an enjoyable read. If I have had bit of his writing skills, I should have conveyed the message like a Smooth Operator instead of antagonizing the reader. If you had been around in 1980s, you are familiar with Smooth Operators. Then again, Smooth Operators are fake, just like Quantum Mechanics Operators.

Undoubtedly, the idea of wave function vibration is a prolific paper mill for the academia, whose only interest is counting publications while safeguarding the status quo of voodoo-physics to prevent flow of funds from drying up. They are very proud of the number of papers they have as if it is a great achievement; not! As long as they can manage to keep fallacy under cover, the flow of funds is safe at least for the time being. No one wants to hear that the Large Hadron Collider (LHC) is a billion-dollar blunder hidden in the swiss alp [9] when they are dreaming up building particle colliders in space; it will be a trillion-dollar blunder open in space. Gravity cannot be a wave. Gravity cannot have a propagation delay. No one wants to hear that gravity cannot be a wave. Propagation requires a conjugate pair. Gravity does not have a conjugate pair of fields. Gravity cannot be a wave. Gravitational waves are fantasy waves. LIGO is a fantasy wave detector. LIGO researchers are fooling themselves and few others; they are either blind to the facts or just blindly doing what they are asked to do for a paycheck.

Some of the voodoo-physicists even claim, "everything that could be discovered has been discovered, and all there is to be done is some fine-tuning, refinements." According to them, anybody who says otherwise would be nuts; you might have come across someone who says that if you have seen some physics videos. It is no surprise since this comes from the kingdom across the pond. Up there they are under the impression that if there is any valuable contribution that is worthy of her majesty's attention, it has to come from the kingdom itself since there is nobody in their former colonies who is capable of producing anything worthy of her majesty's attention. After all, how can anybody whose main job was to be at her majesty's service can possess the intelligence or knowhow to produce anything worthwhile? Point well taken, that is why royalties everywhere have become a big joke, a laughing stock, nothing more. Nobody can become royal hereditarily, by gene. Nobody can become majestic hereditarily, by gene. Choosing a head of state based hereditarily is an insult to human intelligence. It is hard to imagine why this nonsensical practice is still with us, although it has become a laughingstock today. There are no royal genes. They even need a government-paid servant to tie their shoes too in addition to hundreds of government-paid servants to attend to every whim while many people are sleeping on streets without a shelter or a meal. Running countries by kings, queens, military-dictators, Autocratic systems that control every move, archaic discriminatory religious

regimes that are repulsive even on the surface to any freedom loving person are an insult to humanity. We are debasing ourselves by embracing those systems.

The motto of the voodoo-physics cult is "anything that contradicts the status quo of voodoo-physics must be rejected", the same utterance practiced by silly third-class website, arxiv. They have fleets of conventional propaganda journals dedicated to this motto guarded by bullish reviewers and editors who are clueless about the subject at large. Their only interest is the protection of their bread and broccoli, not the discovery of nature or the advancement of science. They do not want to hear what they have been doing is pseudo mathematical nonsense. Otherwise, one has to be mathematically blind to not see the mockery of Einstein's theories, Special Relativity and General Relativity, and Quantum Mechanics. Even High School mathematics is enough to see the mockery of Einstein's theories [15,16].

23). State of a Cat is Unipolar, Not Bi-polar: Lemma:

Dead and alive are unipolar. Spin of a particle is bipolar. There is no comparison between the unipolar and bipolar.

Schrodinger's cat is either dead or alive at any instant of time, not both, not in a superposition. Alive and Dead are monopoles. A cat is Alive if and only if it is not Dead and vice versa. Unlike Alive and Dead, Spin-Up and Spin-Down are Bi-Poles. There is no Quantum Superposition since Spin-Up and Spin-Down are non-separable. Only the events that are separable can be in a superposition. A beam of light can be a superposition of Horizontally Polarized waves and Vertically Polarized waves because they are two different waves.

If you find a cat is alive, that does not mean the same cat is found dead in another parallel world. Every observation we make here does not result in all the other possible observations happening in parallel worlds. Every time when we make an observation, there will not be parallel worlds popping up with all the other possible observations we did not make. The states of wavefunctions that are not observed here in this world will not be popping up in parallel worlds. There is nothing physical in the wave function for its existence. There is no actual wave in the wave function. A wave that is anchored to a particle cannot propagate. Propagation requires a conjugate pair of waves. Wave function of a particle cannot propagate; it is just hypothetical. Wave function is single. A single function or a field cannot propagate. If a wavefunction has an attachment to a particle, it cannot propagate. For propagation, it must be free of any anchorage. A wave function of a particle that cannot be independent of the particle cannot propagate. Propagating wave cannot determine the position and momentum of a particle that generated it. A propagating wave has no anchorage to a particle.

If parallel worlds pop up every time an observation is being made, the energy is going to stretch thin sooner or later; after all, we only have limited energy to go around in all those hypothetical parallel worlds. Even talking, reading, or writing about many-worlds by Physicists signals where physics is heading. Physics is heading into a fairytale world, a magic kingdom, that some may find entertaining even though it has no scientific value. Then again, reading voodoo-physics is much better than reading broom-riding Harry-Potter books and wasting life by watching professional sports and reality shows. What is there to gain by watching professional sports and reality shows? Even though voodoo-physics fiction the book [3] entitled "Something deeply hidden" is utter nonsense, another Crafted Prophecy (CRAP) of Many-Worlds, it is quite entertaining because you can laugh at thinking how can a physics professor from well known Ivy League University cook up with such nonsense. It is interesting that these preposterous, nonsensical many-world and multiverse Crafted Prophecies (CRAP) come from institutions that used to produce meaningful work once upon a time; what went wrong? How did they become CRAP generators? The concepts of Many-World and Multi-Verse are simply preposterous voodoo science that even surpasses the nonsense in religious texts; it won't be such a surprise if these professors start the day by lighting some candles and praying toward a Relativity God on their hands and knees.

What is the purpose of reading religious texts? They do not even have any entertainment value, a waste of life. How many trees have we cut down for printing Einstein's Relativity Theories, Quantum Mechanics, and Religious texts. Religions are Crafted Prophecies (CRAP)? Unthinkable. Instead of living the life we got, if we spend every waking hour of life praying several times a day for a next life, why should we be given another life; to pray more for another life? If the universe is a creation by some creator, that creator has created mainly junk than anything of value; a totally incompetent designer. Why does such a creator need our prayers? We see professional sports teams go on a prayer before a game. Why should a hypothetical creator favor one professional team over another? Watching professional sports is not just a waste of life, but also hazardous to life in every imaginable way; it is especially bad for the pocket too. You cannot become sporty by watching sports. The purpose of sport is to do, not to watch. What is interesting is that the promises made by religions are always for the next life, never for this life. It is only the founders of religions or the self-proclaimed messengers of a creator entity, and their apostles that get to enjoy palaces and whatever they want in this life all at the expense of the followers. During the time there were two Popes, they had to build a new palace in France for the other Pope in addition to the one in Rome. How can a Poe live in an ordinary house? For the followers, they must wait for the next life that never comes to reap any benefits.

Look at the living quarters of the head of the religions; they cannot live without places; they need places covered in gold. It is hard to comprehend why

they are so attracted to gold. The only use of gold is for jewelry, something that makes one more beautiful without. Gold has no use other than in jewelry and to fill the space in bank vaults for no apparent reason except that it offers a guard a job. If the creator is so fond of gold and expects all the religious dorms to be decorated with gold, why did that creator entity not create more of it? Why does a creator require prayers of people, who are struggling to feed themselves, occupying a negligible real estate in a negligibly small planet in the infinitely vast universe? If earth and its species are a creation, it certainly does not look like any creator entity had paid any attention or any significant time in creating earth and its species. Why did a creator create so much useless junk real estate? If a creator entity has created the universe, that creator entity must have been so incompetent at the job. Otherwise, why should anyone create so much useless junk real estate, planets, and galaxies. Why does one create living species in such a way that one has to eat the other? Cannot see any other reason than down right cruelty. Not a praiseworthy job. If you are praying toward a black box, ask yourself, what is in the black box? As long as you do not get to see what is inside the black box, you may be intrigued. If you get to peek into it, you may ask yourself, why am I praving toward this? That is when you reach enlightenment! Nirvana. Why does anybody consider some space junk sacred? You do not have to offer a goat to a guy who created goats, it is common sense! A particle cannot be in multiple places simultaneously, it is common sense. Non-directional time cannot be relative, it is common sense. A quantum without an identification header is garbage, it is common sense.

24). Quantum Mechanics is Pseudoscience, a Result of Theoretical and Experimental Blunders:

Spin Mechanics in Quantum Mechanics is INVALID every sense, mathematically, logically, and in conceptually. Quantum Mechanics is INVALID in its very Foundation. If you hypothetically assume the position and momentum of a particle to behave as a wave, the Position Operator cannot be the position itself. On the other hand, if the Position Operator is chosen as the position itself, you cannot make the hypothetical assumption that the position and momentum of a particle behaves as a wave. If you assume the position and momentum of a particle to be a wave, the Position and Momentum Operators are predetermined by the plane wave equation itself; you have no freedom to choose the Position Operator as vou like.

There cannot be momentum if the position of a particle is fixed. If the position of a particle is fixed, the particle cannot have a momentum. If the momentum is fixed, the path will be either linear or circular, not a wave. The position and momentum of a particle cannot be a Fourier Transform pair, impossible [7,13].

A particle cannot behave as a wave, and hence the Schrodinger equation has no existence. The Position and Momentum cannot be a Fourier Transform pair, and hence Heisenberg's Uncertainty Principle has no existence. Maxwell equations for propagation of light cannot be transformed into an inertial frame, and hence light is not relative and Einstein's Special Relativity has no existence [15,16]. Lorentz Transform is utter nonsense, a pseudo transform [17]. One has to be both mathematically and conceptually blind to consider Lorentz Transform as science. Gravity and acceleration are not the same, the mass of an object cannot bend space even if the space is warpable, and hence Einstein's General Relativity has no existence. A Particle wave is an oxymoron. A wave particle is an oxymoron. Galileo Relativity is incorrect since the path of a moving object cannot be altered relative to observers [15].

There is no basis to the Classification of waves and particles using Spin. Particles cannot be characterized as Spin-1/2. Spin-1/2 is meaningless. The characterization of particles of mass as Fermions is meaningless. There are no particle waves. Waves cannot be characterized as Spin ± 1 . There is no Spin ± 1 . Spin cannot be quantized. Characterization of wave particles as Bosons is meaningless. There are no wave particles.

Light has no spin. Polarization of light is not a spin. Polarization of light is not Bipolar. Spin of a particle is bipolar. There is no comparison between the Horizontal and Vertical polarization of light and the Up and Down of a Spin: they are not equivalent. Polarization of light is Unipolar. Spin of a particle is Bipolar. There are no Spin Unipoles. Polarization of light is unipolar and not limited to Horizontal and Vertical Polarization. You can have infinitely many polarizations. A single light beam can have light bursts of infinitely many polarizations. Spin-Up and Spin-Down reside in the same particle; they have no independent existence. Spin-Up has no existence without Spin-Down and vice versa. On the other hand, the existence of Horizontal Polarization does not require the existence of Vertical Polarization and vice versa.

There are no wave particles. Waves have no Spin. Direction of the electromagnetic field is not a Spin. Spin magnetic field is static, not a wave. Not every magnetic field is a spin. Every Spin does not generate a magnetic field. Only the Orbiting Systems or a particle ejected from an orbiting system have a Spin. The Orbiting System of an Atom has a Spin. An ejected electron from an Atom carries its Spin with it. A particle that had not been in an orbiting system cannot have spin.

Matter particles are not Spin ±1/2 particles. Spin 1/2 is a result of wavelength error. Spin half is nonsense. Particles cannot meaningless he characterized by their Spin since the Spin is observer dependent. One observer's Spin-Up can be another observer's Spin-Down. Observer perceptions cannot be a state of a particle. Observer dependent quantities cannot come in Quanta. There is no Spin-Up without Spin-Down in the same particle and vice versa. Spin-Up and Spin-Down cannot come in guanta since there are no Spin Monopoles. There are no fractional Spins or integer Spins. Spin of a particle is not quantized. Spin of an Atom is a constant for a given atomic number and it can be positive or negative. There are no Bosons and Fermions since Spin cannot be quantized.

There are waves, the mass-less. There are no wave-particles. Wave bursts are not particles. The Massless have no momentum. There is no massless momentum. There is no massless energy. Momentum is a result of the motion of a mass. Without a mass in motion, there is no momentum. Momentum of an object does not determine a mass. The mass of an object determines the momentum. Acceleration does not determine the mass of an object. The mass of an object determines the acceleration if the object is in motion. A stationary mass on a gravitational object has no acceleration.

There is no massless momentum. There is no acceleration without the motion of a mass. A mass at rest on a gravitational object has no acceleration. Gravity is not an acceleration. An apple on a tree has gravity but it has no acceleration. A falling apple has an acceleration under gravity. There are no mass-less particles. There is no massless momentum. There is no massless acceleration. A particle is an entity with mass. There are masses (particles). There are no mass-waves, momentum-waves, or particle-waves. A particle by definition has a mass. Mass is not a wave. Wave is not a particle. Masses move. Light propagates. Light bursts move. Motion is relative. Propagation is not relative.

25) The Energy, which is the Mechanical Energy is Continuous, Not Quantized:

The energy refers to the kinetic energy of the particles of mass. Potential energy is not energy unless it is converted into kinetic energy of particles of mass. Light has no energy. What light has is electromagnetic potential energy. Electromagnetic potential energy is not energy unless it is converted to the kinetic energy of charge particles. Light cannot increase the energy of electrically neutral particles. The interaction of light and particles of mass is not a collision of momenta. Light in a vacuum has no energy, no temperature, no momentum, no entropy. Einstein' photon derivation is invalid in its foundation since light in a vacuum has no entropy, no heat, no temperature. A so-called photon or light guanta cannot have energy e=hf since frequency has no independent existence. Frequency has no existence without amplitude. The claim that light consists of photons or light quanta of energy e=hf is meaningless. There are no light particles, light quanta, or photons. Light is always a wave. Light comes in wave bursts. These wave bursts are not particles. There are no massless particles.

Light or electromagnetic waves come in bursts. Wave Bursts are not Particles. There are no photons or light quanta. Einstein's photon derivation is invalid. Even that invalid derivation is limited to high frequencies only; it does not apply to low frequencies. There is no reason for light to behave as particles at high frequencies and waves at low frequencies.

Electromagnetic waves have no mass, and no momentum. The representation of electromagnetic energy as a particle of momentum p traveling at the speed of light c is invalid since electromagnetic waves are not associated with a mass and the massless has no momentum, e≠pc. Light has no momentum. Momentum is associated with mass and mechanical energy, not with electromagnetic potential energy. We do not get warm in the sun by being hit by light particles or by the collision of light particles. The transfer of electromagnetic potential energy onto an object of matter is not a collision of momenta. The transfer of electromagnetic energy onto an object of mass is a result of the oscillation of charge particles in an object in the presence of electromagnetic waves, momentum generation. Light is a momentum generator, not a momentum carrier [19].

There is no momentum without a mass. Moving particles cannot generate electromagnetic energy without a charge. There is no energy, momentum, temperature, and entropy without particles of mass. There is no charge without a mass. There is no chomentum or motion of charge without momentum. The wavelength of electromagnetic waves generated by the stopping of a beam of electrons is indeed is inversely proportional to the momentum of electrons; this is not a particle wavelength as de Broglie falsely claimed.

Electromagnetic potential energy is not associated with a mass. It is the mechanical energy that is associated with a mass. Electromagnetic potential energy is generated by the motion of a charge. Frequency of the electromagnetic waves generated when a moving charge particle is stopped is proportional to the energy of the charge or electrons, not to the mechanical energy of the mass of the particle. Electromagnetic potential energy and mechanical energy are not the same. Light is not relative [15,16,4].

Mechanical energy has a belonging or an owner. Nothing with an ownership or belonging can come in quanta. Mechanical energy belongs to a particle or a mass, and hence cannot come in quanta. Electromagnetic potential energy is free and has no belonging. Electromagnetic waves can propagate since they have no anchorage to a mass and consist of a conjugate pair of fields.

A single field cannot propagate. A single field cannot be a wave. Wave has no existence without propagating. Propagation requires a conjugate pair. Gravitational field is single and has an anchorage and hence cannot be a wave. The Higgs wave is single and has no source and hence the Higgs wave cannot exist. A single wave has no independent existence without an anchorage to its source. The Higgs field cannot exist neither as a wave nor even as a static field.

26). Probability Distributions Describes the Past and are Static; Propagating Waves Cannot be Probability Distributions: Probability is a human creation for the data at hand, for the past. Probability distribution is static. Probability distribution is not a wave. The area under probability distribution is unity for the entire range. Waves have zero crossings. The square amplitude of a wave cannot represent a probability distribution even if it is normalized for the entire range since it has zeros. The zeros in a wavefunction invalidate the square amplitude of it as a probability distribution.

A wave has no existence without propagation. The area under a propagating wave cannot be normalized to be unity for the entire range for a propagating wave for H=eI, where H is the Hamiltonian and I is an identity operator. A wave normalized for a range of wavelength does not represent a probability distribution. Wave cannot be a probability distribution. Probability distribution cannot be a wave. The position and momentum of a particle must be certain. Our ignorance of the position and momentum of a particle cannot make the position and momentum of a particle probabilistic or uncertain. The position and momentum of an electron in an Atom cannot be uncertain since uncertainty breeds radiation. A wave is subjected to attenuation and wavelength shift. If a wave describes a probability distribution, the probability distribution will not be time invariant since a wave is subjected to attenuation and wavelength shift. Nature does not normalize.

Lemma:

Eigenvalues of Operators of Observables cannot be used to model the state of a particle since the eigenvalues are not unique.

27). Nature Does Not Run on Quantum Mechanics:

Nature does not Normalize. There is no existence Quantum Mechanics without Normalization. of Particles do not behave as waves. Waves are not particles. Oscillation of a particle is not a wave. A propagating wave cannot be anchored to a particle of mass. Momentum does not generate waves. Position and Momentum of a particle is time dependent. Position and Momentum are mutually dependent. Particles cannot be in multiple places at the same time. The direction of Spin and angular momentum are observer dependent. Up and Down has no existence without observers. The entities that have no existence without observers cannot come in guanta. Observer dependent quantities cannot be quantized. As a result. Quantum Mechanics is not natural: not real. Theoretically invalid QM that exists only on paper had been incorrectly validated by bogus interpretation of Stern-Gerlach and Double-Slit experiments. Nature cannot run on QM. You cannot use the polarization of light to simulate Spins in Quantum Mechanics. So-called Q-bits based on polarization of light are not Quantum bits or Q-Bits. Polarization of light can be in a superposition since the polarization of light is Unipolar. Spin-Up and Spin-Down cannot be in superposition since Spin is Bipolar.

28). Operators have No Place in State of a Particle:
State of a particle is unique. Representation of the state of a particle in a mathematical model must be unique. Although eigenvectors or eigenfunctions of non-trivial Operators are unique, the eigenvalues of an operator are not unique. State of a particle cannot be modeled as the eigenvalues of operators since eigenvalues are not unique. Unique states of a particle cannot be modeled using non-unique eigenvalues of Operators. The eigenspace of the Position Operator in Quantum Mechanics is not unique. Operator based Quantum Mechanics have no place in states of particles, which are unique.

XXVI. ELECTRON MICROSCOPE: A MISNOMER Property:

If a beam of electrically neutral particles is used in place of the beam of electrons in an Electron Microscope, there will be no image. This is an indication that the particle waves are not the basis for Electron Microscope. The acceleration of electrically neutral particles must be done by some other means since they cannot be accelerated using an electric field as is done in Electron Microscope. An Electron Microscope has nothing to do with particle waves or de Broglie waves or Quantum Mechanics.

Electron Microscopes have been built and in use for high resolution imaging successfully. However, the claim that particle waves generate an image in Electron Microscope is incorrect, simply nonsense. It is not the particles that generate an image in Particle Microscopes. It is not particle waves that generate an image in an Electron Microscope. It is not electrons passing through a target specimen and colliding them on the phosphor screen that generate an image of the specimen in the Electron Microscope. Hypothetical particle waves do not exist. A particle-wave is an oxymoron. What is achieved by an electron microscope can equally well be achieved by electromagnetic waves. The generation of an image in an electron microscope is achieved by the electromagnetic waves generated by the stopping of the electrons by the specimen that is imaged.

Particles are particles, not waves. Electrons are particles, not waves. The working of Electron Microscope has nothing to do with hypothetical particle waves, or in this case nothing to do with or any association with hypothetical electron waves or de Broglie wave nonsense. There are no electron waves. There are no particle waves. The image in an Electron Microscope is not generated by particles or particle waves or Quantum Mechanics; the claims in physics test books are false and invalid. Momentum of a mass does not generate waves. Momentum of a mass does not behave as a wave. If the momentum of a particle is a constant, the position cannot behave as a wave. If the position is a constant, a particle cannot have a momentum. There is no change of momentum without passing of time. There is no change of position without passing of time. The position and momentum of a particle must be unique irrespective of its size. Our ignorance of the position and momentum of a

particle cannot make the position and momentum probabilistic.

If a beam of electrically neutral particles is used in place of the beam of electrons in the Electron Microscope, there will be no image. What is responsible for generating an image in the Electron Microscope is the moving charges. Moving charges do not have to be electrons. Any beam of charged particles will work fine. However, the resolution of the image can be increased by choosing particles that have the highest charge to mass ratio. The reason for choosing a beam of electrons in the Microscope is the highest charge to mass ratio of electrons e/m, where, e is the charge of an electron and m is the mass of an electron. The charge to mass ratio, e/m, is smaller for any other particle. A particle in a particle microscope is simply a chauffeur for the charges.

When a beam of electrons collides with a specimen or a target, it generates electromagnetic radiation. The frequency of the electromagnetic radiation is determined by the speed of the electrons and the electron charge. The image in an Electron Microscope is generated by these electromagnetic radiation waves resulting from the stopping of electron charges by the target or the specimen. The generation of an image in an electron microscope does not involve some bizarre particle waves.

What is going through the target is not particle waves or electron waves. Almost all the electrons are stopped by the target, although some might penetrate through at lesser speed. The change of the speed of the charge or the change of chomentum due to the collision of electrons with the specimen generates electromagnetic waves. What penetrates through the specimen onto the screen is electromagnetic radiation waves generating an image of the specimen or the target on the screen. Faster the speed of the electrons, higher the frequency or smaller the wavelength of the electromagnetic radiation by the collision, and hence higher the resolution of the Electron Microscope. We can increase the resolution by increasing the charge as well as the speed of charge. If a beam of electrons is used, the charge is fixed and hence the resolution can be increased in an Electron Microscope by increasing the speed of electrons. This can be done simply by increasing the electric field that is used to accelerate the charge.

Definition: Chomentum

For a particle of electric charge q and speed u, the chomentum of a particle is defined as the product qu.

The frequency f of the electromagnetic wave generated by the collision of an electron with the specimen or the target in an Electron Microscope is proportional to the chomentum eu, where e is the charge of an electron and the u is the speed of the electron [2]. So, in the case of an electron microscope, we can also claim that the wavelength of the generated electromagnetic waves is inversely proportional to the momentum of an electron. However, in general, the wavelength λ of the

electromagnetic radiation is inversely proportional to change of chomentum eu. So, we can increase the resolution of Electron Microscopes by increasing the speed of the electron beam since the wavelength of the electromagnetic radiation decreases with the increase of the speed of the charge. Everything in the Electron Microscope deals with the charge of a particle and the speed of the particle; it has nothing to do with the mass or the momentum of a particle.

If a beam of protons is used in the Microscope, the resolution of the image will not be as good as using a beam of electrons for a given momentum since the charge to mass ratio of protons is less than the charge to mass ratio of electrons. Higher the mass of the particles, the slower the speed and hence lower the product of charge and the speed, or the chomentum. It is the chomentum that determines the frequency of the radiation generated by the collision, not the momentum of a particle. Smaller the mass, higher the speed for given momentum and hence higher the frequency of the radiation and higher the resolution of image.

Lemma:

The image resolution of Particle Microscopes decreases with the increase of particle mass due to the decrease in speed, increases with the increase of charge and speed, and no image is generated if particles are electrically neutral and stable, which are direct contradictions to de Broglie wavelength and QM. What generates an image in Electron Microscopes is the electromagnetic waves generated by the change of the motion of charges or the change of chomentum, not the motion of mass, momentum, or particle waves.

The Negative Aspects of Electron Microscopes in Biological Specimen Imaging:

Property:

The specimen under view in an Electron Microscope is physically bombarded by fast-moving electrons in the process of generating an image. Observed image is the image of the altered specimen due to the bombardment of it by the fast-moving electrons.

In an Electron Microscope, the image is generated by electromagnetic waves, not by hypothetical particle waves. The electromagnetic waves are generated in an electron microscope by colliding electrons with the specimen or the target. The frequency of the generated electromagnetic wave is controlled by changing the speed of the electrons, which could be done simply by applying an electric field. The downside of using an electron Microscope is that nearly all the electrons colliding at high speed are absorbed by the specimen or the target, although some may penetrate through at low speed if the thickness of the specimen is not large. If the specimen or the target is biological, the high speed collision and absorption of electrons can damage biological specimens. Therefore, what is given by an Electron

Microscope is an image of the altered specimen due to the beating by the high-speed particles that has been undergone. There is no way of knowing for sure that any abnormalities observed in the image were present in the original specimen or they are a result of the damage that resulted from the attack by high speed particles.

These side effects of specimen damage might not have been anticipated by the designers of the Electron Microscope since it was incorrectly considered that the image generation process of Electron Microscopes was due to the particle waves of de Broglie wavelength. If it had been known that it is, in fact, the electromagnetic radiation that generates an image, Electron Microscopes might not have used for imaging biological specimens, because the same achieved by using thing can be separate electromagnetic source that has no high speed particle collisions with the specimen. An image of the same resolution can be obtained without bombarding a specimen by high speed electrons. The use of Electron Microscopes can lead to false diagnosis. If a cell damage is observed in the image, that cell damage could also be an unexpected effect of the image generation process itself. False positives should be very common in Electron Microscopes. Electron Microscopes can damage the living tissues permanently leading to unexpected outcomes: it is a high price to pay for something that can be done by other hazardless means. You can obtain an image of living tissues without bombarding them with high energy charge particles or electrons. The use of Electron Micropes for cancer diagnosis may cause cancer.

Lemma:

What generates an image of a target in an electron microscope is the electromagnetic radiation generated by the collision of electrons with the target, not particle waves. There are no particle waves. There are no de Broglie waves. The momentum of a particle does not generate a wave. There will be no image in a Particle Microscope if a beam of electrically neutral and stable particles is used.

Lemma:

Faster the electrons, shorter the wavelength of the radiated electromagnetic waves and hence higher the resolution of the electron microscope. However, it is more damaging for the specimen, especially when a biological living specimen is imaged.

Lemma:

False positives must be a common phenomenon in medical diagnosis based on images from Electron Microscopes.

Lemma: wavelength

The wavelength of the electromagnetic radiation that generates an image in the Electron Microscope is inversely proportional to the chomentum, eu of the electron, where e is the charge of an electron and u is the speed of an electron. Frequency of the radiation is directly proportional to the chomentum eu.

Lemma:

Smaller the mass of charge particles used in the Microscope, faster is the speed for a given momentum and higher the chomentum and hence higher the frequency of radiation by the collision and sharper the image. Higher the mass of charge particles, lower the chomentum and hence lower the frequency of radiation and lower the resolution of the image. The optimal resolution is achieved when the charge to mass ratio e/m is maximized. This is in direct contradiction to the hypothetical de Broglie wavelength conjecture, where wavelength decreases with the increase of the mass, which is incorrect in every sense.

Lemma:

The image of a specimen in an Electron Microscope can be misleading if the target is a biological specimen due to the high speed collision and the absorption of electrons by the specimen tissues. In the Electron Microscope, the image is for a specimen that is damaged in the process of producing the image.

You cannot bombard a biological specimen with high speed electrons and expect it to be not damaged; that is exactly what is done in the process of generating an image in the Electron Microscope. In medical diagnosis, images from Electron Microscopes may provide a higher rate of false positives leading to surgeries that may not be warranted.

Electronics Devices are diagnostic aids. They can provide suspected abnormalities. MRI results or any other results of electronic devices should never be used to carry out a surgery without performing biopsy prior to the surgery. Doing so will lead to greater harm and even the loss of life. I lost my brother who lives in a different country to a fraudulent surgery carried out for the Surgeon's financial greed. That loss should have been avoided if the biopsy had been done prior to the surgery. When the radiologist misdiagnosed an abnormality of his MRI as cancer, the surgeon went straight to remove the abnormality in the brain without doing a biopsy. Since the operation involved a large sum of money, doing a biopsy is perceived as a possibility of losing a financial opportunity and they skipped the biopsy and went straight to the surgery. When a sample was sent for biopsy after the surgery, it revealed that the patient did not have cancer; it came out negative. If a biopsy had followed the MRI suspicions of cancer, the loss of life could have been avoided. A brain surgeon in a private practice has to perform brain surgeries in order to keep his or her job; that is the bottomline. No electronic device can do a conclusive diagnosis.

Lemma:

Biomedical Electronic Devices are AIDS for medical diagnosis. They do not provide the diagnosis.

MRI suspicion of cancer is not cancer unless it is confirmed by a biopsy. Electronic aids should never be used as the primary or the only source of diagnosis in health care.

MRI results should never be used without a biopsy in medical surgeries or in medical treatments. If the surgeon wants to skip the biopsy and go straight to removing the suspected tumor as indicated by the Radiologist based on the MRI results, it is because the surgeon sees it as an opportunity for making a large sum of money. Insist on doing a biopsy. If the surgeon is unwilling, opt for a different surgeon that carries out proper procedures and a biopsy before the surgery. You cannot reverse back once a piece of brain is removed. No medical device can give you a cancer diagnosis with certainty, only the biopsy can. It does not matter what MRI or the result of any other device indicates, any surgery has to wait for a biopsy.

What contains in an MRI report is a personal opinion of a Radiologist based on the MRI picture. A Radiologist's opinion is just that, an opinion purely based on the past statistics. Statistics is not a science. Statistical decisions are not causal. Diagnosis devices are just there as secondary medical aids, not primary aids; they only provide suspicions, not certainty. Biopsy must follow the positive result of any diagnosis device. Failure to do so can cause irreversible harm.

XXVII: WAVELENGTH λ OF RADIATION DUE TO SUDDEN STOP OF A CHARGE PARTICLE

Lemma: Frequency of Radiation Due to the Stopping of a Charge Particle,

When a particle of any mass m and charge q moving at speed u is stopped, the wavelength of the generated electromagnetic wave is given by,

λ=η(1/qu)

where, η is the radiation constant.

The wavelength is independent of the mass. The wavelength depends on the charge and the speed of the charge. The speed of the charge is the same as the speed of the mass that carries the charge.

Momentum of an electrically neutral particle does not generate waves. If a beam of electrically neutral particles is used in the Double-Slit experiment, there will not be any interference pattern on the screen. If a beam of electrically neutral and stable beam of particles is used in a Particle Microscope, there will not be an image. Motion of an electrically neutral particle does not generate waves or behave as a wave. There are no particle waves.

However, the motion of a charge particle will generate electromagnetic radiation waves if that charge particle is stopped, accelerated or decelerated. It is not the momentum that generates waves. It is the change of chomentum, qu, the product of the charge q and the speed u, that generates radiation waves when a moving charge is stopped.

In the case of the Double-Slit experiment, a beam of charged particles is stopped by the double-slit barrier, which results in electromagnetic radiation waves. Similarly, in the case of Electron Microscope, a beam of charged particles, in this case electrons, is stopped by the specimen use in the imaging resulting electromagnetic radiation waves that generate an image of the specimen on the screen; some electrons may pass through the specimen at lower speed if the specimen is thin. However, no electrons are passed through the double-slit barrier in the Double-Slit experiment onto the side of the screen. If the operation of any device relies on the stopping or collision of charged particles, the actual operation of that device is based on electromagnetic waves, the electromagnetic waves that result from the collision or the stopping of the charge particles by the Double-Slit barrier in the case of Double-Slit experiment and the specimen that is being imaged in the case of an Electron Microscope; the process is purely deterministic. There is no probability involved in the functioning of an electric device.

When a moving charge particle of mass m is stopped, it generates electromagnetic radiation. The frequency of the radiation is proportional to the change of chomentum $\Delta(qu)$. Frequency of the radiation has no direct dependence on the mass of the particle m. A mass m is required to carry a charge. Here, the mass is just a chauffeur for charges. The speed of the charge is determined by the mass m. As a result, mass m only has an indirect influence on the frequency of radiation through the speed since speed of the charge g is the same as the speed of the mass m. Speed of a particle depends on the mass m for a given force. If the charges are stopped, the change of chomentum is the same as the chomentum, $\Delta(qu)=qu$. For the Double-Slit experiment and Electron Microscopes $\Delta(qu)=qu$.

For a given force, if the mass is higher, the speed will be lower, and as a result, the chomentum will be lower. When the chomentum is lower, the radiation frequency will be lower, or the wavelength of the radiation will be higher. Similarly, when the mass of the particles is lower, the speed is higher, and hence the chomentum is higher and the frequency of the radiation wave is higher, or the wavelength of the radiation wave is shorter.

If a charge particle of charge q and mass m moving at speed u is stopped suddenly, the wavelength of the radiation λ can be written as,

λ=η(1/qu)

(23.1)

where η is the radiation constant. The radiation constant η can be determined experimentally using the Double-Slit experiment for a beam of charged particles or electrons by plotting the wavelength λ against 1/u.

The wavelength λ can be determined using the interference pattern of the Double-Slit experiment for given q and u. We can easily determine η since η is the gradient of the curve λ versus 1/qu. If the plot is linear, it also validates the relationship $\lambda = \eta(1/qu)$.

If a moving particle is neutral, it does not matter what speed the particle is moving, when the particle is stopped, it does not generate radiation. There is no electromagnetic wave generation when a moving neutral particle is stopped. There are no radiation waves when a neutral particle is moving either. It is only a moving charge that generates electromagnetic radiation waves when the charge is stopped, accelerating or decelerating. No moving neutral mass generates waves when it is stopped, accelerating or decelerating. Momentum of a particle does not generate waves. There are no particle waves or de Broglie waves.

Lemma:

Smaller the mass of a charge particle, smaller the wavelength of the electromagnetic radiation waves it generates when the particle is stopped. Smaller the mass of the particles in a beam, higher the resolution of a Particle Microscope. Higher the charge to mass ratio (q/m) of a beam of particles, higher the resolution. The highest charge to mass ratio (q/m) is achieved when a beam of electrons is used; that is why we have Electron Microscopes, not Proton Microscopes.

There is neither an existence of an electric charge nor a motion of an electric charge without mass. In the case of Particle Microscopes, mass is the carrier of charges. On the other hand, the mass of a particle slows down the speed of a charge particle. In essence, the mass of a charged particle is a necessary evil for Particle Microscopes since a charge has no existence without a mass. Mass is required to build a ship, yet the mass of the ship is a hindrance to the motion of maximum cargo in the shortest time.

The mass of a particle is just the carrier of the charge in generating radiation waves by stopping the moving charges. When a charged mass is in motion, the charge is in motion. When a charged mass is stopped, the charge is stopped generating radiation. Smaller the mass, higher the speed of charge and hence higher the change of chomentum qu, smaller the wavelength λ of the radiation waves at the stopping of the charge particle, and as a result, higher the resolution of the Particle Microscope. So, the ratio e/m has to be maximum for a Particle Microscope of higher resolution. The ratio e/m is maximum for electrons and hence we have electron Microscopes.

In fact, there are no Particle Microscopes, unless the particles are electrically charged. Electron Microscopes generate an image of a specimen because electrons have electric charge. There are no Particle Microscopes unless the particles are electrically charged. What we have is Charge-Particle Microscopes, not Particle Microscopes. Electron Microscope is a Charge-Particle Microscope. Electron Microscope provides the highest resolution that can be achieved by any Charge-Particle Microscope.

A. De Broglie Wavelength is Fictitious

De Broglie wavelength λ =h/p has no existence; it is fictitious and defies reality in every possible way, where p is the momentum of a particle. A particle of constant momentum takes a linear or circular path; it is not a wave. There is no wave involved for a particle with momentum p. If de Broglie conjecture is true, we could increase resolution of a Particle Microscope by increasing the mass of the particles used in a beam of particles while keeping the speed constant. This is not possible, counterintuitive even. That is why we have Particle Microscopes that use charge particles with smallest mass, electrons, Electron Microscopes. De Broglie conjecture is meaningless. There are no particle waves. It is only that the charge particles generate electromagnetic waves if they are stopped, accelerated, or decelerated. What generates an interference pattern in the Double-Slit Experiment for a beam of electrons is the electromagnetic waves generated from the stopping of the electrons by the Double-Slit Barrier, not some mysterious particle waves

De Broglie conjecture defies reality by the introduction of hypothetical particle waves. De Broglie conjecture also defies reality by making the wavelength inversely proportional to mass of a particle, or the frequency of the wave directly proportional to mass of the particle, which is indeed false. In a guitar, which string produces higher frequency waves, lighter mass string or higher mass string? Which person can swing swiftly, a heavy person or lighter person?

Lighter the electrically charged mass is, higher is the frequency or smaller is the wavelength of the generated electromagnetic waves. The higher the electrically charged mass, the lower the frequency or generated the wavelength of the larger electromagnetic waves. This is the reality. De Broglie conjecture that defies reality is false, nonsense. There are no particle waves. Momentum does not generate waves. It does not matter what momentum particles have, neutral particles do not generate waves. De Broglie wave is voodoo physics, not science.

If momentum generates waves, then a neutral particle should also generate waves. Neutral particles do not generate waves if the particles are stable. However, neutrons generate waves since neutrons are unstable. Unstable neutrons break down under a collision generating electromagnetic wave bursts. It is these generated waves that generate an interference pattern when a beam of neutrons is used in the Double-Slit Experiment [2]. It is only the moving charges that generate waves due to electromagnetic radiation when the charges are stopped as it happens Double-Slit experiment and Electron in the Microscopes.

Lemma:

If a moving stable particle is neutral, charge q=0, no waves are generated when the particle is stopped, accelerated, decelerated, or moving at constant speed.

Lemma:

A beam of neutrons generates electromagnetic waves on a collision since neutrons are unstable. Unstable neutrons break down on an impact releasing electromagnetic waves. Particles that are electrically neutral and stable cannot generate waves.

Property:

Particles or masses are chauffeurs for charges. Charges have neither existence nor movement without masses or particles.

Lemma:

The frequency of electromagnetic waves due to the stopping of a moving charge particle is independent of the mass m of charge particles. Frequency is proportional to the charge and the speed of the charge.

Lemma:

A charge has no existence without the mass of an electron. Hence, the mass of an electron is ingrained in the Radiation Constant.

Einstein's photon derivation applies only for high frequencies or short wavelengths since the Wein's distribution Einstein used in the derivation of photons applies only for high frequencies. So, according to Einstein, light behaves as particles at high frequencies. De Borglie said, if light behaves as particles, particles must also behave as waves of λ =h/p. Since light behaves as particles only at short wavelengths, De Broglie conjecture must apply only for the short wavelengths. If a particle behaves as a wave of wavelength λ =h/p and it only applies for short wavelengths, then, λ =h/p applies for large momenta p, where p=mv.

So, according to the de Broglie wavelength λ =h/p, it is not the microscopic particles that behave as waves, it is macroscopic particles that behave as waves. Since light behaves as particles only for shorter wavelengths, de Broglie conjecture applies only for larger particles, not for microscopic particles for a given speed. The claim that microscopic particles behave as waves is contradictory to de Broglie's particle wavelength λ =h/p. What determines the cutoff momentum below which a particle does not behave as a wave? Nobody knows.

Light cannot behave as particles at any wavelength. Light is never a particle. A burst of light that is released from a source is not a particle. Planck's e=hf does not apply for light. Frequency has no existence without amplitude. The energy generated by light by oscillating a charge particle depends on both amplitude and frequency, not just frequency; there is no energy if the amplitude is zero. Light does not come in energy quanta or photons of e=hf at any frequency. Irrespective of the wavelength, light is always a wave, never a particle [8,19].

Particles cannot behave as waves of any wavelength. The position and momentum of a particle of mass must be unique. If a particle has a constant momentum, the claim that the momentum behaves as a wave is contradictory. A particle with constant momentum cannot be assumed to vary as a wave. The momentum that varies as a wave cannot be a constant. The claim that a particle behaves as a wave and a wave behaves as a particle is invalid meaningless. A particle of mass cannot behave as waves of several wavelengths simultaneously and hence the position and momentum of a particle cannot be a Fourier Transform pair.

B. Experimental Determination of Radiation Factor η using Double-Slit Experiment

Moving neutral stable particles cannot generate waves. There are no particle waves or a de Broglie wavelength. Momentum is not a wave generator. A moving charge is a wave generator if it is stopped. The interference pattern generated by the Double-Slit experiment is due to the electromagnetic radiation that resulted from the stopping of the moving charges by the Double-slit barrier. Electromagnetic radiation is generated when a moving charge particle of charge q is stopped and the wavelength λ is inversely proportional to the speed of the charge particle,

λ=η(1/eu)

where, e is the electrical charge of an electron, which is a constant. As a result, we have,

λ=σ(1/u)

where, $\sigma = \eta/e$.

Estimating σ Experimentally:

If we run the Double slit experiment for a beam of electrons for different speeds, u_i , i=1,2, 3, ..., we get corresponding wavelengths λ_i , i= 1,2,3, ... By plotting λ_i against 1/ u_i , i=1,2, 3, ..., we will get a linear curve. The gradient of the curve is σ . The Radiation Factor η is given by η = $e\sigma$, where e is the charge of an electron. The validity of λ = η (1/eu) can also be determined since the λ against 1/u must be linear for it to be valid.

de Broglie wavelength cannot hold true for a particle of any mass m since the frequency of waves cannot increase with the mass. In the de Broglie wavelength λ =h/p, frequency is directly proportional to the mass. If frequency increases with the mass, we should be plucking heavy strings in a guitar for high notes. The wavelength of the wave producing the interference pattern in the Double-Slit experiment decreases with the increase of mass, which is a contradiction to the de Broglie wavelength. De Broglie wavelength is a deception, a fake; it does not exist. There are no particle waves. Particle waves or de Broglie wavelength is voodoo Physics. What is there is the electromagnetic waves produced by moving charge particles when they are stopped, accelerated or decelerated. These waves are not anchored to the particle that produced them. These generated electromagnetic waves resulting from the stopping of a moving charge says nothing about the position and momentum or the state of the charge particle that generated them. De Broglie wavelength turned Physics into voodoo Physics.

C. Demonstrating the Mass Independence of Wavelength λ Experimentally

We can use the Double-Slit experiment to demonstrate that the radiation wavelength is independent of the mass of the particles. For a beam of electrons at speed u, obtain the wavelength λ_e using the Double-Slit experiment. Also, for a beam of protons at the same speed u, obtain the wavelength λ_p using the same Double-Slit experiment. These two wavelengths must be equal,

 $\lambda_{e} = \lambda_{p}$.

If you have access to a Double-Slit experiment, you can verify this easily. The wavelength obtained from the interference pattern for a beam of electrons moving at speed u is the same as the wavelength obtained from the interference pattern for a beam of protons traveling at the same speed u in the Double-Slit experiment.

Lemma:

If the Double-Slit experiment is carried out using two beams of charged particles with the same momentum and the same charge but different masses, the wavelength of the particles with larger mass is longer than the wavelength of the particle with smaller mass. Radiation wavelength is shorter for the charge particles with smaller mass for a given momentum.

This is a direct contradiction to de Broglie wavelength conjecture. De Broglie conjecture is false. In the case of de Broglie's particle waves, the wavelength of a wave depends on the mass.

Property:

Two beams of particles of the same mass and the speed, but two different charges cannot generate the same wavelengths in the Double-Slit experiment. This is a contradiction to the de Broglie wavelength.

Lemma:

Wavelength is not inversely proportional to mass of a particle as suggested by de Broglie wavelength. There are no particle waves. Waves generated by the motion of a charged particle are electromagnetic waves; it is not a probability distribution. Wavelength of an electromagnetic wave generated by the stopping of a charged particle is independent of the mass of the particle for a given charge and speed.

Lemma:

Maxwell equations do not describe the probability of finding photons or light particles. Light is never a particle. There are no light particles or photons.

Lemma:

Wavelength is inversely related to the speed of a charge or chomentum, not to the momentum. Wavelength has no direct dependence on the mass of the particle.

XXVIII. WAVELENGTH λ IS MASS INDEPENDENT

Neutral moving particle of electrically neutral mass M does not generate waves when the particle is stopped, moving at constant speed, or the particle is accelerating or decelerating. Electrically neutral particles cannot generate an interference pattern in the Double-Slit experiment. Electrically neutral particles do not generate an image in a Particle Microscope. An Electron Microscope generates an image for a beam of electrons due to the charge an electron consists of, not due to its moving mass.

In both the Double-Slit experiment and the Electron Microscope, the underlying principle is the same. A charge particle is accelerated using electrical voltage V and then let it collide with a barrier. In the case of Double-Slit experiment, charge particles collide with the Double-Slit barrier, whereas in the case of Electron Microscope, charge particles collide with the specimen that is subjected to imaging.

Assume we have a particle of mass m with charge q that is accelerated through a voltage V. Then, the charge particle gains an electrical potential energy qV. The electrical potential energy of the charge particle is independent of the mass m of the particle. Whether we use a particle of mass m with charge q or particle of mass M with charge q, the energy of the particles will be the same. This electrical potential energy gives a particle speed and the speed of the particle depends on the mass of the particle.

For a particle of mass M and charge q accelerated by a electrical voltage V to a speed u, we have,

 $qV=(1/2)Mu^2$ (26.1) The speed of the charge q depends on the mass of the particle M. Higher the mass, lower is the speed of the particle, and hence longer the wavelength or lower the frequency of radiation. Smaller the mass, higher is the speed of the particle, and hence higher the frequency or shorter the wavelength of the radiation waves. The effect of the mass of a particle on radiation wavelength is indirect and it is through the speed of the particle. There is no direct inverse relationship of mass M to the wavelength as it is suggested by de Broglie wavelength.

It is under gravitational force that the speed of a particle is independent of mass. In the case of microscopic particles, the gravitational effect is negligible. It is an electric field that is used in accelerating a charge particle. When a charge particle is accelerated in an electric field, the speed of the particle depends on the mass of the particle. Higher the mass, lower is the speed and hence lower is the chomentum of the charge, and longer is the wavelength or lower the radiation frequency when the charge is stopped.

Lower the mass of the particle, higher is the speed of the particle and hence higher is the chomentum and hence shorter is the wavelength or higher is the radiation frequency when the charge particle is stopped. De Broglie wavelength is a complete contradiction to this fact. Frequency cannot increase with the mass of a particle as it is suggested by de Broglie wavelength.

The wavelength is also inversely proportional to the electrical potential V that is used for the acceleration of the particle. Higher the voltage V that is used to accelerate the charge, the higher the speed and hence higher the frequency of the radiation wave and smaller the wavelength. Higher the charge, higher the frequency of the radiation wave and smaller the wavelength. Wavelength is independent of the mass of the particle M.

Lemma:

When a moving charge particle is stopped, accelerated, or decelerated, the frequency and the generated wavelength of radiation waves are independent of the mass of the particle for given speed u.

Lemma:

For a fixed electrical potential V used for accelerating particles, the smaller the mass of the particle the higher the speed it achieves. As a result, smaller the mass of the particles, the higher the resolution in Charge-Particle Microscopes, and higher the mass of the particles lower the resolution, which is a direct contradiction to the de Broglie wavelength.

Lemma:

There are no Neutral-Particle Microscopes. We cannot generate an image of a specimen by shooting neutral particles in a Particle Microscope. If there were particle waves, this should not have been the case. We cannot generate an image in a Particle Microscope by shooting tiny golf balls.

Lemma:

There are no Neutral-Particle Double-Slit experiments. We cannot generate an interference pattern by shooting neutral particles in a Double-Slit experiment. If there were particle waves, this should not have been the case. We cannot generate an interference pattern in a Double-Slit Experiment by shooting tiny golf balls.

XXIX. ENERGY CANNOT BE QUANTIZED, e≠hf Lemma:

Energy cannot be quantized. Energy cannot come in quanta e=hf. Planck's conjecture e=hf false and meaningless, $e\neq hf$. Planck's Blackbody Spectrum that e=hf conjectured from is cavity dependent. Plank's Spectrum is incorrect [19].

Lemma:

If energy is quantized and e=hf, then, the energy of even the narrowest band of spectrum will be infinite. The energy of the electromagnetic spectrum must be finite and hence e=hf is false, $e\neq$ hf.

Lemma:

For Plank's conjecture e=hf to hold, the frequency f must have an independent existence. A frequency has no existence without amplitude and hence $e\neq hf$.

Lemma:

For energy to come in quanta e=hf, the energy e must have an independent existence. Energy has no existence without particles of mass and hence $e\neq hf$.

Energy is the kinetic energy of particles of mass.

There is no energy without an association of particles of mass. Potential energy is not energy until it is converted to kinetic energy of particles of mass. Light has no energy, no momentum, no temperature, no heat, no entropy. What light has is electromagnetic potential energy. Although light has no momentum, light can generate momentum on charge particles. Light is a momentum generator. The interaction of light with particles is through electric charges. Light has no effect on electrically neutral particles.

The interaction of light with matter is not a collision of momenta. Light is useless in the absence of charge particles. There will be no light in the absence of charge particles. Light has no mass. Light has no effective mass. Light is not relative. Light does not warm us up through collision. Light warms us up by oscillating the electrons. If electrons in our cells vibrate at very high frequencies, electrons will be ejected resulting in cell damage, which is UV cell damage.

Light oscillates a charge particle generating kinetic energy. This generated kinetic energy on a charge particle by light is a function of both frequency and amplitude of light as well as the electrical charge of the charge particle. Einstein's claim that light comes in photons or light quanta of energy e=hf false and meaningless. Light comes in light bursts. Light has no energy. Light can generate energy on charge particles. The generated energy on a charge particle by light is a function of both frequency and amplitude, not just the frequency itself. The energy can never be a function of frequency itself since frequency has no existence without amplitude.

If energy is quantized as e=hf, the Spectrum of electromagnetic waves cannot be continuous. If the energy is quantized, even the narrowest band of the spectrum contains infinite frequencies and hence the energy of even a narrowest band of an electromagnetic spectrum will not be finite. The energy of the electromagnetic spectrum must be finite and hence energy cannot come in quanta e=hf. Planck's relationship is meaningless since frequency has no existence without amplitude, e≠hf.

Lenard's photoelectric experiment that Einstein's light quanta or photons are based on is incomplete. The incompleteness of the experiment led to wrong conclusions in Lenard's experiment. These wrong conclusions led Einstein to make the preposterous claim that light consists of particles, light quanta, or photons of energy e=hf. The concept of light particles is silly. Particles cannot propagate. There are no massless particles. A particle has no frequency. A wave burst consists of not just frequency, but an amplitude too. There are no wave bursts of any frequency without an amplitude. Potential energy of a wave depends on the amplitude.

Photoelectricity must contain frequency cut-off as well as an amplitude cut-off since frequency has no existence without amplitude. Lenard did not carry out his photoelectric experiment for varying amplitude. Lenard thought he changed the amplitude of a light source by dimming light. You cannot change the amplitude of light by dimming a light source. By dimming light what you are altering is the rate of light burst released by a source. You cannot alter the amplitude of light at the source. To alter the amplitude of light, you have to use a partial reflector along the path of light or at the receiver.

If you dim a light source you are able to see the individual light burst. This is an indication that by dimming light you are altering the rate of light burst released from a source, not the amplitude of light. These individual light bursts you observe when a light source is dimmed sufficiently are not particles; they are wave bursts. These light bursts have no energy. What they have is electromagnetic potential energy, e≠hf. Electromagnetic potential energy depends on the amplitude.

Frequency of light has no energy unless frequency is converted to the kinetic energy of charge particles. The energy generated on a charge particle by electromagnetic wave bursts is a function of both amplitude and frequency of the wave as well as the charge of the charge particle that is used to convert the electromagnetic potential energy to kinetic energy of charge particles [19].

Lemma:

It does not matter what the size of a mass is, if the momentum is constant, the path of the particle is either linear or circular, not a wave. The assumption that a particle of momentum behaves as a wave is self contradictory. The observables cannot be represented by the eigenvalues of operators since the eigenvalues are not unique. The state of a mass must be unique.

Planck observed the spectrum of a blackbody cavity through a small hole on the surface of the cavity and then analyzed the discrete spectrum in a cavity to model the observed spectrum. Spectrum inside a cavity is discrete. The observed Spectrum through a hole is continuous. The Spectrum of a blackbody cannot be obtained by analyzing the spectrum inside a cavity.

In deriving the blackbody Spectrum, Planck made the conjecture that the energy is quantized. He found that the mathematically obtained spectrum of a cavity can be matched to the observed Spectrum if he assumes that the energy is quantized and an energy quantum is given by e=hf.

There are many problems with Planck's conjecture e=hf. To represent an energy quantum as e=hf, the frequency must have an independent existence. Frequency has no independent existence. Frequency has no energy unless frequency is converted to energy. Frequency of an oscillating particle has energy. However, the frequency of a wave has no energy. Frequency of electromagnetic waves can generate energy (kinetic energy) on charge particles.

If energy is quantized e=hf, it is meaningless for the energy of a mass moving at constant speed since a mass moving at constant speed has no associated frequency. Gravitational. Gravitational potential has no associated frequency. The energy of a mass in motion under gravity has no associated frequency and e=hf representation is meaningless. The energy of a charge moving in a static electric field has no associated frequency and e=hf has no meaning.

The invalidity of the Planck's conjecture e=hf is also obvious from the blackbody Spectrum itself Since the blackbody Spectrum is continuous. According to Planck's conjecture, for any frequency f_i , the energy e_i is given by $e_i=hf_i$ and hence the total energy of the Spectrum E is given by,

E=∑hf_i ∀i, i=1,2,3, ...

In a continuous Spectrum, there are infinitely many discrete frequencies and hence the total energy E as the sum of energy quanta is infinite.

E=infinite

The total energy of a blackbody Spectrum cannot be cannot be infinite. Planck's conjecture cannot hold $e\neq hf$. Energy cannot come in energy quanta e=hf.

XXX. SOURCE OF DE BROGLIE CONFUSION

The concept of particle waves is meaningless and nonsensical, voodoo Physics. De Broglie claimed if light behaves as a particle, a particle must also behave as a wave of wavelength,

(29.1)

where p is the momentum of a particle.

λ=h/p

The massless has no momentum. Light has no momentum. Einstein forced a false momentum on light by proclaiming light is relative and behaves as golf balls. If light consists of particles of momentum p and travels at the speed of light c, a light particle or photon has energy e=pc. Einstein gave light mechanical energy by assumption. De Broglie conjectured, if light behaved as a particle of momentum p, a particle of mass with momentum p should also behave as a wave.

De Broglie assumed that the energy of a particle of mass of momentum p is the same as the presumed energy of a photon of momentum p if light is assumed to be particles of momentum p as Einstein did incorrectly. Light has no momentum. Light has no mechanical energy. Light is not relative [15,16]. The energy of a particle of mass of momentum p is not the same as the energy of a photon or a light quantum with hypothetically presumed momentum p since, unlike photons that have constant speed c from the start, particles of mass cannot have a constant speed from the start. De Broglie combined e=pc from Einstein's Relativity with Planck's meaningless conjecture e=hf and c=f λ to obtain the meaningless hypothetical wavelength $\lambda = h/p$ and claimed that a particle of mass of momentum p behaves as a wave of wavelength λ =h/p. De Broglie has no idea what is waving in a particle of mass m and momentum p. A particle cannot be a wave. Oscillation of a particle is not a wave. A wave anchored to a particle cannot propagate. They used the Double-Slit Experiment with a beam of electrons to justify de Broglie's claim. Does the interference pattern in the Double-Slit Experiment have anything to do with de Broglie's particle waves? Absolutely not.

There are no particle waves. However, a moving

electron generates electromagnetic waves if the electron is stopped as in the case of the Double-Slit experiment that is used to substantiate de Broglie wavelength. So, what is happening here? De Broglie says a particle behaves as a wave of λ =h/p. People who carried out the Double-Slit experiment claim they found the interference pattern of de Broglie wavelength to validate de Broglie's claim. So de Broglie won the prize. What lies beneath is a total misinterpretation of the Double-Slit experiment.

The secret lies in the use of a beam of electrons. If a beam of electrically neutral beam of particles had been used in the Double-Slit experiment, there would be no interference pattern. When a moving electron is stopped by the DoubleSlit barrier, it generates electromagnetic waves of wavelength λ given by,

 $\lambda = \eta/q_e u$ (29.2) where q_e is the charge of an electron, u is the speed of an electron, and η is the Radiation Parameter, a constant.

The Radiation Parameter η can be obtained using the Double-Slit experiment. If the Double-Slit experiment is carried out for varying speeds u and plot the λ against 1/u, the gradient of the plot is η/q_e . Since the charge of an electron q_e is known, we have the Radiation Parameter η . A linear experimental relationship of λ against 1/u justifies the relationship $\lambda=\eta/q_e$ u.

What happens in the Double-Slit experiment is this. Electrons travel at speed u. Electrons are stopped by the Double-Slit Barrier. When electrons are stopped, there is a change of chomentum qu. The change of chomentum qu generates electromagnetic waves. These waves pass through the two slits and interfere on the screen behind the Double-Slit Barrier generating an interference pattern.

These generated electromagnetic waves as a result of the stopping of electrons by the Double-Slit Barrier pass through the two slits on the Double-Slit Barrier and generate an interference pattern on the screen and the wavelength of the interfering waves is given by $\lambda = \eta/q_e u$.

For an electron, the mass m_e of an electron is a constant, the charge q_e of an electron is a constant. The charge to mass ratio q_e/m_e is a constant. In other words, the charge of an electron q_e is proportional to the mass of an electron m_e . As a result, the chomentum q_e u of an electron is proportional to the momentum p_e of an electron. The wavelength of the generated electromagnetic wave due to the stopping of an electron of momentum p_e is inversely proportional to the momentum of the electron p_e ,

$$\Lambda = (\eta m_e/q_e)/p_e$$
 (29.3)
 $\Lambda = h/p_e$ (29.4)

where, $h=(\eta m_e/q_e)$, m_e is the mass of an electron and q_e is the charge of an electron, h is a constant. Since η can be obtained by the Double-Slit experiment, and m_e/q_e) is known, h is known. If you plot the wavelength λ for beams of electrons of different momenta p_e in the Double-Slit experiment, the gradient of the plot will be the constant h. There is no reason for the constant h to be Planck's constant. Planck's constant has no

existence since frequency has no existence without amplitude and hence e=hf cannot hold and it is meaningless. Planck's Spectrum is cavity dependent. Alas, Planck's Spectrum is incorrect since it depends on the geometry of the cavity.

So, the wavelength $\lambda = h/p_e$ applies only for electrons. It is not a wavelength of an electron mass. The wavelength $\lambda = h/p_{e}$ is the wavelength of the electromagnetic wave that is generated if an electron with momentum p_e is stopped. It only applies to electrons, not for any particle of mass with momentum p. It is NOT a wavelength of a particle of momentum p. People who carried out the Double-Slit experiment misinterpreted the Double-Slit experiment. They misconstrued the electromagnetic waves generated by the stopping of an electron as particle waves of de Brogle wavelength. A particle wave is an oxymoron. There is no de Broglie wavelength. A Particle is not a wave. A particle does not behave as a wave. A particle can oscillate. The oscillation of a particle is not a wave. The oscillation of an electron on its orbit in an Atom is not a wave; it cannot be represented by a wave equation. An oscillating charge particle also generates electromagnetic waves of the oscillation frequency of the particles. These generated electromagnetic waves resulted from the oscillation of charge particle propagate. The generated а electromagnetic waves due to the stopping of an electron in a beam of electrons or due to the oscillation of an orbiting electron in an Atom are not anchored to the electron that generated them and hence cannot determine the position and momentum of the charge particle that generated them.

Yes, when an electron of momentum p_e is stopped, it generates a wave of wavelength $\lambda = h/p_e$, where h is a constant that can be obtained by the Double-Slit experiment. There is no reason for this constant h to be the Planck constant; it is not the Planck constant. There is no Planck constant since e=hf is invalid and meaningless. The electromagnetic wave of wavelength $\lambda = h/p_e$ generated due to the stopping of an electron of momentum pe is not a particle wave; it is a propagating electromagnetic wave; it is not anchored to an electron or charge particle that generated it. The $\lambda = h/p_e$ is the wavelength of the electromagnetic waves that is generated if an electron of momentum p_e is stopped. For any particle of momentum p, there is no wavelength, $\lambda \neq h/p$. There are no particle waves. De Broglie's claim that a particle of momentum p behaves as a wave of wavelength λ =h/p is bizarre and the derivation is false and meaningless. There are no de Brogle waves.

The electromagnetic waves generated by the stopping of a charge particle of momentum p can be used to obtain the speed of the particle since it is inversely proportional to the speed of the particle. However, the wave length says nothing about the momentum of the particle because the charge is associated with the mass of the electrons, not the mass of the particle. If a particle of charge q and mass m moving at speed u is stopped, the wavelength of the generated electromagnetic wave is given by,

λ=n/qu

(29.5) where $q=nq_e$, q_e is the charge of an electron which is a constant and n is the number of electrons the charge of the particle is equivalent to.

The wavelength of the electromagnetic waves generated due to the stopping of a particle of charge q=nq_e is not related to the mass of the particle or the momentum of the particle. Electromagnetic waves generated by the stopping of a charged particle of charge q, mass m, and momentum p says nothing about the position and the momentum of the particle. However, the wavelength of the electromagnetic waves generated by the stopping of a charged particle is inversely proportional to the speed of the particle, not to the momentum of the particle $\lambda \neq h/p$, $\lambda = \eta/qu$.

Lemma:

the wavelength The λ=h/p_e is of the electromagnetic waves that is generated if an electron of momentum $p_{\rm e}$ is stopped. The constant h can be obtained by the Double-Slit experiment and has no reason to be Planck's constant. Planck's constant has no existence since e≠hf. Planck's conjecture e=hf is meaningless since frequency has no existence without amplitude.

Lemma:

A particle of momentum p has no wavelength, $\lambda \neq h/p$. There are no particle waves.

XXXI. FALLACIES OF MODERN PHYSICS

Spin is Bipolar. Bipolar Spins cannot have unipolar Up and Down quanta. Up has no existence without Down and Down has no existence without Up. Up and Down cannot come in quanta. Up and Down are not states of a Bipolar Spin. Up and Down exist relative to observers only. One observer's Up can be Down for another observer at a different location. Up and Down exist as perfectly negatively correlated entities. Up and Down cannot be in a superposition since there are no Up and Down unipoles. An entity that exists only relative to observers cannot come in quanta.

Spin-1/2 is meaningless. There is no quantum Spin 1/2. Quantum Spin 1/2 is a result of the hypothetical and invalid de Broglie wavelength that Quantum Mechanics was founded upon. de Broglie wavelength is incorrect. Not too surprisingly, de Broglie wavelength is incorrect exactly by a factor of one-half. Just because a particle is assumed to behave as a wave of a certain wavelength, the particle is not going to be a wave of that wavelength. If you want to assume the behavior of a particle to be a wave of a certain wavelength, even though such an assumption is simply preposterous, at the very least, you must make sure that the particle has the energy required to be at that wavelength. If particles do not have the energy required to satisfy the assumptions, the whole theoretical foundation is going to collapse; de Broglie wavelength in Quantum Mechanics is one such assumption.

A particle of mass does not have energy required to be at the de Broglie wavelength. If you are able to

demonstrate that a particle behaves as a wave of de Broglie wavelength using the Double-Slit Experiment, that experiment is undoubtedly a double-slit blunder [2] since no Particle has the energy to be at de Broglie wavelength. It is very clear that the misinterpretation of the Double-Slit Experiment is one of the reasons that led to Quantum Mechanics [2, 7]. A particle wave is a result of the Double-Slit blunder. Particle waves are meaningless. A wave anchored to a particle cannot propagate. Oscillation of a particle is not a wave. A particle is not a wave. A particle cannot behave as a wave. Wavelength has no independent existence. Wavelength has no existence without amplitude. If the wavelength is determined by the momentum of a particle as de Broglie falsely claims, what determines the amplitude of the wave.

The bright spots on the screen in the Double-Slit Experiment are not a result of particles colliding with the screen. Particles cannot reach the screen behind the Double-Slit barrier in the Double-Slit Experiment. Double-Slit barrier does not have a hole along the beam for the particles to go through; two slits are off to the beam. Particles never reach the screen; they are stopped at the double-slit barrier [2]. It is the electromagnetic waves that result from the stopping of the charge particles by the double-slit barrier that generate an interference pattern on the screen in the Double-Slit Experiment.

If a detector is placed at the Double-Slit experiment, part of the wave through the slits will be reflected onto the screen. Since the detector is active. waves from the detector also reach the screen directly. All these waves travel on different paths and meet on the screen with different time delays; it is this superposition that makes the interference pattern disappear in the Double-Slit experiment when a detector is placed. The disappearance of interference has nothing to do with the act of observing it. A particle is not a thief to be concerned with who is watching. The claim in physics that a particle goes through two slits simultaneously is ridiculous: nonsense, not science. How shameless one has to be to make such a claim in science? What is surprising is that the people who make such nonsensical claims call themselves scientists. They teach this nonsense in universities and charge a hefty fee for it.

A particle by definition has a mass. Any particle has a mass. There are no massless particles. A massless particle is an oxymoron. Even if one falsely assumes that a particle of momentum behaves as a wave, no particle (mass) has the energy required to be a wave of de Broglie wavelength even if particles want to. No mass can start at constant momentum or at constant speed. It is only a wave that starts at constant speed and remains at the same speed since a wave has no existence without propagating. Wave has no mass and hence contains no momentum [8, 5]. Any entity that has no standstill existence cannot have momentum. Any entity with momentum must be able to be brought to a stop by applying equal and opposite momentum. Light has no standstill existence. If light has momentum, light could be able to be stopped by

applying equal and opposite momentum. Light does not respond to a force. Equal and opposite momentum cannot be applied to light. Light cannot be stopped since light has no stand still existence. Light cannot carry momentum. Any entity that has no standstill existence cannot be relative. A mass at rest cannot have a speed c relative to light and hence a mass cannot have rest energy given by $e=mc^2$. Einstein's rest energy is meaningless, $e\neq mc^2$.

If light has momentum, light cannot have a constant speed even in a vacuum in the presence of gravity. Light has no momentum. Light has no equivalent mass. Light has no acquired mass. Light has no Spin. Spin requires mass, momentum. Every magnetic field is not a result of a spin. Every spin does not generate a magnetic field. Spin magnetic field is static. Spin Magnetic Field is anchored to the spinning particle. Spin magnetic field does not propagate. A magnetic field of a propagating electromagnetic wave is not a Spin. A particle does not have a spin unless it is an ejected particle from an orbiting system. Spin is a property of an orbiting system. Orbiting Systems spin naturally.

Polarity of light is not a Spin. Polarity is unipolar. Spin is Bipolar. There are infinitely many polarities. Horizontal and Vertical polarization of light is not equivalent to Up and Down spins. Polarity is observer independent. Whereas, Spin is either Up or Down and exists only relative to an observer. The polarity of light can rotate. This rotation does not generate a magnetic field. Magnetic field of light is not a Spin Magnetic Moment. There are crystals that can rotate the polarity. However, the rotation of polarity is not a Spin. Polarity of light cannot simulate the Spin of particles.

No mass can travel at constant speed from the start, $e\neq pc$. No mass can have a speed relative to light and hence a mass has no rest kinetic energy, $e\neq mc^2$. There are no massless particles. There is no particle without a mass. The mass is a fundamental property of a particle. The mass of a particle is independent of its speed and acceleration. The mass of an object is not determined by the momentum or acceleration. The mass. A mass at standstill has no acceleration. A stationary mass on a gravitational object has no acceleration. No mass can have a constant speed under gravity. Any entity with momentum cannot have constant speed under gravity. If light has momentum, light cannot have constant speed under gravity.

It is only the electromagnetic waves that can travel at constant speed from the start under gravity in a vacuum, not the particles. In the presence of a medium, speed of the light decreases as light approaches a gravitational object due to the increasing density gradient of the medium resulting in refraction of light near a gravitational object. There is no refraction of light near a gravitational object in the absence of a medium, in a vacuum. There is no gravitational lensing in the absence of a medium [12].

In the presence of a medium, gravity generates a gradient in the medium and hence speed of light cannot be a constant under gravity in the presence of

a medium. It is this gradient of the medium that refracts light near the sun, not some hypothetical space-time in General Relativity. General Relativity does not hold true [5]. Arthur Ellington misinterpreted the diffraction of light near the sun he observed during an eclipse to substantiate General Relativity; an experimental blunder. The diffraction of light near a gravitational object has nothing to do with General Relativity. The refraction of light near the sun cannot substantiate General Relativity. Light does not diffract near a gravitational object in the vacuum. A mass cannot warp space even if the space is warpable. Mass of an object does not occupy the space. It is the volume of an object that occupies space, not the mass. If the space is warpable, it is the volume of an object that must warp the space and the curvature is independent of the mass of an object. If the space is warpable, it is the volume of an object that determines the curvature of space. If space is warpable, it is not space.

It is the density of the medium that surrounds a gravitational object that is warped by a mass, not the space. Vacuum space is not warpable. If it is warpable, it is not a vacuum space. Einstein's Relativity is utter nonsense, mathematical and conceptual lunacy, not science. Time cannot be relative. If time is relative, time will be directional. Einstein's Time Dilation Factor or Moronicality Factor v is directional, not a constant for all the directions. If Einstein had considered a light burst at an angle in a moving train instead of a vertical light burst, he should have realized the Moronicality of the time dilation and Special Relativity. Light does not propagate relative to observers. The path of light is unaltered relative to observers. Special Relativity is silly since it is a result of bending of light relative to observers. Observers cannot bend light. Observers cannot derail trains. Time cannot be relative. Clocks that we engineer cannot determine time. Clocks are designed to display time that we have defined. Time is a definition. Directional motion cannot generate non-directional relative time. A train cannot derail relative to observers. Light cannot derail relative to observers. Light does not propagate relative to observers. Einstein derailed light. Galileo derailed trains. Both Galileo Relativity and Einstein Relativity are invalid. The mistakes in Galileo Relativity can be corrected. Einstein Relativity and its off-shoots such as General Relativity and Quantum Mechanics are rubbish both conceptually and mathematically and must be discarded.

Einstein's Special Relativity is based on the average forward and backward travel time of a beam of light. Clocks do not tick the average forward and backward time of a beam of light. Clocks are incompatible with Special Relativity. The path of light is not relative. Even when you make the false assumption that the path of light is observer dependent, you can easily see the Moronicality of Time Dilation and Special Relativity if you consider a beam of light at an angle in a moving train instead of a vertical beam of light. Einstein's Time Dilation Factor γ

(Moronicality Factor) that is derived for the lateral plane and forced onto the direction of motion of the frame by forcing the average forward and backward length contraction by the Contraction Factor $1/\gamma$ does not apply for other infinitely many directions.

You cannot derive a time dilation factor γ for direction vertical to the motion of a frame under the false assumption the path of light is relative, and force it in the direction of motion of the frame claiming that the average forward and backward length to contract by the factor $1/\gamma$, and expect γ to be applicable to all the directions. If you have to make forward and backward length to contract by factor $1/\gamma$ to force γ onto the direction of motion of the frame, you also have to make the forward and backward length to contract in any other direction making the volume of an object to contract [15]. If volume contraction can make γ the time dilation factor for any direction on a moving frame, you can make the time absolute by allowing the volume of an object to contract appropriately in all directions [15]. Path of light cannot be altered relative to observers. Observers cannot bend light and hence Special Relativity is utter nonsense. Time is not relative. Light is not relative. Maxwell equations cannot be transformed onto inertial frames [16,17,4].

Einstein's Relativity Factor γ does not apply for the entire frame. It does not apply even for the direction of the frame without a forced contraction of average forward and backward length. Average forward and backward length contraction is not real since motion is always in either forward or backward, not both. Averages exist on paper, not in reality. Equations that are derived for bi-direction cannot be applied for uni-direction. Special Relativity based on the average time does not apply for real-time systems. Real-time systems are unidirectional. Real-time systems do not operate on average forward and backward time. Special Relativity is incompatible with clocks and real-time dynamic systems. Special Relativity is mathematical and conceptual blunder.

No charge particle can have constant speed in the presence of other charge particles. No atom can have a constant momentum in the presence of other atoms or an external magnetic field even though atoms are neutral. A particle of mass must gradually gain speed from standstill. A particle of mass cannot have a constant speed from the start. Only a particle of mass that starts and remains at constant speed has the energy required to be at de Broglie wavelength; there are no such particles or masses. The energy of a particle of mass m and momentum p is given by $e=p^2/2m$, not by e=pc. The energy of a particle of momentum p has nothing to do with speed of light, e≠pc. Light has no momentum. Light has no energy. Even for hypothetical light quanta or photons, $e\neq pc$. Light does not come in photons or light quanta. Light is not particles. Light bursts are not particles.

Propagation of light is not relative. Light does not propagate relative to observers. Maxwell equations cannot be transformed onto inertial frames. The Lorentz Transform cannot transform the Maxwell equations for light onto inertial frames [16]. What the Lorentz Transform transforms is the trivial solution to the Maxwell equations, not the propagation of light [17]. The trivial solution to the Maxwell equations is the static electric and magnetic fields. The Lorentz Transform does not exist. The Lorentz Transform is unique [4]. Maxwell equations are not not transformable onto inertial frames. Einstein's time dilation factor depends on the angle to the direction of motion of the frame and cannot be used for one directional motion [15]. Time cannot be relative. If time is relative, time will be directional. The directional motion cannot generate non-directional relative time. Lorentz-Einstein Physics is a result of a mathematical and conceptual oversight, a deception, or a blunder.

Even though no particle is a wave, if you still want to consider particles as waves hypothetically, then, the fitting wavelength of any particle that the energy of a particle can support is twice the de Broglie wavelength. When the fitting wavelength is used, Spin 1/2 disappears. In fact, with the fitting wavelength, no such thing as Spin 1/2 appears in Quantum Mechanics. If we had started Quantum Mechanics with the fitting wavelength that the energy of a particle can realistically support, we would have never come across such a meaningless and unexplainable term as Spin 1/2. Spin 1/2 is utter nonsense. Even an integer Spin is meaningless. Spin is a Spin. There is no integer Spin or 1/2 Spins. This is one of the things that one must be totally blind to believe just like religions because both are meaningless and baseless proclamations, predator doctrines.

A Particle is not a wave, and a wave is not a particle. There is no wave-particle and particle-wave duality. A Particle is not something that emerges from a wavefunction vibration that some books claim to be [3]. What is the vibration of a wavefunction anyway? Hypothetical wavefunction was derived for a particle. Hypothetical human-crafted wavefunction has no existence without a Particle. A wave anchored to a particle cannot propagate. A vibration of a particle is not a wave. Wavefunction of a particle is hypothetical since there is nothing waving in a particle. Probability distribution is static, not a wave. Probability distribution cannot propagate. A propagating wave cannot be a probability distribution. A wave with zero crossing cannot be a probability distribution even when it is squared and normalized.

Nature doesn't do probability. Natural processes are never probabilistic. There is no probability without conscious beings who have studied probability. Probability is a human invented tool for gambling in its origin. Probability is not a part of nature. Probability stems from our ignorance about the working of nature. Particles do not behave as waves. State of a particle must be certain, and cannot be probabilistic. The position and momentum of a particle in an atom must be certain, cannot be probabilistic. A particle is either here or there, not both. A particle cannot be here and there simultaneously. The state of a charge particle cannot be uncertain. Uncertainty of a charge particle breeds radiation. An electron in an atom cannot be uncertain since uncertainty of the position and momentum lead to radiation loss.

If you still want to consider particles to be waves hypothetically, you should at least use the fitting wavelength that the energy of a particle can support. Just because you assume a particle of momentum p is at de Broglie wavelength $\lambda = h/p$ does not mean a particle of momentum **p** can be at that wavelength. Before you make such an assumption, you must make sure particles have the sufficient energy to be at that wavelength. You must derive the wavelength of a particle for the energy contained in a particle, not by some ad hoc assumption. If a particle is assumed to behave as a wave of hypothetical wavelength determined by the momentum of the particle, what determines the amplitude of the wave. A wavelength has no existence without amplitude. A wave must exist for momentum to determine the wavelength. A wave does not come into existence just because one defines a wavelength. A particle of momentum p cannot be a wave just because a wavelength has been defined as $\lambda = h/p$ and the Double-Slit experiment is misinterpreted to support it. Waves are not particles and particles are not waves. There is no wave-particle duality.

If an experiment has demonstrated that a particle behaves as a wave of de Broglie wavelength, it must be an experimental error or misinterpretation of experimental data or downright experimental blunder. Most certainly a Double-Slit blunder [2]. It is no surprise since experiments are designed to support a theory, not to disprove them. As a result, experimenters only see what the experimenters want to see. Experimenters can easily overlook what they do not want to see; they fail to see the real picture in the haste of proving what they intended to prove. After all, there is no glory in disproving. There is no glory in disproving anything whether it is relativity, Quantum Mechanics, or anything else. No real genuine experiment can prove that the de Broglie wavelength exists without making an experimental blunder.

They would have noticed the mistake if they had done the Double-Slit experiment for a beam of protons as well as a beam of electrons with the same momentum; the wavelengths of the interference pattern will not be the same even though the momentum is the same. Particle waves of de Broglie wavelength will not be able to explain the difference in wavelength: if particle waves of de Broglie wavelength is the cause of interference pattern, the wavelength should have been the same since both beams have the same momentum; but they will not be the same. It is not the momentum that determines the wavelength of the interference pattern, it is the speed of the charge that determines the wavelength. Speed of protons is not the same as the speed of electrons even though the momentum is the same.

We already know double-slit experiment using a beam of particles is an experimental blunder [2]. Since it is the same experiment that had been used to substantiate the de Broglie wavelength, we have no doubt about the outcome. If there is an experiment

that shows a theoretical blunder to be correct, then that experiment itself must also be an experimental blunder.

Moving charges that generate electromagnetic radiation waves when the charge is stopped, accelerated, or decelerated. In the Double-Slit experiment and Particle Microscopes, it is the stopping of charges that generate waves that travel at the speed of light. It is the motion of charge, chomentum, that generates waves, not momentum. Mass of a particle here is just a carrier of charges since a charge has neither existence nor motion without a mass. Smaller the mass, higher the speed for a given momentum, and hence higher the chomentum and the frequency of the electromagnetic waves generated. Wave generation with the motion of charged particles has nothing to do with the motion of the particle of mass or the momentum, and everything to do with the motion of charges or the chomentum.

The momentum of a particle does not generate a wave. When a moving charge q of momentum p is stopped, it will generate electromagnetic waves. The wavelength of these generated waves by the stopping of a moving charge q of momentum p is proportional to 1/qu, not to 1/p, where u is the speed. In the case of moving electrons, the qu is also proportional to the momentum p_{e} of an electron, where $p_{e}=m_{e}u$, and hence the wavelength of the electromagnetic waves generated by the stopping of a moving electron of momentum p_e is proportional to 1/p_e. It is only in the case of a beam of electrons, the wavelength of electromagnetic waves generated is inversely proportional to the momentum of an electron. This does not hold for any particle of momentum p. A particle of momentum p does not generate a wave when they are stopped. A particle of momentum p has no associated wave. A particle of momentum p is not a wave. Only the motion of charges generates waves when they are stopped, accelerated, decelerated.

For a particle of mass m with speed u and charge $q=nq_e$, where q_e is the charge of an electron and n is the number of electrons that q equals to, the wavelength generated by the stopping of the mass m is proportional to $1/np_e$, where, m_e is the mass of an electron, p_e is the momentum of an electron, $p_e=m_e u$. It is the momentum p_e=m_eu of an electron that plays a role in the generation of electromagnetic waves, not the momentum of a mass p=mu. The wavelength of the electromagnetic waves generated by the stopping of a charge g of mass m and speed u is given by $\lambda = h/np_e$, where n is the number of electron charges of g and p_e is the momentum of an electron, $p_e=m_e u$, h is a constant. The constant h can be determined by the Double-Slit Experiment and there is no reason for it to be the Planck constant. The observations made for a beam of electrons in the Double-Slit Experiment cannot be extended to any beam of particles. The Double-Slit experiment does not generate an interference pattern for a beam of electrically neutral particles.

The generated waves by the stopping of a mass m of momentum p and charge q are electromagnetic

waves, not particle waves. Momentum p=mu does not generate waves. It is the chomentum qu that generates electromagnetic waves. These generated electromagnetic waves resulting from the stopping of a charged particle are not anchored to the charged particle that generated them; they are propagating waves; they do not represent the state of a particle. They are not probability distributions and cannot be converted to probability distributions by manipulations.

Lemma:

The wavelength of generated electromagnetic waves from the stopping of a charged particle of mass is inversely proportional to the speed of mass, not the momentum, since the speed of charge is determined by the speed of mass.

The motion of electrically neutral particles of masses do not produce waves when they are stopped, accelerated, or decelerated since there cannot be waves when charge is zero. It is the acceleration and deceleration of charges that generate electromagnetic radiation waves, not the momentum of masses. There would be no interference pattern in a Double-Slit experiment if a beam of stable particles is used. There would be no interference pattern in a Double-Slit experiment if a beam of golf ball is used. A Particle-Microscope with a beam of electrically neutral particles or a beam of small marbles cannot generate a picture. That is why we cannot have Marble Microscopes or Golf Ball Microscopes.

Smaller the mass of particles that carry charges, higher the speed for a given momentum and hence higher the frequency of radiation when they are stopped. That is why we have Electron Microscopes, not Proton Microscopes or Marble Microscopes. If the de Broglie wavelength holds true, we should be able to increase the resolution of Particle Microscopes by using particles of bigger and bigger masses, which is utter nonsense. De Broglie wavelength is counter intuitive since de Broglie wavelength is inversely proportional to the mass of a particle for constant speed.

Which strings in a guitar generate higher frequencies? The answer is obvious. The fact is that a beam of electrons traveling at momentum p provides a much higher resolution than a beam of protons traveling at the same momentum p; this is a contradiction to de Broglie conjecture and Quantum Mechanics. Momentum does not generate waves. It is the chomentum that generates electromagnetic radiation waves when a charge is brought to collision with a barrier in the Double-Slit experiment or with a specimen that is under investigation in Electron Microscopes.

In orbiting systems such as Atoms, particles orbit a central mass, the nucleus. The angular momentum of an orbiting particle in a multi-particle orbiting system is not conserved [6], not constant. The angular momentum of an electron in an Atom is not a constant and cannot come in guanta. However, the total orbital

angular momentum of an orbiting system is conserved, constant. This non-zero constant angular momentum results in Spin angular momentum that is equal and opposite to counteract the orbital angular momentum of the orbiting system. The net angular momentum of the orbiting system, i.e. the vector sum of the orbital angular momentum plus the Spin angular momentum, is a null vector.

The Spin angular momentum of an atom is equal and direct opposite to the orbital angular momentum of an atom. Due to the negative charge of electrons, the direction of the Spin Magnetic Moment (SMM) is in the same direction as the Orbit Angular Momentum of the Orbiting System. The axis of Spin of an orbiting system is also the axis of Spin of the central mass. In the case of an atom, the axis of spin of an Atom is the same as the axis of spin of the nucleus. If there is no orbital angular momentum, there will not be Atomic Spin. Spin is an intrinsic property of an Orbiting System. Every orbiting system from atoms to planetary systems to galaxies spin. Some of the planets with melting cores such as earth generate Spin Magnetic Moment (SMM) due to the Spin. Since the motion of the core is restricted, not a free motion, the direction of earth's Spin Magnetic Moment is different from the Spin Angular Moment. However, this is not the case for Atomic orbit systems. In Atomic orbit systems, the direction of spin coincides with the Spin Magnetic Moment of the Atom.

The orbiting electrons generate an Orbit Magnetic Moment (OMM) that is orthogonal to the orbiting plane. The spinning nucleus takes the electrons in the on Merry-Go-Round Atom а generating Spin Magnetic Merry-Go-Round Moment. Merry-Go-Round Spin Magnetic Moment is orthogonal to the plane of spin, which is the same as the orbital plane. The Merry-Go-Round Spin Magnetic Moment is equal and opposite to the Orbit Magnetic Moment and hence they cancel out. The net Magnetic Moment due to the orbitina of electrons and the Merry-Go-Round-Spin of electrons is a null vector.

A particle spins on its own axis through its center of mass while orbiting another particle of bigger mass or bigger electrical charge that is opposite of the orbiting particle's charge, which is the nucleus in the case of an Atomic Orbiting System. Both Spinning and Orbiting can take place only in 3-Dimensional space. No Spin of a mass can take place in 2-Dimension. A mass cannot even exist in 2D space. Spin takes place in 3D. Spin is bipolar and has no unipolar Up and Downs. Spin-Up and Spin Down are 3D and exist only relative to an observer. Particles cannot even exist in 2-Dimension, not to mention the Spin. There are no Matrix Operators. 2-Dimensional Spin Matrix operators of order (2×2) cannot exist. If 2D spin operators exist in a 3D Spin Operator, the 3D Operator does not have eigenvalue representation and hence it is no longer a Spin Operator. If the x, y, and z components of an Operator are replaced by Pauli's Spin Matrices or any square matrices, then, the Operator has no eigenvalue representation and hence it is no longer an Operator of an Observable.

Pauli's Matrices have no existence. Matrix Operators cannot be in Quantum Mechanics.

Both atomic spin and orbiting take place on the same plane. It is only when the Spin angular momentum of an orbiting object is negligible compared to the orbiting angular momentum of the orbiting system that the spin plane of an orbiting object can be deviated from the orbiting plane as in the case of an electron or some of the moons of heavier planets such as Jupiter.

The direction of the Spin angular moment of an orbiting system is orthogonal to the plane of spin, which is also the plane of orbit. The direction is given by the right-hand rule relative to an observer. The Spin is either Up or Down relative to an observer. However, Spin is neither Up nor Down as far as the atom is concerned. The entities of a particle such as the direction of a Spin that we determine based on our rules are not states of a particle. Spin-Up or Spin-Down is not a state of a particle since there are no Spin unipoles. Spin is bipolar. Bipolar Spin has no unipolar Up and Down. Spin-Up and Spin-Down reside in the same particle relative to observers since there is no Up without Down and vice versa. Spin-Up and Spin-Down are not states of a particle. The direction of a Bipolar Spin that we assign to a Spin based on our agreed rules is not a state of a particle. An entity that is not a state of a particle cannot come in guanta. Spin Up and Spin-Down cannot come in quanta.

The direction of a Vector is always relative. The direction of Spin can be in one direction, positive (Spin-Up), or in the opposite direction, negative (Spin-Down), relative to an Observer. Both Spin-Up and Spin-Down reside in the same Particle. Spin-Up and Spin down are non-separable. There are no Spin-Monopoles, and as a result, there are no Spin-Up particles or Spin-Down particles. If a particle appears as Spin-Up for an Observer when the particle is observed in one direction, the same particle will be Spin-Down for the same Observer when the particle is observed from the opposite direction. Spin-Up is not a state of a particle. Similarly, Spin-Down is not a state of a particle. Spin-Up and Spin-Down are Observer dependent. Spin-Up and Spin-Down are not unipoles, and hence cannot be Quantized. Spin cannot be Quantized without Spin Monopoles. There are no spin Monopoles. If you quantize an entity, the quanta become independent entities. An independent quanta cannot fulfill the task that was fulfilled by the original unquantized entity.

Lemma:

If an entity is quantized, the quanta without headers become independent entities. Independent quanta of an entity cannot fulfill the task the original entity carried out. If angular momentum is quantized, planetary orbiting systems and Atoms cannot exist.

In the case of an atom, the Spin angular momentum of electrons compared to the orbit angular momentum is negligible since the radius of electron mass is negligible compared to the orbit radii of electrons. Further, the contribution to the Spin Magnetic Moment of an Atom from the individual spin of electrons is negligible due to the magnetic coupling of the electrons in an Atom; no two neighboring electron pairs have the same Spin Magnetic Moment polarity. As a result the net Spin Magnetic Moment of electrons is zero due to the magnetic coupling between electrons.

The Spin angular momentum of the nucleus itself is also negligible since the radius of the nucleus also negligible compared to the orbit radii of electrons. However, although the Spin Magnetic Moment (SMM) due the Merry-Go-Round motion of electrons as a result of atomic Spin or the Spin of the nucleus is significant, it is totally canceled out by the Orbit Magnetic Moment (OMM) since it is equal and opposite of the Merry-Go-round Spin Magnetic Moment (SMM). Orbit plane and the Merry-Go-Round Spin plane are the same; they coincide since one is a result of the other. The direction of the Merry-Go-Round Spin is always orthogonal to the plane of Spin, which is also the orbital plane. So, what is left is the Spin Magnetic Moment due to the spin of the nucleus itself on its own axis. As a result, the Atomic Spin Magnetic Moment (SMM) is due to the spin of the nucleus itself on its own axis.

Angular momentum operator $l=(l_x,l_y,l_z)$ satisfies the self-cross-product, $l \times l=j(2\hbar)l$. However, the reverse is not necessarily true. Any operator that satisfies $l \times l=j(2\hbar)l$ does not represents angular momentum operators *l*. We can find (2×2) matrices S_x , S_y , and S_z that satisfy $l \times l=j(2\hbar)l$, where $l_x=S_x$, $l_y=S_y$, and $l_z=S_z$. However, the matrix $S=[S_x,S_y,S_z]$ is not a square matrix, not Hermitian, and does not have eigenvalue representation and does not represent an Operator of an observable. If the Operator $S=[S_x,S_y,S_z]$ has no existence as an Operator of an Observable if S_x , S_y , S_z are square matrices, as in the case of Pauli's Spin Matrices, then, the Spin matrices S_x , S_y , S_z cannot have an existence as Operators of Observables.

Lemma:

Angular Momentum Operator *l* satisfies the self-cross-product $l \times l=j(2\hbar)l$. However, the reverse is not true. Any Operator that satisfies $l \times l=j(2\hbar)l$ does not represent an Angular Momentum Operator *l*. We may find square matrices L_x , L_y , L_z so that the rectangular matrix $L=[L_x,L_y,L_z]$ satisfies $L \times L=j(2\hbar)L$, but the rectangular matrix L has no eigenvalue representation and hence does not represent an Operator of an Observable.

In addition, for the finite dimensional square matrix operators or Pauli's Matrix Operators S_x , S_y , S_z representing the Spin Matrix Operator $S=(S_x,S_y,S_z)$ to exist, and for finite dimensional square matrix operators L_x , L_y , L_z representing Angular Momentum Matrix Operator $L=(L_x,L_y,L_z)$ to exist, there must also exist finite dimensional Position Matrix operators R_x , R_y , R_z and finite Momentum Operators P_x , P_y , P_z . However, no finite matrix operators can satisfy the non-commutative relationship $\mathbf{R}_i\mathbf{P}_i-\mathbf{P}_i\mathbf{R}_i=j(2\hbar)\mathbf{I}$ that Quantum Mechanics is founded upon, where i=x, y, z, and I is identity matrix [1]. No matrices of infinite dimension can be Operators of Observables since matrices of infinite dimensions have no eigenvalue representation. For matrix Operators **R** and **P** to satisfy the non-commutative relationship, **R** and **P** Matrix Operators must be Square Matrices. Matrices of infinite order cannot be square. Matrices of infinite order have no eigenvalue representation. Matrices of infinite order cannot be Hermitian. Operators of observables must be Hermitian and have eigenvalue representation. As a result, Matrix Operators have no place in Quantum Mechanics. Matrix Operators

Mathematically, you may find square matrix operators that satisfy $l \times l = j(2\hbar)l$, but these Matrix Operators cannot be an outcome of Position and Momentum Operators that generate the parameters of so called Particle Waves. Angular Momentum Matrix Operators cannot exist without corresponding Position and Momentum Matrix Operators. A Spin Matrix Operator cannot exist without corresponding Angular Momentum Matrix Operator. Position and Momentum Operators cannot be Matrices in Quantum Mechanics. As a result, angular momentum matrix operators have no place in Quantum Mechanics. Spin Matrix Operators do not exist. Pauli's Spin Matrices do not exist. The existence of Pauli's Spin Matrix Operators requires the existence of Up and Down Monopoles. There are no Spin Monopoles. Any operator that satisfy the condition $l \times l = j(2\hbar) l$ cannot be an Angular Momentum Operator or a Spin Operator. Matrix Operators cannot be in Quantum Mechanics.

Spin Matrix Operators do not generate Spin angular momentum since Spin Matrix Operators have nothing to do with Position and Momentum Operators. Spin Matrix Operators cannot exist without corresponding Position and Momentum Operators. Spin Matrix operators only represent Spin-Monopoles, not bipolar Spins. Spin Matrix Operators cannot exist without the existence of Spin-Monopoles; there are no Spin-Monopoles. Spin is Bi-Polar. Spin of a mass cannot take place in 2-Dimensional Space. There are no 2-Dimensional Matrix Spin Operators. No particle can even exist in 2-Dimensional Space. Observable Spin of a mass can only take place in 3-Dimension. There are no 3-Dimensional Bi-Polar Spin Matrix Operators. Spin-Up and Spin-Down are perfectly correlated negatively and cannot be represented by 2D orthogonal eigenvectors of 2D Spin Matrices. Spin-Up and Spin-Down exist in the same Spin relative to observers. Spin-Up has no existence without Spin-Down and vice versa and hence they cannot be mutually orthogonal. There are no Up and Down without observers. Existence of a physical entity does not require observers. An entity that requires an observer for its existence has no real existence. There are no Spin-Up and Spin-Down guanta.

Just because one can find matrices S_x , S_y , S_z that satisfy $l \times l = j(2\hbar)l$ does not mean that those matrices represent observables. The so-called Pauli's Spin

Matrices do not represent Operators of Observables. For Operators to be Operators of Observables, Operators must be invertible. Although Pauli's 2D Spin Matrix Operators S_x , S_y , S_z are invertible; the Spin Matrix $S=[S_x,S_y,S_z]$ that they are components of is not invertible and has no eigenvalue representation. Pauli's matrices S_x , S_y , S_z cannot be Spin Operators without the matrix he Matrix $S=[S_x,S_y,S_z]$ being an Operator of an Observable. The matrix S is not an Operator of an observable.

An electron in an atom Spins on its own axis through the center of mass of the electron while orbiting the nucleus on its own orbit. The nucleus itself spins on its own axis through the center of the mass of the nucleus, which is also the center of the mass of the Atom. When a nucleus spins, what Spins with it is the whole atom, the Atomic Spin. Spin Magnetic Moment due to the spin of an electron on its own axis is proportional to the square radius of electron mass or the surface area of an electron, which is negligible. In addition, since electrons in an Atom come in pairs and their orientations or the Spin Magnetic Moments are opposite to one another due to the repulsion of the alike and the attraction of the opposite; the net Spin Magnetic Moment of a pair of electrons is zero. As a result, spins of electrons do not have to coincide with the same plane as the orbital plane.

The Spin Magnetic Moment of the nucleus due to the spin of the nucleus itself is proportional to the square radius of the nucleus or the surface area of the nucleus. The Spin Magnetic Moment of electrons in an Atom due to the Spin of electrons themselves on their own axes is negligible compared to the Spin Magnetic Moment of the nucleus due to the Spin of the nucleus itself on its own axis. When a nucleus spins, the nucleus takes the electrons that are bound to it by their orbits on a Merry-Go-Round ride generating circular current loops for each electron. However, the Merry-Go-Round Spin Magnetic Moment of electrons due to the Spin of the nucleus is equal and opposite to the Orbit Magnetic Moment due to the orbiting electrons in an Atom, and hence they cancel out. As a result, what is left is the Spin Magnetic Moment due to the spin of the nucleus itself. The Spin Magnetic Moment of an Atom is due to the spin of the nucleus. Atomic Spin is the Spin Magnetic Moment of an Atom due to the spin of the nucleus.

Any Atom, irrespective of whether it is electrically charged or electrically neutral, has an Atomic Spin Magnetic Moment orthogonal to the plane of Spin. The direction of Spin relative to an Observer is Up or Positive (+) in one direction and Down or Negative (-) against that direction, which we may label as (positive \nearrow , negative \checkmark), or (Spin-Up \nearrow , Spin-Down \checkmark). Spin-Up does not have to be the Vertical Up \uparrow and Spin-Down does not have to be the Opposite of the Vertical, Down \downarrow . Spin-Up can be in any direction and Spin-Down is against that direction. Up and Down have no independent existence.

One can choose any direction as Up and then the opposite direction will be Down. If you choose Spin-Up as right \rightarrow , then Spin-Down will be left \leftarrow . As

far as Spin Magnetic Field of an Atom is concerned, it goes in orthogonal to the plane of Spin from one side and comes out from the other side; there are no Ups and Downs monopoles. Spin is bipolar. A Bipolar Spin does not have Spi-Up or Spin-Down states. Spin-Up and Spin-Down reside in the same Spin relative to observers. Spin-Up and Spin-Down are not states of a Spin itself.

The Atomic Spin Magnetic Moment is constant in ± direction orthogonal to the plane of Spin as long as no electron is ejected from the Atom. The plane of Spin is the same as the Orbiting Plane of electrons. The Plane of Spin of the Sun is the same as the orbiting plane of the planetary system. The direction of Atomic Spin Magnetic Moment is determined by the Orbit angular momentum of an atom. Whether the Spin Magnetic Moment of an atom is positive (UP *∧*) or negative (Down \checkmark) is determined by an observer. Up or Down exist relative to observers. There is no Up or Down without observers. Spin Angular Momentum of an Atom is always equal and opposite to the orbital angular momentum of an Atom since the net angular momentum on an atom must be zero. Since the Orbital Angular Momentum of an atom is constant, the Atomic Spin Magnetic Moment is ±Constant, provided that no electron is ejected. Atomic Angular Moment is a ±Constant does not mean it is not guantized. An atom that is free to rotate in any direction can have its Atomic Spin Magnetic Moment oriented in any direction when there are no nearby atoms or external magnetic fields.

However, in the presence of other atoms or an external magnetic field, no atom has the freedom to have any orientation. The Spin Magnetic Moments of atoms will be coupled to their neighboring atoms by the attraction of opposite poles and the repulsion of the alike. In the presence of an external magnetic field, the torque generated will align the Spin Magnetic Moment with the External Magnetic Field. The phenomenon, attraction of opposite polarities and the repulsion of the same polarities of neighboring atoms, is also the same as the alignment of Spin Magnetic Moment of atoms with an external field.

The constant Spin Magnetic Moment of an Atom depends on the number of electrons in an Atom, charge of an electron, and the frequency of the Atomic Spin. The frequency of the Atomic Spin depends on the root mean square (rms) orbit radius of all the electrons in the Atom. The frequency of the Atomic Spin changes if an electron is ejected from an Atom. The net angular momentum of an Atom that resulted from both Spinning and Orbiting must be zero, and hence the Spin angular momentum. The Atomic Magnetic Moment varies with the ejection of electrons and hence cannot be a constant, cannot come in quanta.

Atomic Spin Angular Momentum is a vector. Any Angular Momentum, whether it is a Spin Angular Momentum or Orbit Angular Momentum, is a vector. Spin Angular Momenta of electrons on their own axes are negligible. The net Spin Magnetic Moment due to the Spin of electrons in an atom is zero due to the magnetic coupling of Spin Magnetic Moment of neighboring electrons, the attraction of opposite and the repulsion of alike; this is not an exclusion principle. As a result, the plane of spin of electrons may or may not coincide with the orbital plane. Spin Magnetic Moment of an Atom is nearly unaffected by the Spin Magnetic Moment of electrons on their own axes.

Since the angular momentum and the Spin Magnetic Moment are vectors, they cannot come in quanta or they cannot be quantized. Spin Magnetic Moment is not quantized. Orbit angular moment is not quantized. Spin is Bi-Polar. Orbit Angular Momentum is Bi-Polar. Angular Momentum is Bi-Polar. Spin Magnetic Moment is Bi-Polar. Bi-Polar entities cannot be Quantized. Bi-Polar entities do not come in Quanta. Bipolar Spins cannot be a superposition of unipolar Up and Down. A particle cannot be in a superposition of Spin-Up and Spin-Down.

In addition, the orbital angular momentum of an electron in a multi-electron atom is time varying [6, 9]. Time-varying quantities cannot come in quanta. Time-varying quantities cannot be quantized. It is the angular momentum of an orbiting system that is time invariant.

The momentum of a particle is not unique to that particle. The angular momentum of a particle is not unique to that particle. So, angular momentum must be anchored to the particle. Angular Momentum that is anchored to the particle cannot come in guanta. The Spin Magnetic Moment of a particle is not unique to that particle. So, the Spin Magnetic Moment must be anchored to the particle. Spin Magnetic Moment that is anchored to the particle cannot come in guanta. The quantities that are not unique cannot come in quanta. Non-unique quantities cannot be quantized. If the Angular Momentum comes in guanta, there is no way to find out if a given angular momentum guanta belongs to mass m or M, where $m \neq M$. There is no way to find out if a given angular momentum guanta belongs to this orbiting system or that orbiting system. It is the same scenario with the Spin. Not only that the vectors such as Angular Momentum and Spin Magnetic Moment cannot be quantized, but also it is meaningless to quantize non-unique and time-varying quantities such as Angular Momentum and Spin Magnetic Moment. The Angular Momentum and Spin Magnetic Moment of an Atom that vary with the election of or reception of electrons cannot come in quanta. The angular momentum of an orbiting electron in an Atom is not time invariant. It is the Angular Momentum of the orbiting system of an Atom that is time invariant [6,5].

Light comes in light bursts. Frequency of light has no energy unless frequency is converted to energy of charge particles. The energy of these light bursts cannot be given by e=hf since frequency has no energy and frequency has no existence without amplitude. Light has no energy, no momentum, no temperature, no entropy in a vacuum. What light has is electromagnetic potential energy, which is not the same as kinetic energy. Electromagnetic potential energy can only be converted into kinetic energy of charge particles in the presence of charge particles. Electromagnetic waves have no effect on electrically neutral particles. Light has no interaction with electrically neutral particles.

Kinetic energy has no existence without an association with particles of mass. Kinetic energy associated with particles of mass cannot come in wave bursts or guanta. Potential energy is continuous. Potential energy does not come in guanta irrespective of whether it is gravitational, electrostatic, or magnetic potential. Not all the energies are created equal. When we refer to energy, it is the kinetic energy of the particles we refer to. There is no energy without matter. Electromagnetic potential energy cannot be used in place of the energy unless it is converted to energy, the kinetic energy of charge particles. Light has no effect on electrically neutral particles. Interaction of light with particles is not a collision of momenta. Light has no momentum. Light can generate momentum on charge particles. Light can vibrate electrons generating kinetic energy, which makes us warm in the presence of light.

False claim that the Spin Magnetic Moment is quantized had been supported by a bogus interpretation of the Stern-Gerlach Experiment. The beam splitting in the Stern-Gerlach Experiment had been interpreted as a spatial quantization of Spin Magnetic Moment, which is incorrect. What the experimenters overlooked was the fact that the Stern-Gerlach Experiment is simply insensitive or blind to the orientation of the Spin Magnetic Moment of an Atom. They failed to realize that the information regarding the orientation of an Atom is completely lost when an atom passes through the Stern-Gerlach Magnetic Field or any magnetic field. They failed to consider the magnetic coupling of Atoms in a beam.

Even though Atoms are electrically neutral, Atmos have Spin Magnetic Moment. Even before the Atoms in a beam of Atoms enter the Stern-Gerlach magnetic field, Atoms are already magnetically coupled. Half of the Atoms in a beam are oriented in one direction and the other half of the Atoms are oriented against that direction alternatively. Neighboring atoms have opposite orientations. No two neighboring Atoms have the same orientation. It is the coupling of the Spin Magnetic Moment of neighboring Atoms that makes a beam of Atoms to split into one Up beam and one Down beam with equal number of Atoms in the Stern-Gerlach Device.

Noteworthy:

Since the Atoms in a beam are magnetically coupled, by changing the orientation of just one Atom, you are changing the orientation of all the atoms in a beam. Orientations of neighbors are against each other. Half of the Atoms in a beam have one orientation while the other half has the opposite orientation alternatively.

When the first atom enters the Stern-Gerlach Magnetic Field, it immediately orients itself with the

magnetic field before the rest of the atoms enter the Stern-Gerlach Magnetic Field. Since the External Magnetic Field **B** is such $B >> \partial B/\partial z$, the orientation takes place before any drift takes place. When the first atom orient itself towards the Stern-Gerlach Magnetic Field, the rest of the atoms in the beam follow the suit due to the existing magnetic coupling between atoms in the beam even before the rest of the Atoms enter the Stern-Gerlach Magnetic Field. When the first Atom is in a strong external magnetic field, the rest of the atoms in the beam have no option but to follow. Now, just after the first Atom enters the Stern-Gerlach Magnetic Field, the rest of the Atoms arrive pre-aligned either towards or against the Stern-Gerlach Magnetic Field. This is what Stern and Gerlach had failed to realize. And this failure led to the false claim that Spin comes in Up or Down quanta. Bizzare Spin Quanta and the misinterpretation of the Double-Slit experiment turned Physics into mystique driven voodoo-physics.

When a beam of Atoms enters the Stern-Gerlach Device, one half of the atoms enter already aligned towards the Stern-Gerlach Magnetic Field while the other half enter aligned against the Stern-Gerlach Magnetic Field, alternatively. After the first atom enters the Stern-Gerlach Magnetic Field (SGMF), the rest of the atoms enter Stern-Gerlach Magnetic Field one by one aligned either toward or against SGMF alternatively. The first Atom of any beam is always aligned with the SGMF unless it is against SGMF. Every atom undergoes the same amount of deflection along the Stern-Gerlach magnetic field either positively or negatively. Atoms aligned toward the Stern-Gerlach Magnetic Field drift positively (Spin-Up ↑) while the atoms arriving aligned against the Stern-Gerlach Magnetic Field drift negatively (Spin-Down ↓). This Up and Down drift has nothing to do with the original orientation of the Atom or the state of the Atom.

One beam with alternate Spin orientation of Atoms has been split into two separate beams of Up and Down; each with the same number of atoms but with the Spin orientation one against the other. At any time, both Split-Beams have the same number of Atoms since they enter SGMF with alternate alignment, one Atom towards SGMF and the next Atom against SGMF alternatively. One beam is Spin-Up while the other is Spin-Down relative to an observer or relative to the Stern-Gerlach Magnetic Field. This Up and Down alignment says nothing about the actual alignment of Atoms prior to entering the Stern-Gerlach Device. The Up beam does not remain as Up without SGMF. The Down beam does not remain as Down without the SGMF. As soon as these beams leave the Stern-Gerlach Magnetic Field, the Spin of the neighboring atoms in both beams orient themselves one against the other due to the magnetic coupling between neighbors.

There is no uncertainty about which Atom ends up in which beam. The first Atom always ends up in the Spin-Up beam if its orientation is not totally against the SGMF. The second in Spin-Down beam. The third in Spin-Up, forth in Spin-Down and continues alternatively; Atoms at odd positions, 1, 3, 5, ... will be in Spin-Up Beam while Atoms at even positions, 2, 4, 6, ... end up in Spin-Down beam.

However, if the first Atom has the orientation against the SGMF before it enter the SGMF, then, when it enters Stern-Gerlach Device, it always be in Spin-Down beam and hence, in this case, all the atoms in odd positions 1, 3, 5, ... will be in Spin-Down beam while the Atoms in even positions 2, 4, 6, ... will be in Spin-Up beam.

Atoms in the Spin-Up beam remain in that orientation as long as they are in the Stern-Gerlach Magnetic Field. Similarly, the atoms in the Spin-Down beam remain in the same orientation as long as they are in the Stern-Gerlach Magnetic Field. Spin-Up and Spin-Down in SGMF is volatile. Once the Split-Up and Split-Down split beams are out of the SGMF, they are not in that orientation due to the magnetic coupling of the neighboring Atoms in the absence of an external magnetic field. The orientations of neighboring Atoms in each split beam will be opposite to each other in the absence of an external magnetic field.

Before all the Atoms are out of the first SGMF, if we send the Spin-Up Split beam or Spin-Down Split beam through a second Stern-Gerlach Magnetic Field placed in the same direction as the direction of the first SGMF, there will be no splitting since all the atoms in the beam are in the same forced orientation by the First Stern-Gerlach Magnetic Field. All the atoms enter with the orientation toward the second SGMF and undergo the same deflection without splitting and hit the screen at a single point. Placing a second Stern-Gerlach Device in this manner with Stern-Gerlach Magnetic Fields in-phase next to each other is equivalent to the direct extension of the length of the first SGMF.

Everything that happens in the Stern-Gerlach Device is deterministic. There is no probability here. The number of atoms in both beams are equal. You don't need wave function collapsing nonsense to explain the observation of the Stern-Gerlach Experiment. There is no wave function collapse here. State of a particle is not determined by a wavefunction. Particles do not have wavefunctions. There are no particle waves. It is only that the Moving charge particles generate electromagnetic waves if they are stopped.

Lemma:

A particle has no wavefunction. The position and momentum cannot be a wave. The change of position and momentum requires work done. A wave anchored to a particle is not a wave.

Before all the Atoms are out of the first SGMF, if we send the atoms in the Spin-Up Split beam or Spin-Down Split beam through a second Stern-Gerlach Magnetic Field placed at an angle to the direction of the first SGMF or out of phase, then, there will be a beam splitting. Up or Down beam from the first Stern-Gerlach Device has to leave the first

SGMF to enter the second SGMF. Now the orientation of the first Atom is entering the second SGMF at an angle. As long as that angle $\theta \neq 0^\circ$, $\theta \neq 180^\circ$ degrees, there will be an alignment torque. As soon as the first Atom enters the second SGMF, it immediately orients itself with the second SGMF and is deflected as Spin-Up. As a result, the second Atom enters with the orientation against the second SGMF due to magnetic coupling between Atoms. All the Atoms in odd positions, 1, 3, 5, ... in the beam enter in the direction of the second SGMF while the Atoms in even positions, 2, 4, 6, ... enter aligned against the second SGMF. This results in the Spin-Up or Spin-Down beam entering the second SGMF splitting into two, one with the orientation along the second SGMF while the other aligned against the SGMF. The direction of Spin-Up in the second SGMF is different from the direction of the Spin-Up in the first SGMF.

It is always the direction of the SGMF that determines the Spin-Up; it has nothing to do with the original orientation of an Atom or the state of an Atom. New Spin-Up from the second SGMF has nothing to do with the Old Spin-Up in the first SGMF. Current Spin-Up or Spin-Down has nothing to do with the previous Spin-Up or Spin-Down. Current Spin-Up is in the direction of the second SGMF while the old Spin-Up is in the direction of the first SGMF. Similarly, the current Spin-Down is against the second SGMF while the old Spin-Down is against the first SGMF. The directions of first and second SGMFs are determined by an observer. The direction of the Atomic Spin Magnetic Moment or the orientation of an Atom is determined by the population of the Atoms and any other magnetic field of the environment the Atom is in. Whether a Spin is Up or Down is for an observer's eyes only. There are no Up and Down in the absence of observers.

Lemma:

Unipolar Up and Down cannot be states of a Bipolar Spin.

When a beam of atoms passes through a Stern-Gerlach Magnetic Field, we have Spin-Up beam and Spin-Down beam with the same number of atoms. As long as all the Atoms are under the influence of the Stern-Gerlach Magnetic Field, both beams remain in that forced orientation. However, when the Stern-Gerlach Magnetic field is removed or when all the atoms are out of the Stern-Gerlach Magnetic Field, there is no force to keep all the atoms in one orientation and hence natural attraction of the opposites and the repulsion of the alike take over. As a result, atoms in the Spin-Up beam will not remain in that orientation. They re-orient themselves so that no two neighboring atoms will remain in the same orientation just like the original beam. Atoms in the undergo Spin-Down beam also the same re-orientation when there is no external magnetic field to force them to be in one orientation. Each beam now has half of atoms in one orientation and the other half in the opposite orientation alternatively just like they

were in the original beam that went into the first SGMF.

SGMF is not a state-eraser of an Atom or a particle. SGMF is not a brainwasher. SGMF is not after secretly gathering personal information of Atoms or particles. SGMF is just an enforcer; SGMF enforcement is volatile. You are welcome in my territory if you follow Bushism while you are in my territory. You are free to leave any time. What you do is none of my business when you are out of my territory. Once you leave, you will not even have a trace of evidence that you had been in a SGMF. Whether you are a single Atom or a beam of Atoms, once you leave SGMF, your orientation will be the same as the orientation before you entered the SGMF.

Once Spin-Up and Spin-Down split beams are completely out of the influence of the first SGMF, if you send either one of the split beams through a second Stern-Gerlach Magnetic Field (\nearrow or \rightarrow) with any orientation, the beam will Split into two beams; one beam has the orientation with the second Stern-Gerlach Magnetic Field (Spin-Up \nearrow or \rightarrow) while the other has the orientation against the second Stern-Gerlach Magnetic Field (Spin-Down ∠ or ←). You can define Up and Down anyway you like. Up can be any direction one chooses to be, \uparrow , \nearrow , or \rightarrow , while the Down is the any of the opposites. One beam will be aligned along the second SGMF while the other will be aligned against the second SGMF. Each Split beam now contains one fourth of the atoms of the original beam. Once again if $\theta \neq 180^{\circ}$ degrees. Atoms at odd positions, 1, 3, 5, ... will be in Spin-Up Beam while Atoms at even positions, 2, 4, 6, ... end up in Spin-Down beam, where θ is the angle between the orientation of the first Atom in the beam and the second SGMF.

Lemma:

Up is not a unique direction and hence cannot come in quanta.

If θ =180° degrees, then Atoms in odd positions, 1, 3, 5, ... will be in Spin-Down beam while the Atoms in even positions, 2, 4, 6, ... will be in Spin-Up beam. In this case, Spin-Up means orientation along the second SGMF and Spin-Down means against the second SGMF. The orientation of the Split beam is always relative to the direction of the SGMF the Atoms are in. Atoms have no memory of previous orientation. It is we who decide the orientation of SGMF. We can choose whatever the direction we want SGMF to be.

SGMF cannot be used to obtain the x, y, and z components of the Spin of a particle. It is the whole Spin of a particle that orients with the SGMF, not the component of the Spin on the SGMF. Stern-Gerlach Device is neither a spin setting device nor a Spin measuring device. Stern-Gerlach Device is simply useless, it serves no purpose. Any Spin setting by the Stern-Gerlach Device is volatile, not permanent.

You do not need a Stern-Gerlach Device to entangle the Spin of two particles. The Spins of two

neighboring Atoms are naturally entangled one against the other; it is only that we do not know their direction. If we use the Stern-Gerlach Device to entangle the Spin of two particles, we know the directions only if they remain in the Stern-Gerlach Device. As soon as they are out of the Stern-Gerlach Device we have no clue to their Spin directions except that we know their Spins are one against the other.

There is no associated wavefunction for a particle. Probability plays no part in the Stern-Gerlach Device or any other natural process. Our invention of probability to explain unknown processes does not mean those processes are probabilistic. Everything here in nature is deterministic. Everything in the Stern-Gerlach Experiment is deterministic. When Atoms goes through a second SGMF, the Spin-Up and the Spin-Down are relative to the direction of the second SGMF, previous directions are completely forgotten, erased, just like what happened to Ronald Reagan during the contra affairs; he could not remember anything. The direction of Spin is not a state. Bell's theorem is meaningless.

Particles do not behave as waves. The concept of particle waves is meaningless, voodoo physics. There is no wavefunction in action in the Stern-Gerlach Device. No roll of Dies or probability here. Nature does not have to roll the dies to determine what to do next since nature knows exactly what it is doing. It is we who have to roll dies because we do not know how nature works. The reality is deterministic. Our lack of understanding of it makes it probabilistic for us. Everything in nature is deterministic.

The way physicists have turned everything in nature into financial gold mines by plugging in some sort of hypothetical mystery here and there is simply pathetic, appalling, but mystery sells books even when it is an artificially forced fabricated mystery. Some of these books have become all-time best sellers overnight, so why not? How can the physics books become bestsellers unless it is turned into voodoo physics? Voodoo-physics books have become bestsellers creating new kinds of multi-millionaires at the expense of making physics and science a joke. Human appetite for mystery, not reality, is the reason. The same reason why Harry-Potter books disappear from bookstore shelves. How and why did the meaningless archaic religious texts that have no value in any comprehensible manner become the most printed books? Those are books written by ancient people in the dark-age or stone-age, in the flat-earth or earth-centric era, who had no idea even what orbits what, and yet claimed that everything is a creation of a creator and they were messengers of the creator. How can a messenger of a creator not know what orbits what if he is really a messenger of a creator? It is incomprehensible why those Crafted Prophecies (CRAP) are still stuck with us like leeches that suck life out of.

You can Split a beam of atoms into two beams using non-linear magnetic field such as Stern-Gerlach Magnetic Field so that all the atoms in one beam will be oriented toward the Stern-Gerlach Magnetic Field (Spin-Up ↑) while all the atoms in the other beam are oriented against the Stern-Gerlach Magnetic Field (Spin-Down ↓). This is still a forced orientation by an External Magnetic Field. If you want to maintain the same orientation in each split beam, all the atoms in each beam must be in the Stern-Gerlach Magnetic Field. Once the Spin-Up beam is out of the SGMF, the Atoms in the beam will not remain in the same direction as the direction of the SGMF. Similarly, once all the Spin-Down beam is out of the SGMF, the Atoms in Spin-Down will not remain in the direction against the direction of the SGMF. They will be re-oriented so that the neighboring Atoms in a beam are of opposite orientations.

There is no Spin-Down beam of Atoms without a nonlinear external magnetic field. You can get a Spin-Up Atom with a linear external magnetic field. You cannot get a Spin-Down Atom with linear external magnetic field. If you send a beam of Atoms through an external linear magnetic field one by one, all the Atoms in the beam align alternately with or against the external magnetic field, but there is no deflection of atoms with one orientation in one direction and the Atoms with opposite orientation in the opposite direction. As a result, you have no Spin-Up beam or Spin-Down beam with a linear external magnetic field.

If you want a Spin-Up Atom, you can use any linear magnetic field to get it since an Atom in an external magnetic field is always oriented toward the magnetic field, Spin-Up. You cannot do the same to get a Spin-Down Atom though. You cannot get a Spin-Down Atom using a linear external magnetic field. If you want a Spin-Down Atom, you need at least two magnetically coupled Atoms, and you must use a nonlinear magnetic field such as Stern-Gerlach Magnetic Field to separate them into two levels or beams. A linear magnetic field aligns the Spin of the Atoms in a beam alternatively with or against the Magnetic Field, but cannot separate them into two beams.

In the Stern-Gerlach Device, the first Atom is always Spin-Up and deflected towards the SGMF and the second Atom is Spin-Down and deflected against the SGMF. What you get from SGMF is a forced orientation, not a natural orientation of atoms. You cannot split a beam into forced orientation of Spin-Up and Spin-Down beams using an ordinary uniform magnetic field since the deflection force is zero in the absence of Magnetic Field Gradient.

The orientation of Atoms in the SGMF has nothing to do with the actual orientation of the Atoms. Spin-Up beam simply means that the Atoms in the beam are aligned with the direction of the SGMF irrespective of the orientation of the SGMF; the direction of SGMF can be horizontal, vertical or in any other direction. Spin-Down beam means the Atoms in the beam are aligned against SGMF. It is we who chose the direction of the SGMF. You cannot prepare an Atom to be Spin-Up or Spin-Down since Up means whatever direction the SGMF is directed to and Down means against that direction. Once the Atoms are out of the SGMF, the orientations of the Atoms will not be the same since they are determined by the population of the Atoms and any other magnetic field of the environment the Atoms are in.

When an Atom passes through the Stern-Gerlach Magnetic field, the information regarding the original orientation of the Atom is completely lost. The split beams, Spin-Up and Spin-Down, say nothing about the original Spin Magnetic Moment (SMM) of the Atoms. Spin-Up beam and Spin-Down beams are on a forced orientation determined by the direction of the SGMF chosen by observers. As a result. Stern-Gerlach is not a Device for measuring the Spin of an Atom. It is not a device to prepare an Atom for a certain Spin since the forced orientation is volatile. It is only a Device for separating the Spin Magnetic Moment of Atoms aligned toward SGMF from the Atoms oriented against it; this alignment is temporary. Once the atoms are out of the SGMF, forced orientation is lost. There are no Up and Down beams any longer outside the SGMF since the magnetic coupling of neighboring Spin Magnetic Moment makes the Spin of neighbors one against the other.

There are no such things called Spin-Up beams or Spin-Down beams. They are forced alignments by Stern-Gerlach Magnetic Field. Those are not permanent alignments. Those alignments disappear when the Stern-Gerlach Magnetic Field is removed or when all the atoms are out of the Stern-Gerlach Magnetic Field.

There is absolutely no difference between Spin-Up beam and Spin-Down beam. Spin-Up and Spin-Down are observer dependent, relative. Take Spin-Up Atom and rotate it by 180° degrees, what you get is a Spin-Down Atom relative to your definition of Spin-Up direction. Now, take a Spin-Up Atom relative to an Observer. This time, instead of rotating the Spin-Up Atom, rotate the Observer by 180 Degrees, what does the Rotated Observer see? The Rotated Observer sees that Atom as Spin-Down.

Earth is Spin-Up for people in the Northern Hemisphere. The same earth is Spin-Down for the people in the southern Hemisphere. If you are in space, the Spin of the earth depends on the direction you are looking at. Spin-Up for one person in Space can be Spin-Right or Spin-Left for another Observer in Space. Spin-Up or Spin-Down is not attached to an Object; it is attached to an Observer. There are no Spin-Down or Spin-Up particles since Spin-Monopoles do not exist. Spin-Up is not a state of a particle. Spin-Down is not a state of a particle. This mantra is repeated to stress the importance of the message; if physicists had understood this, we would not have come across Quantum Spookiness; physics would not have turned into a laughing stock, voodoo Physics, a nonsense. Spin guanta and Stern-Gerlach Experiment as well as the particle waves and Double-Slit Experiment for a beam of electrons are the genesis of voodoo Physics. Stern-Gerlach experiment wave misinterpreted to make the false claim that Spin is quantized as Spin-Up and Spin-Down. Double-Slit Experiment for a beam of light was misinterpreted to make the false claim that the position and momentum

of a particle behave as a wave of wavelength proportional to 1/p, where p is the momentum of the particle. Particle waves are mythical, not science, nonsense.

The Split of a beam of atoms into two beams is not a Spatial Quantization of the Spin Magnetic Moment. It is not a wave function or probability that determines whether an atom ends up in Spin-Up or Spin-Down split beams. In which of the two beams an Atom ends up is completely deterministic. The split of a beam of Atoms into two beams is a result of magnetic coupling of the atoms in a beam. Stern-Gerlach Experiment is insensitive to the actual orientation of the Spin Magnetic Moment of an Atom. To change the orientation of atoms in a beam, all you have to do is to change the orientation of one atom in the beam and the rest follow the suit. In the case of Stern-Gerlach, it is the first atom that enters the SGMF that changes the orientation of the Atoms in the whole beam. Since the SGMF is strong, it has a firm grip on the first Atom of the beam that enters it, and hence the rest of the Atoms in the beam has no option but to follow the suite due to the magnetic coupling between the Atoms. Strong SGMF does not allow the orientation of the first Atom to budge.

State of a particle is not probabilistic. State of a charged particle cannot be uncertain. Uncertainty costs energy. State of a particle cannot be defined by a wave function since the state of a particle must be unique. Wave function is not unique to a particle since the position and momentum are not unique to a particle. A wave that is anchored to a particle is not a wave cannot exist. A wave with any anchorage cannot propagate. Many particles can have the same wave function since different masses can have the same momentum.

Wave function has no existence without e=hf, yet this relationship cannot exist since frequency has no existence without amplitude, and the energy has no existence without association with particles of mass. There is no massless energy. Frequency has no energy. Planck's e=hf is meaningless. Planck's constant h has no existence. If e=hf, the energy of even the narrowest band of a spectrum will be infinite since there are infinitely many frequencies between any two frequencies. Planck's blackbody Spectrum is invalid [19]. Planck's blackbody Spectrum is cavity dependent and charge independent. True blackbody Spectrum cannot be cavity dependent.

Vibration of a particle is not a wave. Vibration of an electron in its orbit in an Atom is not a wave. A wave cannot be anchored to a particle of mass. A wave cannot have an attachment to a particle of mass. If everything in the universe and the universe itself is determined by wavefunctions, then, the state of an embryo must also be determined by wavefunction. If a state of a human embryo is determined by a wavefunction, at which stage of the growth does the state of the person it grows into become certain and why? Physicists' effort to link everything including the universe into a wavefunction [3] is utter nonsense.

The truth of the matter is that there are no wave functions associated with particles or objects. There are no particle waves. Particle waves are an oxymoron. Waves are not particles. Wave particles are an oxymoron. There cannot be a wave-particle duality. Light burst is a wave, not a particle. Frequency has no energy, $e \neq hf$. Light is not relative, $e \neq mc^2$. Light does not consist of particles. Light has no momentum, $e \neq pc$. A particle of momentum p is not a wave and has no wavelength, $\lambda \neq h/p$. Position and Momentum of a particle are not independent of each other; they are mutually dependent since momentum determines the position and the rate of change of position determines the momentum.

There cannot be momentum without a change of position. There cannot be an acceleration without the change of position. A stationary object on a gravitational object has no acceleration. Gravity is not acceleration. An apple on a tree has a force but no acceleration. A falling apple has an acceleration. Einstein's Equivalence Principle is false. Gravity and acceleration are not the same. Change of position determines the momentum. Position cannot remain unchanged in the present of a Momentum. The position of a particle cannot be fixed if it has a momentum. If the momentum is a constant, the position of the particle will be on either a linear path or circular path, not a wave. If the position is constant, there will be no momentum. The position and Momentum of a particle are mutually dependent, interlinked. The position and momentum of a particle cannot be a Fourier Transform Pair. The Heisenberg Uncertainty Principle is false.

A particle of mass cannot be in multiple places simultaneously. For a given position of a mass, the momentum of the mass must be unique. For a given momentum of a mass the position of the mass must be unique. The Position and Momentum of a mass are mutually dependent. The position and momentum of a particle cannot be a Fourier Transform Pair. As a result, there is no Uncertainty Principle. Higher the precision of position x that can be measured, the higher the precision of the momentum p since $p=m\partial x/\partial t$. The precision of position and the precision of momentum are directly related, not inversely.

There is nothing preventing achieving Precision in both position and momentum simultaneously. All that is required is one radar pulse to determine both position and momentum simultaneously. Both position and momentum can be determined simultaneously. Position and momentum of a mass are not probabilistic, cannot be probabilistic. The position and the momentum of a particle must be unique independent of the size or the mass. Our ignorance of the position and momentum of a particle of mass cannot make the position and momentum probabilistic. We invented probability for gambling. Nature does not do probability. The chance of happening says nothing about what exactly happens next.

Energy of a particle is mechanical energy. Mechanical energy does not come in Quanta.

Schrodinger Equation is just the time derivative of the plane wave function under the assumption the mechanical energy of a mass is given by e=hf; it does not hold true [7,13]. If the Position Operator is defined as the position itself, the position and momentum of a particle cannot behave as a wave. If the position and momentum of a particle is assumed to behave as a wave, the Position Operator cannot be the position itself. A particle does not have a wavelength. The Schrodinger equation based on false assumptions is invalid, unrealistic, and meaningless. There is nothing waving in a particle. A particle of momentum has no wavelength. If a moving charge particle is stopped, it generates electromagnetic waves of wavelength determined by the speed of the charge $\lambda = \eta/qu$. If a moving electron of momentum p is stopped, it generates an electromagnetic wave of wavelength λ =h/p, where h is the radiation constant. This wavelength $\lambda = h/p$ only holds for a beam of electrons; it does not hold for a beam of particles of momentum p. It does not hold for a beam of electrically neutral particles. The radiation constant is not Planck's constant. There is no reason for the radiation constant to be Planck's constant h. Planck's constant h is meaningless and has no existence since frequency has no independent existence; frequency has no existence without amplitude, e≠hf. The radiation constant h can be obtained by carrying out the Double-Slit experiment for electron beams of different speeds. The validity of the equation can also be confirmed by carrying out the Double-Slit Experiment for electron beams of different momenta. A linear plot of λ against 1/p confirms its validity.

There cannot be a change of position without the passing of time. There is no momentum without the passing of time. If time is unchanged, the position cannot vary and momentum cannot exist. A wave containing the position and momentum of a particle cannot be separated into time independent position and momentum wave and time dependent particle energy wave.

The position and momentum of a particle cannot represent a wave. Nature does not normalize. Light has no energy, no momentum, no temperature, no entropy, no mass. What light has is electromagnetic potential energy. Electromagnetic potential energy is not energy unless it is converted to kinetic energy of charge particles of mass. Frequency of light has no energy. You cannot quantize electromagnetic potential energy to generate light particles [8]. Vectors cannot be quantized. Vectors are Bi-Polar. Bi-Polar entities cannot be quantized.

Lemma:

There cannot be a change of position or the existence of momentum without the passing of time.

The claims that every object including the universe itself has a wave function [3], and the decisions that are not being taken in this world are being taken simultaneously in a parallel world are even beyond fiction, psychotic, not scientific. If the energy is constant, the proliferation of parallel worlds is going to drive the energy content thinner and thinner in this world as we all make decisions. The Multi-world concept is going to proliferate the parallel worlds even faster than the Fibonacci numbers, or even the proliferation of rabbit population, if there had not been a mechanism to naturally limit the lifespan of rabbits. Limited life span and the limited resources will keep the rabbit population in check, but no such check is there for the proliferation of Worlds under Many-World Theory taking place in psychotic-physics. The outlandish voodoo claims in Modern Physics exist in psychotic minds of physicists, not in reality. Physics has turned into a haven for prophecies just as religions had been in the flat-earth or earth-centric era. There was a time people went on fasting in isolation in a cave till hallucination and claimed that they were messengers of a creator. How can some guys who even had no idea of what orbiting what can be a messenger of a creator? Claims in Modern Physics do not seem to be any different from religious proclamations of dark ages. Most places, people have no option but to follow flat-earth or earth-centric era nonsensical crafted prophecies since it is forced upon them. Physicists on the other hand purposely have to ignore the mathematical and conceptual fallacies of Lorentz-Einstein Physics and Quantum Mechanics since their bread and broccoli are based on them. If vou are hired to teach Lorentz-Einstein Physics and Quantum Mechanics, it is your job to teach them and promote them if you want to keep the job; you are not hired to question them. So the fallacies perpetuate.

Many-World theory is just a Crafted Prophecy (CRAP) to obtain a PhD, nothing more. Now, since we are at it, what is the purpose of doing a PhD? Become a professor, a publications counter? It is only after you receive a PhD that you realize this degree has no use other than the ability to call yourself a Doctor, which nobody cares about. By doing a PhD, you have already wasted years of life under extreme odds for something that has no real value, in fact, a negative value. Your undergraduate colleagues are already managers at work when you get your PhD. Your undergraduate colleagues are the ones interviewing you for a job - so tell me Mr. so and so, what have you been doing all these years ...? To tell you the truth, I wasted it doing graduate studies, bye. If you have a PhD, there is another use, you can also write it at the end of your name, big deal indeed. Nowadays, you can also get a PhD certificate online for cash in no time and call yourself Doctor. You will receive your Degree certificate in mail from some dungeon, you know where; the paradise for crooks. Most probably you can get a government job with that if you are young (governments are the most age discriminatory institution that exist), and no doubt, you will be working for your undergraduate colleagues who are now senior managers. When you apply for government jobs, somebody from human resources call you and request the birth date, even though it is illegal to do so, in the pretense of equal opportunity and enter it into database so that they can screen out

any future application based on age; you will never hear from them again; they call it equal opportunity.

The Multiverse and Many-World concepts are utter nonsense. Just think about that. Do you really believe those CRAPs (Crafted Prophecies)? Many-World and Multi-Verse are good publication mills for people in academia. Many-Worlds and Multiverse concepts are good for increasing the number of publications for people in academia, the only thing they care about. Not much else for others except some laughter, fictional entertainment, just like broom-riding Harry Potter books. The only thing people in academia care about is how to increase the number of publications, nothing else matters, certainly not the content; it is just a result of the pathetic situation of universities and people of the academia. The worst university I came across was the last university I attended. It was simply a waste of two years. How can an institution get so many mediocre people under one roof? Calling that dungeon a university is simply an insult to the word university. Less than mediocre place, a waste of time and money. The so-called third world universities I attended were far superior than that place. Unless a university is carefully chosen, it is not only a time and money waster but also an emotional drainer. It is interesting that most of the people who become professors are the ones who cannot teach, lack a good understanding of the subjects, lack the ability to question what is in textbooks. lack the ability to connect with students and provide guidance, and downright nasty. Telling a student "get a publication within six months or you are out" is not supervising. That is what happens when the recruiting is done based on the number of papers published in propaganda journals; you get people who cannot teach; you get archaic guys with outdated knowledge and less than mediocre teaching skills who have no interest other than holding onto the job.

If you turn the pages of propaganda journals, you can see yourself that there is nothing in them other than page-filling nonsense. They talk as if they want to discover the universe, but their only interest is to cook up some publications that comply with the status quo of the archaic religious text so that they can hold onto the job and keep earning their bread and broccoli. No question is more repulsive and preposterous than the question, "how many publications do you have?" That is the only thing they want to know if you apply for a faculty position, nothing else is important.

Spin-1/2 is a meaningless nonsense nobody seems to have any idea of what it really is. Spin can neither be 1/2 nor an integer. Spin Quantum is an oxymoron. Spin cannot come in quanta. Every textbook talks about it without telling what it actually is. No one can explain it because there is no such thing called Spin-1/2. Nobody has a clue what it is except to repeat what is given in the textbook like parrots, like some nonsense in a religious text. There is no doubt that Many-Worlds, Multi-Verse, Big-Bang, Expansion, Spin-1/2, Particle-Waves, Universe Wave-Particles, Time-Dilation, Space-time, Gravity Bending Light, Big Bang (Big Nonsense) will provide a

good laugh about the state of physics and Universities, propaganda journals, and the higher education, their high priests, and mediocre professors. If you submit a paper that goes against these religiously guarded Crafted Prophecies (CRAP), it will be instantly rejected with no reason given by the high priest at the helm who has no other purpose than just to protect the religious dogma. When it comes to mystique, Modern Physics has surpassed religions and ancient voodoo practices.

Propaganda journals are there for the promotion and maintenance of the status quo of voodoo-physics so that the job security is maintained. Recently, some backward and silly websites such as arxiv have joined the task to promote and rescue voodoo-physics. If you want to publish there, you must become a cult member that adheres to their religious text, anything that counter the cult-text will be deleted instantly and the voodoo-club membership will be revoked. Only the practicing voodoo-physics cult members that adhere to the religious text are allowed to publish there. You require the blessing of at least two voodoo-club members to join. It is understandable since any cracks in the exposure of foundation of voodoo-physics will dry up their funds, the lifeline, their bread and broccoli. They are as much blind to anything outside the religious text as the people who run those propaganda journals.

Even more amusing, of course next to COVID-19 Modeling (biggest joke in the pretense of science by Government officials), is the idea that space emerges from a wavefunction. Now we are in a Chicken and Egg situation. Which came first? Who created the creator? Wave function cannot exist without space. How can space be an emergence of a wavefunction? Wavefunction has no existence without the position and momentum of a Particle. There is nothing waving in a particle either. There is no wave function since position and momentum of a particle are mutually dependent. You cannot have momentum without the change of position of a particle, and the state of a particle is unique. It does not matter what the size of a mass is, if the momentum is a constant, the path of the particle is either linear or circular, not a wave. In order for position and momentum of a particle to be a Fourier Transform Pair, for a give position of a particle, the momentum should be able to have infinitely many values, and for a given momentum of a particle, the position of the particle should be able to have infinitely many positions, which is impossible for a real particle of mass since a particle of mass cannot be at infinitely many places at the same time. There cannot be a change of position and momentum without the passing of time. Momentum has no existence without passing time and the change of position. The position of a particle cannot be constant if the particle has momentum. An action cannot take place without the passing of time. Similarly, if the position and momentum varies that result in the passing of time. We cannot just force a particle to be at infinitely many places with infinitely many momentums just because we want to force the position and momentum pair to be a Fourier Transform pair. Just because de Broglie came up with a hypothetical wavelength, a wave cannot come into existence. A wavelength itself does not determine a wave. A wave must have an existence for a wavelength to exist. If the momentum of a particle is constant, how can the position and momentum of that particle be a wave; a self contradiction. For the position and momentum to be a wave, momentum cannot be a constant. The position and momentum of a particle cannot be a wave. The assumptions must be realistic. We cannot make voodoo assumptions and call it science. We cannot subdue reality to be what we want it to be just because we want to impose our ill-found psychotic religious doctrine on nature.

Wavefunction is a misinterpretation of the real electromagnetic radiation waves generated by the stopping of moving charge particles. Momentum of a particle does not generate waves. Momentum of charges generates electromagnetic waves if the charge particles are stopped; these waves are not particle waves. If a moving electron of momentum p is stopped, the wavelength of the electromagnetic wave generated by the stopping of the electron is proportional to the inverse of the momentum of the electron, λ =h/p, where h is the radiation constant; these are not hypothetical de Broglie waves. The relationship $\lambda = h/p$ applies only for electrons of momentum p when they are stopped; it does not apply for any particle of momentum p. The radiation constant h here has nothing to do with the Planck constant. A particle-wave is an oxymoron. It is the change of chomentum, qu that generates waves.

Wavefunction is not a natural phenomenon; it is something physicists have enforced upon a particle based on wrong assumptions. A particle has no wave function. An electromagnetic wave produced by the stopping of a moving charge is not a particle wave. The stopping of a moving particle does not generate electromagnetic waves if the particle is electrically neutral and stable. The momentum of a particle cannot generate waves unless the particle has an electric charge. The wavelength of the wave generated by the stopping of the particle is a function of qu, not a function of momentum mu, where q is the charge and u is the speed. Use a beam of stable and neutral particles and see for yourself if you get an interference pattern in the Double-Slit experiment or an image in the Particle Microscopes: you cannot. Of course, you cannot accelerate neutral particles using an electric field; so, you may have to use a slingshot or throw the particles as fast as possible at the Double-Slit barrier or at the specimen in a Particle Microscope. The wave function of a particle is a result of a theoretical blunder and a Double-Slit Blunder; a misinterpretation of the Double-Slit experiment for a beam of electrons. Electromagnetic waves generated by a moving charge particle when the charge is accelerated, decelerated, or stopped is not a particle wave. The Double-Slit Experiment is not probabilistic, it is totally deterministic.

Probability distribution is not a wave, and wave is

not a probability distribution. The area under a probability distribution must be unity for the entire range. A propagating wave cannot be normalized for the area under it to be unity for the entire range. A wave that is normalized for the area under it to be unity for the range of wavelength is not a probability distribution. Representation of wavefunction as probability distribution is invalid in every sense of probability. Probability distribution is a purely static function. A wave function with zero crossings cannot be a probability distribution even when its magnitude is squared and normalized. A wave that is subjected to attenuation and frequency shift cannot be a probability distribution. Nature does not normalize. Who is going to do the normalization for nature? A propagating wave cannot be a probability distribution and a probability distribution cannot be a wave. Probability distribution cannot propagate. Probability distribution is a calculated entity for the past data and it is static. Probability and statistics are not real and say nothing about reality. A chance of happening does not mean it is going to happen. Probability was invented for gambling and used for gambling human decision making when a decision has to be made with partial knowledge.

It is not possible to quantize the electromagnetic field of light to generate hypothetical Photons. A field is a vector. A field cannot be guantized. No Field can come in Quanta. An electromagnetic field does not come in Quanta. Electromagnetic fields come in continuous wave bursts of limited duration [8]. There are no light particles or Photons. Frequency has no energy, e≠hf. Einstein's photon derivation is a mathematical blunder. There are no force carrying particles, they are hypothetical, mythetical. There are no massless particles. Wave bursts are not particles. Particles cannot propagate. The appearance of a wave burst behaving as a particle does not make it a wave. If it is a particle, it must be able to be stopped. A wave cannot be stopped since a wave has no standstill existence. The obvious misinterpretation of the Double-Slit Experiment to claim that a particle behaves as a wave does not make a particle a wave. There are no gravitons. Gravity cannot be a wave. There are no gravitational waves. A gravitational field with a belonging cannot consist of gravitons that have no means to carry belonging information. Coherent light cannot consist of spatially random Photons, light quanta, or light particles. A light-particle is an oxymoron. Particles cannot propagate. There are no massless particles. The concept of Photons came into existence under the assumption that Photons are spatially random. If the Photons are spatially random, there cannot be directional coherent light.

It is a mass or charge that generates Fields. Fields cannot come into existence without mass or charge. If particles emerge from the vibration of wavefunctions, what is waving in a wavefunction? What is vibrating the wavefunction? There is no vibration for free. Vibration costs energy. Phrases "vibration of wave function" and the "wavefunction of a particle" themselves are meaningless. Hypothetical wave function has no existence without particles and space. You cannot claim that particles emerge from the vibration of a wave function when there is no existence of wave function without a particle. You cannot claim that space emerges from the vibration of a wave function when there cannot be a wave without space. You cannot talk about the vibration of a wave function without telling what is vibrating there. If the universe itself emerges from the vibration of a wavefunction, what is there vibrating, where is it vibrating? If the universe is a result of the vibration of a wavefunction, is it vibrating outside the universe? What does the position and the momentum of the wave function of the universe represent? Do physicists have any clue to what wave function is? It does not look like physicists have a clue to what they are talking about or writing about.

Electron Microscope is one of the most successful engineered devices with many real useful applications. However, the claim that it is an example where particle waves are at work is false, incorrect, deeply misleading, and downright voodoo-physics. An entity of mass is a particle. A moving particle has momentum. An entity of momentum is not a wave. A particle is not a wave. A particle can be stopped, a wave cannot. An entity that cannot be stopped has no momentum. Light has no momentum. Waves are not particles. There are no particle waves. The working of Electron Microscope has nothing to do with mysterious, hypothetical particle waves. What generates an image of a target is not particles or particle waves. There will be no interference pattern in the Double-Slit experiment if a beam of electrically neutral particles is used. There will be no picture of a specimen in a Particle-Microscope if a beam of electrically neutral particle is used; that is why we have Electron-Microscopes, not Particle-Microscopes.

When an electron collides with a target, it generates electromagnetic radiation that is reflected from and penetrated through the target. It is these generated electromagnetic radiation waves that generate an image in an Electron Microscope. Faster the electron, smaller is the wavelength, and hence higher is the resolution of the image. It does not have to be a beam of electrons. Any beam of charged particles will produce an image. However, larger the mass of the charge is, more the energy required to accelerate it to obtain the same resolution given by lighter charges. As a result, the use of smaller mass such as electrons is more appropriate since an electron is a charge particle with the smallest mass available, and engineering involved is simple. All that is required is a heated cathode to generate electrons and an electric field to accelerate them. Higher the charge to mass ratio higher the resolution. Electrons provide the highest achievable charge to mass ratio (e/m) and hence highest resolution that any charge Particle Microscope can achieve.

Do not use Electron Microscope to substantiate hypothetical particle wave nonsense or de Broglie waves. Electron Microscope has nothing to do with hypothetical particle waves or de Broglie waves. Working of Electron Microscope is based on electromagnetic radiation, not some hypothetical particle waves. If you think that an image in a Particle Microscope is produced by particle waves, see if you can get an image of a specimen using a beam of neutral stable particles; you cannot. You cannot generate an image of a specimen by shooting tiny golf balls or tiny marbles at it.

Nature has no Ups and Downs. Ups and Downs are relative; they exist relative to an observer. What is Up for one Observer can be Down for another Observer. There is no Spin 1/2. Spin 1/2 that appears in Quantum Mechanics is a result of miscalculating the wavelength for a particle of momentum p. The energy of a particle of mass with momentum p is not given by e=pc; it is given by $e=p^2/2m$.

Spin-Operator Matrices can only represent Spin Monopoles, not Spin Bi-Poles. There are no Spin monopoles. Spins represented by Pauli's Spin matrices do not exist. All the Spins are Bi-Polar. Spin Matrix based on Pauli's Spin Matrices as x, y, and z components of the Spin Matrix is not square, not Hermitian, and does not have an eigenvalue representation.

There are no Spin Matrix Operators. No Matrix Operator can be in Quantum Mechanics. Matrix Operators cannot satisfy the non-commutative relationship that Quantum Mechanics founded upon. You cannot resolve the issue of non-compatibility between Matrix Operators and Quantum Mechanics by proposing Matrix Operators of Infinite Dimensions. Matrix Operators of infinite dimensions cannot be in Quantum Mechanics either since Infinite Dimension Matrix Operators cannot be Square and have no eigenvalue representation. For a matrix operator to be Hermitian, the matrix must be a finite square matrix. Neither finite nor infinite matrices can be in Quantum Mechanics.

There is nothing spooky about the action at a distance. Action at a distance is simply the magnetic coupling between atoms, which is causal. Every orbiting system spins. Atoms spin since they are orbiting systems. When an atom spins, it generates Atomic Spin Magnetic Moment, which makes atoms behave as little magnets. Action at a reasonable distance is due to this magnetic coupling. If you want to see action at a reasonable distance, place two compasses near each other and notice that their orientation is always against each other. Now, move one away and notice how the orientation of one compass changes with the change in the orientation of the other compass by manually changing the orientation of one compass. It is the same with the atoms that are free to orient themselves as long as there is no external magnetic field. In the presence of an external magnetic field, there is no magnetic coupling between the two.

Of course, you can sell books by Harry-Potterizing or voodoofying the nature, but you cannot spookify the nature itself. Nature is real. You can only make nature unreal in your mind or on the pages of a book. If you entangle whatever you do with some mystery, and write a book about it, not only you can sell million copies and become a bestselling author and brag how many copies you sold, but also you can laugh all the way to the bank. It is the fictional books that have a demand in the general public, not the reality books. Unlike the Real Physics books, the Voodoo physics books are an easy sell since the general public has a craving for mystery. Majority read for entertainment not to discover the reality. In this reality, some found a perfect place for nova-mining in Quantum Mechanics to dig for a kind of nova-gold.

Experiments are designed with preconceived ideas. Unless experiments are designed without bias observations are neutrally analyzed and and realistically interpreted, experiments can mislead. Experiments are as good as their interpretation and hence the interpretation must be realistic. There are many experimental blunders in physics. The nature of the experiment that leads to experimental blunders. In some cases. experimenters can repeat the experiment until they get a dataset that demonstrates what they want to prove as in the LHC. In other cases, experimenters can misinterpret the observation to support their claim and build a theory based on that misinterpretation as in the Stern-Gerlach experiment, Compton experiment, and Anderson Cloud Chamber Experiment. Experimenters can also link observation deceptively to the phenomenon they want to demonstrate even though observation is a result of a completely different phenomenon as in the case of Gravitational waves in LIGO or Arthur Ellington's interpretation of solar eclipse data in support of Einstein's meaningless General Relativity..

So-called Entanglement of particles is simply the magnetic interaction, nothing more, nothing less. Even though an Atom is electrically neutral, an Atom carries an Atomic Spin Magnetic Moment since an Atom is an orbiting system of charge particles, and hence the Magnetic interaction of neighboring Atoms is real. The orientation of the Spin Magnetic Moment of an Atom is not a permanent state of an Atom. The orientation of an Atom is relative; it only has an existence relative to an observer determined by the population of the Atoms and any other external magnetic field present. Polarization is not Spin. There are infinitely many polarizations and they exist independent of observers. But, a Spin can only be Up or Down and they only exist relative to observers; they have no existence independent of observers. You cannot use the Horizontal Polarization and Vertical Polarization of light to represent the Spin-Up and Spin-Down of an Atom or a charge particle. Horizontal and Vertical polarizations are orthogonal. Spin-Up and Spin-Down are one against the other, not orthogonal, and cannot be represented by orthogonal vectors. Horizontal and Vertical Polarizations unipolar. Polarization is unipolar, not bipolar. Spin is bipolar.

You cannot Quantize Spin into Spin-Up and Spin-Down without creating Spin-Monopoles. Representation of Spin-Up and Spin-Down by orthogonal vectors cannot be done without Spin-Monopoles. Spin-1/2 is a mathematical blunder wrapped in a bogus interpretation of Stern-Gerlach Experiment. When the fake curtains that cover the reality of the Stern-Gerlach Experiment and the Double-Slit Experiment for a beam of Atoms are opened, Quantum Mechanics has no place to hide behind; it will cease to exist. That is the reality of the non-Reality of voodoo physics.

Modern Physics defies any logic; it defies basic mathematics. If it lacks common sense, it ain't science, it is a religion. A statistical prediction model based on available data is not science, it is a useful decision-making tool in the absence of underlying hard science of a physical process. Nature does not run on probability. Probability does not come into picture without human imposing of it on nature. It is humans who described nature with probability. It is our lack of understanding of the physics behind nature that turn us toward probabilistic description. If we leave the probability behind and search for the real mechanism of nature, we may find it one day. Probability is a hindrance to the understanding of nature. Nature does not run on probability. Probability is there for gambling and other day to day human decision making in the absence of a true understanding. If you have a collection of data, you can use probability and statistics to justify whatever you want, not to find what it is.

Undoubtedly, Quantum Mechanics has reached the state of a pandemic and hence the declaration as such is warranted; Test, Quarantine, and Social Distancing protocol may be required to control the spread of the pandemic. Unlike the case of COVID-19 pandemic, the culprit of the QM pandemic is visible for those who want to see even though everybody appears to be blind to the fact in order to quietly harvest the benefits by maintaining the status quo. When your bread and broccoli depend on it, it is natural you take every effort to protect it.

XXXII. FACT OF THE MATTER

For anyone who does not have time or patience to read that many pages, or who does not care about the mathematical detail, here is the brief run down, simple take home message:

- 1. Spin is Bipolar. Bipolar Spins do not have unipolar Up and Down states.
- 2. Polarization of light is not a Spin. Horizontally and Vertically Polarized light cannot be used to simulate Spin-Up and Spin-Down.
- 3. Spin-Up has no existence without Spin-Down and vice versa. Horizontal Polarization can exist on its own. Vertical Polarization can exist on its own. Horizontally Polarized Waves can be in superposition with the Vertically Polarized waves since they are monopoles. However, Spin-Up and Spin-Down cannot be in superposition since there are no monopolar Up and Down in a Spin.
- 4. Although an Atom is electrically neutral, an Atom has a Spin Magnetic Moment.
- 5. Spin is an inherent characteristic of any orbiting system. An Atom is a microscopic orbiting system.
- 6. A particle does not have a spin unless it is an

ejected particle from an orbiting system.

- 7. The net Spin Magnetic Moment of an Atom due to the spin of electrons is zero due to the magnetic coupling between the electrons.
- 8. The Orbital Magnetic Moment of an Atom cancels out with the Merry-Go-Round Spin Magnetic Moment of an Atom since they are equal and opposite.
- 9. Spin Magnetic Moment of an Atom is due to the spin of the nucleus itself.
- 10. Stern-Gerlach Device is not a Spin Measuring Instrument. It is a volatile Spin Modifier. A useless device. When a Spin-Up beam is out of the Stern-Gerlach Device, it is no longer a Spin-Up beam. It will be a beam with alternative Up and Down Atoms due to the magnetic coupling of neighbors in the absence of an external field..
- 11. If the Stern-Gerlach Device records an Atom as Spin-Up, it says nothing about the actual direction of the Atomic Spin Magnetic Moment prior to its entering into the Stern-Gerlach Device. It only says that the actual Atomic Spin is not against Stern-Gerlach Magnetic Field (SGMF).
- 12. Spin-Up Atom remains at that orientation only until the Atom is in the SGMF.
- 13. Stern-Gerlach Device is neither a Spin setter nor a Spin Measuring Device. You cannot set the Spin of an Atom or charge particle to a desired direction permanently using a Stern-Gerlach Device.
- 14. Stern-Gerlach Device has no effect on a beam of electrically neutral particles.
- 15. Stern-Gerlach Device cannot give you the x, y, and z components of a Spin. It is the whole Spin that is oriented towards the Stern-Gerlach magnetic field, not the component of the Spin along the direction of Stern-Gerlach Magnetic field.
- 16. An Atom or a charged particle does not have a memory of the direction of its Spin. Spin-Up and Spin-Down exist relative to observers only.
- 17. The direction of the Spin of an Atom is determined by the orientations of neighboring atoms or the external magnetic field it is in and exists relative to observers.
- 18. Bipolar Spin has no preferred direction. A Spin of an Atom does not have the direction of the Spin as a state of it. It is not born with a preferred angle. Bell's theorem is meaningless.
- 19. Spin cannot be quantized as Up and Down. Spin-Up and Spin-Down are observer dependent. Spin-Up and Spin-Down cannot be states of a particle since there are no Up and Down Spin monopoles.
- 20. Nature cannot quantize observer dependent entities. There are no Up and Down in nature.
- 21. The direction of Spin is not the state of a particle.
- 22. The Stern-Gerlach Experiment is deterministic, not probabilistic. Failure to realize this fact led to the misinterpretation of Stern-Gerlach Experimental observations, the source of voodoo physics, Quantum Weirdness.

- 23. Operators must have an eigenvalue representation. Spin Matrix **S** with Pauli Matrices \mathbf{S}_x , \mathbf{S}_y , and \mathbf{S}_z as its x, y, z components, $\mathbf{S}=[\mathbf{S}_x,\mathbf{S}_y,\mathbf{S}_z]^T$, does not have eigenvalue representation.
- 24. Spin Matrices $S = [S_x, S_y, S_z]^T$ is not a square matrix, not Hermitian, non-invertible, and has no eigenvalue representation and hence Spin Matrix **S** cannot be an Operator of Observables.
- 25. Propagating waves cannot be normalized for the area under the wave to be unity for the entire range.
- 26. Wave normalized for the area under the wave to be unity only for the range of a wavelength is not a probability distribution.
- 27. A wave with zero crossings cannot represent a probability distribution even if the amplitude is squared and normalized.
- 28. The probability distribution of an observable of a particle cannot have zeros. Squared and normalized Wave Functions have zeros.
- 29. The position and momentum of a particle cannot be a wave. A wave of constant momentum is self contradictory.
- 30. A particle cannot disappear at one location and reappear at another location. A particle is no Houdini.
- 31. Nature does not Normalize.
- 32. Position and Momentum of a particle are mutually dependent. The assumption that position and momentum are mutually independent is false. There is no momentum without the change of position.
- 33. If the position and momentum are fixed, a particle cannot behave as a wave.
- 34. If a particle behaves as a wave, the position and momentum cannot be fixed.
- 35. For a given position, momentum cannot have multiple values simultaneously.
- 36. For a given momentum, a particle cannot have multiple positions simultaneously.
- 37. There cannot be a change of momentum or position without the passing of time.
- 38. If the time is fixed, there cannot be momentum.
- 39. If the position is fixed, there cannot be momentum.
- 40. If a particle behaves as a wave, the Position Operator cannot be the position itself.
- 41. If the Position Operator is the position itself, a particle cannot behave as a wave.
- 42. The assumption that a particle behaves as a wave and the Position Operator is the position itself are mutually contradictory for Quantum Mechanics to exist.
- 43. Independent of the size of a particle, Momentum has no existence without change of position and time. A particle cannot have a fixed position in the presence of a momentum. For a given position, a particle cannot have multiple momenta simultaneously. For a given momentum, a particle cannot be in multiple places simultaneously. If the time is fixed, a particle cannot have momentum. A

particle of mass cannot be a parameter of a Fourier function. Although constant momentum is time independent, the position of a particle is time dependent. The Position and Momentum pair of a particle of mass cannot be a Fourier Transform pair. As a result, the Heisenberg Uncertainty Principle is invalid.

- 44. Observables cannot be modeled as eigenvalues of operators since eigenvalues are not unique. Only the eigenvectors are unique.
- 45. The Schrodinger equation is nothing more than the time derivative of the plane wave equation under the invalid assumption that the position and momentum of a particle are time independent, and an equally invalid assumption that the mechanical energy of a particle is quantized as e=hf, which is meaningless since frequency has no independent existence. Energy has no existence without mass. Frequency has no existence without amplitude. e≠hf.
- 46. If e=hf, even a Spectrum the narrowest band has infinite energy since there are infinitely many frequencies between any two frequencies in a continuous Spectrum.
- 47. If light consists of photons or light quanta of energy e=hf, then the energy of a light beam will be infinite since the spectrum of a light beam is continuous and there are infinitely many frequencies between any continuous frequency band. Even the narrowest band of light will have infinitely many frequencies within the band and hence the total energy will be infinite if light comes in quanta or photon of energy e=hf.
- 48. If light quanta or photons have a mass, then the mass of a beam of light of continuous spectrum of any bandwidth will be infinite since there are infinite frequencies in any continuous bandwidth. If light consists of photons, photons cannot have a mass. You do not need any experiment to find this out. If light consists of photons and photons have mass, then you will feel the punch and it will be heavier than a punch of any boxer. You will be knocked out for eternity if light has mass.
- 49. Time is not relative. Mass is not relative. Einstein's Special Relativity is false both mathematically and conceptually. t'≠γt, e≠mc², e≠pc, λ≠h/p. Gravity cannot warp space. Space is not warpable. What gravity warps is the material medium that surrounds a gravitational object. The density gradient of the medium bends light. Gravity cannot bend light.
- 50. Independent of the size of a particle, there is no Momentum without passing of time. Mechanical energy is continuous, not quantized e≠hf, the position and momentum of a particle cannot behave as a wave λ≠h/p, and hence the Schrodinger equation is invalid.
- 51. Quantum Mechanics is a human folly that paved the way for Voodoo-physics, which is a nova-gold mine for Harry-Potterized books for publishers.
- 52. Spin-Up and Spin-Down are bipolar. Spin is observer dependent. Whether a cat is dead or

alive is not determined by observers. Dead and Alive are monopoles that are independent of any observer.

- 53. Spin-Up and Spin-Down are not states inherent to a particle; they are observer impressions; they are observer dependent. Dead and Alive are states inherent to a biological species; they are not observer impressions; they are not observer dependent.
- 54. Spin-Up and Spin-Down are NOT STATES of a particle. Horizontal and Vertical polarizations are STATES of light. Spin of a particle is Bipolar. Polarization of light is Unipolar. Dead and Alive are Unipolar. Dead and Alive are STATES of a biological species. Bipolar Spins do not have Unipolar Up and Down.
- 55. Neither finite nor infinite order Matrices can be Operators in Quantum Mechanics. The representation of an observable as the eigenvalue of an Operator is not unique if the Operator is a Matrix Operator since a Matrix Operator has multiple eigenvalues. Eigenvalue Finite order satisfy Matrix Operators cannot the non-commutative relationship. Non-square, rectangular Matrix Operators have no eigenvalue representation. A Matrix of order infinite has no eigenvalue representation, not symmetric, not Hermitian. An Operator that has no eigenvalue representation cannot be an Operator of an observable. Matrices cannot be Operators of Observables in Quantum Mechanics by any means
- 56. There are no particle waves. Neutral stable particles do not generate waves. A beam of neutral stable particles does not generate an interference pattern in the Double-Slit experiment. Moving charge particles generate electromagnetic waves as they collide with the double-slit barrier.
- 57. It is only the wavelength of electromagnetic waves generated by the stopping of a moving electron of momentum p that is given by λ =h/p. The h is not Planck's constant; h is the radiation constant. The value of h can be obtained by the Double-Slit experiment by plotting λ against 1/p, where p=m_eu, m_e is the mass of an electron and u is the speed of electrons.
- 58. Momentum of a particle does not generate waves. Collisions of moving charges generate radiation, electromagnetic waves. Charge has no existence without a mass. Mass of an electron provides a home for a charge. Mass of a particle provides a charge motion. Particle is a chauffeur for a charge. Motion of a charge, the change of chomentum, $\Delta(qu)$ generates electromagnetic waves.
- 59. In Quantum Mechanics, the electromagnetic radiation waves that were generated by the change of chomentum qu due to the stopping of moving charges are incorrectly interpreted as particle waves generated by momentum. Momentum of a particle gives an electrical charge a ride. It is the riding charge on a mass or a

piggybacking charge on a mass that generates waves. The mass determines the speed of the charge for a given momentum.

- 60. The wavelength of electromagnetic waves generated by the stopping of a charged mass is independent of the mass.
- 61. It is the electromagnetic waves that generate an image in Electron Microscope. A beam of neutral and stable Atoms does not generate an image in a Particle Microscope.
- 62. It is electromagnetic waves that generate an interference pattern in the Double-Slit experiment. A beam of neutral and stable Atoms does not generate an interference pattern in the Double-Slit experiment.
- 63. Even if the particles are incorrectly assumed to behave as waves, the de Broglie wavelength that Quantum Mechanics was founded upon is incorrect. No particle has the energy required to be at de Broglie wavelength. Spin-1/2 is a result of this wavelength error.
- 64. If the particles are incorrectly assumed to behave as waves, Spin-1/2 disappears when the fitting wavelength that the energy of a particle of momentum p can support, e=p²/2m, is used. There are no particle waves. Particles do not behave as waves.
- 65. Vectors cannot be quantized. Bi-polar quantities cannot come in monopolar Up and Down. A particle cannot be both Spin-Up and Spin-Down at the same time. Spin-Up has no existence without Spin-Down and vice versa. Spin-Up and Spin-Down are observer dependent and hence cannot come in quanta.
- 66. If your q-bit gismo is working, it is working, not for the reason you think it is working. Spin-Up and Spin-Down are observer dependent bi-poles. Spin-Up and Spin-Down are non-separable and hence they are not in a superposition. Vertical and Horizontal Polarization of light can be in a superposition. Polarization of light is NOT Bipolar. Polarization of light is not a Spin.
- 67. If your q-bit gismo is working, it is because you are using the polarization of light for the q-bit. Q-bit based on the polarization of light has nothing to do with Spin or Quantum Mechanics. Q-bit based on Polarization of light is an Optical Bit, and O-Bit. due to the Atomic Spin Magnetic Moment.
- 68. No particle can be in multiple states simultaneously except in voodoo-physics, where impossible is possible for the believers just like in a religious doctrine.
- 69. Spin or the direction of the magnetic field of a spinning charge particle cannot be obtained by using a Stern-Gerlach or any other device based on a magnetic field since the spin magnetic field of a particle always aligns with the external magnetic field.
- 70. Universe cannot be 4D, 5D, 10D, 11D, 12D or any dimension higher than 3D.
- 71. Universe is 3D. The detector of the dimension of

the universe is in our ears.

- 72. Every species has its own detector for detecting the dimensions of the universe without which no species can function.
- 73. The only reason you are able to go on making preposterous claims that the universe is 4D, 5D, 10D, 11D, or 12D is the fact that the universe is 3D. If the universe had not been 3D, you cannot function.
- 74. Light has no mass, light cannot be able to propagate in a gravitational field. If light has a mass, you would not even be able to stand up.
- 75. If light has a momentum, the punch light delivers is so immense and unparalleled to any other that you will remain flat on the ground.
- 76. If light consists of photons of momentum, outer space would not have been cold.
- 77. Cosmic Microwave Background (CMB) Radiation is a result of the vibration and collision of the sparse charged particles in space. CMB is not some remnant of a hypothetical Bigbang. Space cannot expand. There was never a bigbang.
- 78. Blackholes are not holes. Blackholes are dense objects. Since the medium surrounding a blackbody has a large negative density gradient, non-diagonal outgoing light is totally reflected and non-radial incoming light is totally transmitted. Blackholes cannot prevent outgoing radial light from going out and the incoming radial light from reflecting back. However, due to the very high negative gradient of the medium density, the outgoing light undergoes a large redshift of wavelength and as a result the outgoing light is not within the visible region. Blackbody radiates but radiation is much below the visible region due to the very high negative density gradient of the medium surrounding a blackhole. Hawking's derivation of radiation is a fantasy derivation and it is meaningless; there are no antiparticles popping up from vacuum.
- 79. Hubble's Law v=Hd is invalid; it is an experimental and conceptual blunder, an experimental misanalysis and misinterpretation. If the redshift of a star in a galaxy is a result of a radial motion of the galaxy, all the stars in the galaxy must have the same redshift. The redshift of a star in a galaxy cannot be attributed to a radial motion of the galaxy. Universe is neither expanding nor accelerating. The redshift of a star cannot be attributed to a universe expansion. The increasing redshift cannot be attributed to an accelerated universe expansion. Space is massless. Space cannot move. Space cannot warp. Space does not interact with mass. Space does not interact with light. Objects are not anchored to space. Propagating light is not anchored to space. The massless cannot accelerate. Expanding space cannot increase the wavelength. Expanding space cannot alter the distances between gravitationally bound galaxies.
- 80. The redshift of light from a star is due to the negative density gradient of the medium along the

path. There is a large negative density gradient near a star resulting in a redshift.

- 81. The increasing redshift is a result of the increase of the density of the medium surrounding the stars due to the accumulation of ejected materials from the stars with time.
- 82. Clocks are engineered devices to break down the time that is already defined as a day or year into finer intervals. Clocks do not determine time. The mechanism of a clock depends on its speed. The mechanism of a clock also depends on gravity as a chunk of mass. It is the mechanism of a clock that depends on the speed and gravity, not the time itself. A clock only displays correct time if the clock is synchronized to the day or the year. The day or the year is not determined by the clocks. How long we live is not determined by the clocks we engineer.
- 83. The dependence of a measuring device on its speed and gravity cannot be forced onto what is being measured by the device. The mass of an object does not depend on its speed. Massis not relative.
- 84. Propagation of light is not relative. Maxwell equations for propagation of light cannot be transformed onto inertial frames.
- 85. Lorentz-Einstein Physics is a result of a mathematical and conceptual blunder.
- 86. Gravity cannot redshift or blueshift the frequency of light. Gravity has no effect on light in a vacuum.
- 87. Gravity generates a density gradient in the medium and the density gradient of the medium diffracts light.
- 88. Light is redshifted or blueshifted by gravity only in the presence of a medium. Frequency is unaffected by gravity.
- 89. Polarization of light is Unipolar. Spin is Bipolar. Polarization of light cannot simulate Spin of a particle. Light has no Spin. A magnetic field is not a Spin. Spin Magnetic Moment is static. Hypothetical photons have no Spin.
- 90. Whole of Modern Physics falls apart when Special Relativity is invalid. Special Relativity is both a mathematical and conceptual blunder.
- 91. All the particles that have been discovered by colliding particles in particle accelerators are bogus; they have no real existence. A particle has no relativistic energy. The life times of particles obtained by the Heisenberg Uncertainty Principle are not real. Heisenberg's Uncertainty Principle is invalid. The precision of momentum is directly related to the precision of position, not inversely, p=m∂x/∂t.
- 92. Observers cannot alter reality. Reality is not relative.
- 93. Propagation of light at constant speed relative to observers does not require Special Relativity.
- 94. There is no antimatter. Antimatter is a result of Anderson's misinterpretation of the cloud chamber experiment. Non-equal spiral pairs cannot be the path of electron-positron pairs of equal masses.
- 95. Space warping is voodoo Physics. Quantum

Mechanics is voodoo physics. Expanding Universe is voodoo Physics. Voodoo Physics has no place in science. Physicists do voodoo Physics because they are paid to do it; it is their bread and broccoli.

- 96. Physics is a job done according to the job specification to keep the job; it is not science.
- 97. Energy of an object of mass has nothing to do with the speed of light. Speed of light cannot limit the speed of an object of mass.

A train does not derail relative to observers. A vertical arrow does not tilt relative to observers. A beam of light does not tilt relative to observers. The path of light is unaltered relative to observers [15]. Lorentz Transform cannot Transform Maxwell equations onto inertial frames [16]. What the Lorentz Transform transforms is the trivial solution to the Maxwell equations, the static electric and magnetic fields, not the propagation of light [17]. The Lorentz Transform is not unique [4]. Lorentz Transform has no existence. Time is not relative. Mass is not relative. Gravity and acceleration are not the same. Einstein's Equivalence Principle is false. Special Relativity and General Relativity are false. A particle cannot behave as a wave and hence the Schrodinger equation is false. The position and momentum are not a Fourier Transform pair and hence the Heisenberg Uncertainty Principle is false. If the Position Operator is the position itself, a particle cannot be assumed to behave as a wave. If a particle is assumed to behave as a wave, the Position Operator cannot be the position itself. The position and momentum are simultaneously measurable. The precision of momentum is directly related to the precision of position since the momentum is the rate of change of position. Nothing in nature can come in guanta since guantum has no means of carrying the identity information. Light is not particles. Particles are not waves. Light has no momentum. Universe is not expanding. Space cannot expand. Space and time are mutually independent. Special Relativity and Quantum Mechanics are both mathematically and conceptually false. Modern Physics has turned Physics into voodoo Physics. Voodoo Physics has no place in science. Modern Physics requires a complete overhaul.

XXXIII. EVEN IF LIGHT IS ASSUMED TO CONSIST OF PHOTONS OR LIGHT QUANTA, PHOTONS CANNOT HAVE MASS

When Planck made the false conjecture that the energy comes in quanta e=hf, Einstein claimed that the light also consists of photons or light quanta of energy e=hf. Using Einstein's false relationship $e=mc^2$, physicists went one step further and claimed that a photon has a mass hf/c².

There are infinitely many frequencies between any two frequencies in a continuous Spectrum and hence a beam of light of any bandwidth of continuous spectrum will contain infinitely many frequencies and hence infinitely many photons of energy e=hf. It does not matter how small the e is, infinitely many quantities will be infinite. If light is assumed to consist of light quanta of energy e=hf and a mass of hf/c^2 , then the mass of the light beam will be infinite. As a result, if hypothetical photons have mass hf/c^2 , then you will be knocked down by a heavy punch that is incomparable and you will remain kissing the ground if photons have mass.

Photons cannot have momentum. Photons cannot have mass. Photons cannot have kinetic energy. The massless Photons cannot collide with matter. Interaction of light is not a momenta collision. Interaction of light with a mass is not a momentum transfer. Light has no interaction with electrically neutral particles. Light generates momentum on charge particles. Light is a momentum generator. Momentum of a charge particle is not conserved in the presence of light. Light cannot be assumed to consist of light quanta or photons. Light cannot consist of particles. Light is a wave, not particles.

Einstein's photon derivation is incorrect [8,19]. Einstein derived photons by applying Boltzmann entropy to light. Light in a vacuum has no entropy. Boltzmann entropy is meaningless for photons. Einstein's derivation is only for high frequencies. He took advantage of the peculiar form of the Wien Blackbody Spectrum. Einstein's photon derivation does not apply to the blackbody spectrum for low frequencies. Einstein's photon derivation does not apply for the blackbody spectrum for the entire range of frequencies. Einstein's assumed light comes in particles and the spatial distribution of the particle is random in a given volume. A coherent beam of light cannot consist of spatially random particles or photons. Einstein's photon derivation is meaningless.

Light cannot consist of light quanta or photons. Particles cannot propagate. Nothing can come in quanta without means to carry belonging information. Energy, which is the kinetic energy, has no existence without mass. Frequency has no existence without amplitude. Energy cannot be quantized as energy quanta e=hf.

Frequency Spectrum cannot be continuous if e=hf. Planck constant h has no existence. Frequency, which is the number of cycles per second, has no energy. For energy to solely depend on frequency, frequency must have an independent existence. Frequency has no independent existence. Frequency has no existence without amplitude.

The relationship e=hf represents the energy of a cycle of an oscillating particle of mass m. The proportionality constant h is not a universal constant. The h in the e=hf depends on the mass of the oscillating object and the amplitude of the oscillation [19].

XXXIV. HUBBLE'S BLUNDER; UNIVERSE IS NOT EXPANDING v≠Hd

Around 1912, Vestro Slipher found that the light from distant stars had a redshift. Around 1929, Edwin Hubble conjectured that the redshift of a star in a galaxy is a result of the radial motion of the galaxy. Hubble observed the redshift of a star in a galaxy and also estimated the distance to the galaxy and obtained (redshift, distance) pairs for several galaxies. Hubble plotted the redshift against the distance and found the points to be somewhat scattered with some observable linearity. So, he used a Least Squares fit to represent the data point as a linear relationship v=Hd, where v is the radial speed of a galaxy and d is the distance to the galaxy. Today, the constant H is known as the Hubble constant. If you have seen Hubble's v against d plot, you see that the points are scattered with a somewhat distant linear approximation with high standard deviation.

Hubble falsely interpreted the redshift of a star as a Doppler effect due to the radial motion of the galaxy. Then, he argued that the universe must be expanding for the galaxies to have a radial speed. Physicists used various examples to explain how the expanding universe gives rise to radial motion of galaxies. They used rising raisin bread dough as an example. They also placed all the stars in a balloon and blew it to demonstrate how galaxies are moving away with a speed relative to the distance with the expansion of the universe. However, all these explanations are flawed.

The redshift of a distant star is real. However, the redshift of a star cannot be attributed to a Dopper effect. The redshift of a star in a galaxy cannot be attributed to a radial motion of the galaxy. If a galaxy has a radial speed and the redshift of a star in the galaxy is a result of the radial motion of the galaxy, all the stars in the galaxy must have the same redshift. You cannot claim that the redshift of a star in a galaxy is a result of a radial motion of the galaxy unless all the billions of stars in the galaxy have the same redshift. The redshift of a star cannot be attributed to galactic motion. The redshift of a star cannot be attributed to the Doppler effect. Hubble's relationship v=Hd cannot hold. So-called Hubble's Law or v=Hd is result of experimental misinterpretation, an а experimental blunder [12], v≠Hd.

Hubble's Law v=Hd is meaningless; it is not a natural law. Hubble's equation v=Hd describes an open loop system, an unstable system, a catastrophic system. Open loop system cannot be a natural law. Natural laws describe closed loop systems. An expansion requires a force. Space does not respond to a force. The massless has no energy. Space has no energy. The particles of matter that occupy space have energy. Space has no entropy. The particles of mass that occupy the space have entropy. Space has no heat or temperature. The particles of mass that occupy space bring heat or temperature, which is the kinetic energy of particles of mass. Light has no momentum, no energy, no heat, no temperature. If light were particles of momentum, empty space would not have been freezing cold. A few degrees Kelvin temperature in space is a result of sparsely distributed particles of mass. The cosmic background of space is due to the electromagnetic waves resulting from the oscillation of sparsely distributed charge particles in space. Cosmic Microwave Background is not some leftover from a hypothetical bigbang. The snow on an

old off-tuned Television Set is not some remnant from a hypothetical Bigbang. Bignbang is a mythical fairytail, not real. Einstein's Special Relativity and General Relativity are a result of mathematical and conceptual blunders and the concept of bigbang is hypothetical, not real. Bigbang is a fairy tail. Space cannot expand and/or contract. Only the matter can expand and contract. Only the matter responds to an external force. Space does not respond to a force. Light does not respond to a force. Light does not interact with matter without electrons or charged particles. Light has no effect on electrically neutral particles. Light is useless without charge particles. The momentum is not conserved in the presence of light. The massless does not respond to force. expanding space is incomprehensible.

The momentum of a closed system is not conserved in the presence of light. Although light has no momentum, light generates momentum on charge particles. The generation of a light burst by an atom does not result in the mass loss or momentum loss of the atom. The mass of a particle is speed independent. Mass is conserved. Mass cannot be converted to energy, which is kinetic energy, since energy has no existence without mass. Mass and energy are not equivalent. Energy means kinetic energy of particles of mass. There is n o light without mass. There is no massless expansion, no massless heat, no massless momentum, no massless temperature, no massless entropy. Light has no mass. There will be no light without mass.Mass cannot be created or destroyed. Atomic energy released in nuclear fission is not a result of a mass loss. Light is not relative. Einstein's Special Relativity is a mathematical and conceptual blunder, e≠mc² [15,16,17,4,13].

Even if the galaxies have a radial speed, the motion of galaxies cannot be attributed to a universe expansion. Galaxies are gravitationally bound to each other. Galaxies are not anchored to space. Galaxies themselves are orbiting systems. An expanding universe or expanding space cannot alter the intergalactic distances of gravitationally bound galaxies. It is only the change of mass of galaxies that can alter the distances between galaxies in a gravitationally bound galactic orbiting system. Propagating light cannot be anchored to space. An electromagnetic field with an anchorage cannot propagate. Expanding space cannot stretch the wavelength leading to a redshift since light is not anchored to space. Redshift of light is not a result of an expanding universe. Space cannot expand. Universe cannot expand.

Now the question is that if the redshift of a star is not a result of the Doppler effect, what causes the redshift. The redshift is due to the change of the density of the medium and the change of medium along the path of light from the stars. The speed of light depends on the change of medium. Higher the density of the medium, lower the speed. The speed of light varies for different media. Light from a star passes through different media and different density gradients on its path from star to here. The density gradient is higher near the star. With distance, the density gradient decreases. A light enters the atmosphere of the earth, light passes through an increasing density gradient. However, a star is much more massive than the earth, the medium that surrounds a star has much higher density than the medium that surrounds the earth. As a result, the overall density gradient along the path is negative and the speed of light along the path increases from the star to earth while the frequency remains unaltered. As a result, for frequency to remain unaltered, as the speed of light increases with the decreasing overall density of the medium along the path, wavelength must also increase with the overall decrease of the density of the medium along the path, which is a redshift.

There may be a situation where the intermediate medium between the star and the earth is such that the overall density gradient from the star to the earth is positive. In that case, light undergoes a blueshift. There are rare situations where the medium density is such that the light from a distant star can have a blueshift. However, such situations are rare. As a result the light from distant stars undergoes mostly a redshift. The redshift is a result of the variation of the medium or the medium densities that the light undergoes along the path.

Expanding universe is a result of an experimental blunder. Space cannot expand. Universe is not expanding. Objects of mass are not anchored to space. Propagating light is not anchored to space. Objects of mass are gravitationally anchored to each other. The mutual distances between gravitationally anchored objects of a closed system can only be altered with the change of the masses of objects.

The diffraction of light from a distant star near the sun is a result of the medium that surrounds the sun. The diffraction of light from a star near the sun cannot be attributed to General Relativity. Gravity and acceleration are not the same since there is no acceleration without motion. A falling apple has an acceleration. An apple on a tree has no acceleration. A force on an object does not generate an acceleration unless the object is in motion. Einstein's Equivalence Principle is invalid. Space is not warpable. Even if the space is warpable, the mass of an object cannot warp the space since the mass does not occupy the space. It is the volume of an object of mass that occupies the space. If space is warpable, it must be the volume that must warp the space, not the mass. If space is warpable, and General Relativity holds, it is the volume of an object that determines the gravity, not the mass. How odd would it be if the volume of an object determines gravity! General Relativity is utter nonsense.

It is the medium that surrounds a gravitational object that is warped by gravity creating a densities gradient of the medium, which diffract light near a gravitational object. Gravity has no direct effect on light. Gravity cannot bend light in a vacuum. Gravity has no effect on the massless. Gravity cannot generate a redshift in a vacuum. In the presence of a medium, light approaching a gravitational object undergoes a blueshift and light leaving a gravitational object undergoes a redshift. There will be no redshift or blueshift near a gravitational object in the absence of a medium.

If space is warpable and an object warps space, space will generate a resistance to a moving object and as a result the object will be slowed down. If the space is warpable and an object warps space, perpetual orbiting systems are not possible [12].

The increasing redshift is not a result of accelerated expansion of the universe. The medium density around the stars increases with time due to ejection of more and more material from the star. As a result, the overall density gradient of the medium of the path from a star to the earth increases with time. The increasing overall density gradient of the medium along the path of light from a star to earth increases the redshift of the star. Increasing redshift of a star with time cannot be attributed to an accelerated expansion of the universe. The claim that the universe is expanding at an accelerated rate is an experimental blunder.

Natural systems are closed loop systems. Closed loop systems are stable. Natural systems cannot be open loop systems. Open loop systems are unstable. The false concept of the expanding universe is an open loop system and hence it cannot be real. The accelerated expansion of the universe is an open loop system and it cannot be real. Universe is neither expanding nor accelerating [12].

XXXV. FALSE EXPERIMENTAL CONFIRMATIONS OF PHOTONS ARE A RESULT OF MISTAKES IN PHOTOELECTRIC EXPERIMENTS; WHAT WENT WRONG WITH PHOTOELECTRIC EXPERIMENTS Lemma:

The intensity of a light source at the source is the burst rate of the source. The burst rate is unaltered along the path from source to destination. The intensity of light at a destination depends on both the burst rate and amplitude of light. The amplitude undergoes attenuation along the path.

Lemma:

Light that is subjected to reflection, refraction, and attenuation along its path cannot consist of light quanta or photons. Light is not particles. Einstein's photons have no existence.

Lemma:

If light comes in quanta of energy e=hf, the energy of a continuous spectrum would be infinite. Energy cannot be infinite and hence light cannot come in quanta.

Lemma:

If light comes in quanta or photons, a light quantum or photon will be in limbo at a boundary. Light cannot consist of photons.

Lemma:

A coherent beam of light cannot consist of spatially random light quanta or photons.

Lemma:

Energy cannot come in energy quanta e=hf since frequency has no independent existence.

All the photoelectric experiments and their conclusions are incorrect. If any photoelectric experiment had been conducted properly, they would have realized that light cannot consist of light quanta or photons of energy e=hf. The concept of light quanta or photons is a result of mathematical, conceptual, and experimental blunders. Einstein's theoretical development of photons is wrong in every aspect [8,19,15]. Millikan's photoelectric experiment for the confirmation of Einstein's photon is incomplete since he did not carry out the experiment for varying amplitudes. Millikan's photoelectric experiment photoelectric conclusions are false. Lenard's experiment that Einstein's concept of light quanta or photon based on is incomplete since he did not carry out the experiment for varying amplitudes. Lenard's photoelectric experimental conclusions are false [19].

So far, no photoelectric experiment has been carried out for variable amplitude of light. You cannot vary the amplitude of light by dimming a light source. We cannot control the amplitude of light at the source. Amplitude of light is a constant at the source. At the source, the brightness or the intensity of a source of light is the rate of light burst released by the source. Higher the rate of light bursts released by a source, higher the brightness. By dimming light, what you are controlling is the rate of light burst emitted by a source.

However, as light propagates, light is subjected to attenuation and wavelength shift in the presence of a medium. When light encounters a change of medium, a part of the light burst is reflected at the boundary while the rest enters the medium. As a result, the changing medium reduces the amplitude of light. Light undergoes attenuation or the reduction of the amplitude of light while the burst rate remains unaltered. So, along the path, the intensity of light is determined by both the amplitude and the burst rate.

When light encounters a change of medium, light must have the ability to divide into a reflected part and a transmitted part at the boundary. Light cannot consist of an entity that cannot be divided into a reflected part and a transmitted part. If light consists of light guanta or photons that are not divisible, light will be in a limbo at a boundary. A light quantum is no longer divisible and hence light quantum will be in limbo at a boundary if light consists of photons. There is no demon at a boundary who tosses a coin and determines if a photon should pass through or reflect. What happens to light at a boundary cannot be probabilistic. A burst of light cannot decide randomly whether it will reflect or go through at a boundary. A burst of light cannot make a conscious decision at a boundary. As a result, light cannot consist of photons

or light quanta. A coherent beam or a burst of light cannot consist of spatially random photons. Einstein's photon derivation is invalid. Einstein derived photons, by applying the Boltzmann entropy to light quanta. Photons or light quanta in a vacuum do not have temperature, heat, or entropy. Boltzmann entropy cannot be applied to light. Einstein assumed the position of photons or light guanta in a volume are random. A coherent light beam cannot consist of spatially random photons. If light consists of photons of energy e=hf, the spectrum cannot be continuous. If the spectrum is continuous, light cannot consist of light quanta or photons. If light consists of photons of energy e=hf, the energy of a wave of continuous spectrum of any frequency band will be infinite. As a result, light cannot come in light quanta of energy e=hf. Light does not consist of particles. Light is not particles [8,19].

At a source, by dimming light we can control the rate of light burst released from the source. If we dim the light low enough, we can see the individual light bursts. These light bursts are waves, not particles. These light bursts divide into reflected and transmitted parts at a boundary. In physics textbooks, these light bursts have been misinterpreted as photons or light particles. If you want to call these individual light burst photons, photons are waves, not particles and they are able to be subdivided into transmitted and reflected parts when photons encounter a change of medium. If you want to call the individual light burst released from a source photons, then these photons are waves, not particles and they for maximum and the energy of photons are waves, not particles and the energy of photons are waves.

When Philip Lenard carried out photoelectric experiments, he falsely assumed that he was changing the amplitude of light when he dimmed the light. This is where Philip Lenard's photoelectric experiments went wrong. Philip Lenard did nor carry out photoelectric experiments for different amplitudes of light. That is why he ended up making the false conclusion that the ejection of an electron depends only on the frequency, not the amplitude. This cannot be so since frequency has no existence without amplitude. Photoelectric effect must have both frequency cut-off and amplitude cut-off. Photoelectric experiments must be done for the varying amplitudes also, not just for varying frequencies. However, you cannot change the amplitude by dimming a light source and hence we have to adopt a different mean to change the amplitude.

The only way to change the amplitude is using a partial reflector. We have to place a partial reflector just after the source so that a part of light is reflected and the rest is transmitted and used for the ejection of electrons from atoms. By changing the orientation of the reflector, we can change the amount of light transmitted and hence the amplitude of light that is used for the ejection of electrons. The ejection of electrons must depend on both amplitude and frequency. Einstein's light quanta of energy e=hf cannot explain properly carried out photoelectric experiment. Lenard's experiment that Einstein's photon work depends on is an incomplete experiment. Lenards's photoelectric conclusions are incorrect. Einstein's explanations of Lenard's conclusions are false. Light cannot consist of photons or light quanta. Photons or light quanta are a result of mathematical, conceptual, and experimental blunders [19,13].

When we increase the intensity of a light source, we are increasing the burst rate of the source. As a result, the photon electric current increases with the increase of light intensity. If we reduce the amplitude of light using a partial reflector, there would be an amplitude below which there is no photoelectric current. If we reduce the frequency, there would be a frequency below which there is no photoelectric current. Photoelectric effect has bothe frequency cut-off and amplitude cut-off. The energy of an ejected electron depends on both amplitude and frequency. Both Millikan and Lenard did not find the dependence of the energy of an ejected electron since they did not carry out the experiment for varying amplitude. They thought they were altering the amplitude of light by dimming a light source but they could not be more wrong. You cannot alter the amplitude of light by dimming a light source. It does not matter what the level of the dimmer is, the amplitude of light is unaltered by the dimmer. To carry out a proper photoelectric experiment one has to send the light through a variable partial reflector before light hits the metal plate. Both the amplitude and frequency of light have an effect on the energy of ejected electrons. The ability to eject electrons also depends on both amplitude and frequency. Frequency of light alone cannot determine the ejection of electrons from an atom since frequency has no independent existence; frequency has no existence without amplitude. Amplitude of light must also be a determining factor in the photoelectricity.

Simple oversight in both Lenard's and Millikan's photoelectric experiment falsev substantiated Einstein's false theory of light guanta, theoretical and experimental blunder. Light is not particles. Light cannot come in quanta of energy e=hf. The claim that light consists of particles or photons is simply ridiculous. Light cannot behave as particles at high frequencies and waves at low frequencies. Light is a wave for all frequencies. Light has no means for determining at what critical frequency it is going to be particles. Einstein's photon derivation and photoelectric experiments carried out to substantiate Einstein's theory of photons are wrong. It may take a while for people to accept the fact that light is never particles since people are being taught to consider light as particles or photons in schools just as it is difficult for people to abandon religions since people are taught to follow religions by parents and government institutions. When you pay a tremendous amount of money to universities to learn Special Relativity, photons, and Quantum Mechanics, you are reluctant to accept the fact that they are invalid even if they are proven to be invalid and you are in agreement with the proof that they are invalid. That is the unfortunate situation of Physics today. They do not care how wrong Special Relativity, Photons, Quantum Mechanics are, their jobs or means for earning a living depend on them and hence they are ready to turn a blind eye.

XXXVI. POUND-REBKA EXPERIMENT IS AN EXPERIMENTAL BLUNDER; GRAVITY HAS NO EFFECT ON LIGHT IN A VACUUM Lemma:

Gravity has no effect on light in a vacuum. Gravity has no effect on the massless. Time is unaffected by gravity or speed. Time is absolute. Clocks are relative. Clocks do not determine time. Clocks display what engineers have designed for its mechanism to display.

Lemma:

The Pound-Rebka experiment is an experimental blunder. If the Pound-Rebka experiment had been carried out in a vacuum, there would not have been any redshift or blueshift.

The redshift or blueshift of light near a gravitational object is not a result of gravity affecting light. Gravity has no direct effect on light. Gravity has no effect on the massless. Gravity cannot slow time. Gravity can slow down the clocks since gravity affects the mechanism of clocks. Clocks do not determine time. Clocks measure time. You cannot claim gravity affects time just because you observe that the time indicated by a clock differs in the presence of gravity. You cannot transform the effect of gravity on the mechanism of a clock to the time itself. The effect of gravity on a measuring device cannot be forced onto what is being measured. Time is a definition. We engineer clocks to measure the time we have defined. We define the day or year and design clocks to break down the day or year into finer intervals. The display of a clock cannot alter time itself. If clocks do not display the correct time in the presence of a gravitational object, the problem is in the design of clocks; blame is on the engineers who designed the clock.

Einstein defines the time in Special Relativity as the average of the forward and backward time of a beam of light. A theory based on the average forward and backward time of a beam of light cannot describe real-time systems [15]. Special Relativity does not apply for real-time systems.

When light travels toward a gravitational object, it undergoes blueshift; this has nothing to do with Special Relativity. When light travels toward a gravitational object, it is traveling towards an increasing density gradient of the medium and as a result speed of light decreases and hence the wavelength decreases since the frequency is unaltered resulting in a blueshift. If light travels away from a gravitational object in the presence of a medium, the velocity increases and hence the wavelength increases since the frequency is unaltered resulting in a redshift. Frequency is unaltered since time is unaffected by gravity. There is no blueshift or redshift in the absence of a medium. If the
Pound-Rebka experiment had been done in a vacuum, there would not have been a blueshift or redshift.

Time is not affected by gravity. Clocks are affected by gravity just as any other mass is affected by gravity, as a chunk of mass. Clocks do not determine time; clocks measure time. If your clock does not show the correct time in the presence of gravity or when you are traveling at high speed, then blame the engineers who designed the clock. It is not the time itself that is affected by gravity. It is not the time itself that is affected by speed. It is the mechanism of the clock that is affected by gravity and speed. Any engineering device functions properly for a given specification; it does not work for all the different environmental conditions it is operated on. Specifications are given in the manual. Read the manual. It is moronical to claim time itself is relative just because you find the time on your clock is different when you are traveling at high speed. It is moronical to claim that time is affected by gravity just because your clock does not give the correct time when you climb a mountain. Special Relativity is moronical both mathematically and conceptually. Gravity has no effect on time. Propagation of light is unaffected by gravity in a vacuum. Neither the gravity nor the observers can bend light.

Lemma:

Gravity has no effect on time itself. Speed has no effect on the time itself. Gravity affects a clock as it affects any other mass. The effect of gravity on a clock is not an effect of gravity on the time itself. Clocks do not determine time. Clocks measure time. If clocks do not display the correct time when you are traveling or when you are on a mountain, then, blame the engineer who designed the clocks. You cannot transfer the errors of a measuring device to what is being measured.

XXXVII. ANTIMATTER IS A RESULT OF AN THEORETICAL AND EXPERIMENTAL BLUNDER

As we have seen, Relativity cannot be described by Einstein's Relativity Factor $\gamma = 1/(1-v^2/c^2)^{1/2}$ for a moving frame since it is limited to the direction orthogonal to the direction of motion of the frame. For any other direction, the Relativity Factor depends on the angle to the direction of motion of the frame. Relativity Factor γ cannot be used to claim time is relative and mass is relative. Einstein developed Special Relativity by visualizing a thought experiment where a vertical light burst is fired in a moving frame. He forced γ for the direction of the frame by allowing the average forward and backward length to contract by factor $1/\gamma$ and then claimed that the Relativity Factor γ holds for the entire moving frame for any direction. Einstein's Relativity Factor γ does not apply for the entire frame in any direction. Einstein's Relativity Factor depends on the angle to the direction of motion. it for the entire frame.. If Einstein had considered a beam of light at an angle to the direction of motion of the frame, he should have realized the

blunder. In deriving Relative Time, Einstein also altered the path of light relative to observers. The path of light cannot be altered relative to observers. No physical change can take place relative to observers. A moving arrow cannot tilt relative to observers. A train cannot derail relative to observers. A train cannot derail relative to observers. The path of light cannot be altered relative to observers.

Einstein tried to justify Special Relativity by transferring Maxwell equations for propagation of light onto a moving frame using the Lorentz Transform. The Lorentz Transform with Einstein's Relativity Factor γ as the Transformation Factor or The Lorentz Factor cannot transform Maxwell equations onto inertial frames [16,4]. The Lorentz Transform only transforms the trivial solution to the Maxwell equations. Trivial solution to the Maxwell equations is the static electric and magnetic fields [17]. Special Relativity is both mathematically and conceptually invalid. When Special Relativity is invalid, time is not relative, mass is not relative, light is not relative, and there is no spacetime function and as a result space and time are mutually independent. There is no rest energy. A particle has no relativistic energy. The speed of an object of mass has no speed limit. The speed of propagation of light is the speed limit of the objects of mass in the universe.

When Special Relativity is invalid, its offshoot applications are invalid. The Dirac equation is no longer valid.

The Dirac equation is an outcome of applying Special Relativity to the Schrodinger equation. There is a mathematical symmetry in the Dirac equations. This mathematical symmetry had been used as a hint for the existence of antimatter. However the existence of a mathematical symmetry does not necessarily indicate an existence of it physically. The physical existence of the mathematical symmetry in Dirac equations surfaced when Anderson interpreted two spiral paths in his cloud chamber experiment as the paths of electrons and positrons. However, this is a misinterpretation by Anderson.

In Anderson's cloud camber there appears to be two spirals that spiral in opposite directions. For these spirals to represent electrons and positrons they must spiral at equal rate in opposite directions if they are a result of electrons and positrons since the mass of electrons and the mass of positrons must be equal and they have opposite charges. However, in Anderson's cloud chamber, although the two spirals are in opposite directions, they do not spiral at the same rate; two spirals are guite different. One spiral spirals only a few loops while the other spirals more loops. if they are of the same mass, the spirals must be equal. The two spirals in Anderson's cloud chamber belong to two very different masses. Two spirals represent electron and proton pairs, not electron and positron pairs.

Anderson's cloud chamber experiment cannot confirm the existence of positrons or anti matter. The two spirals are vastly different and cannot be attributed to the particles of the same mass. Two spirals are most likely the paths of an electron and proton pair of different masses rather than an electron positron pair of the same mass. If electron and positron differ only by the sign of the charges they carry (equal and opposite), and they have the same mass, their meeting cannot only neutralize the charges but cannot annihilate the masses.

Einstein's Special Relativity is false. As a result, the Dirac equation is false and has no existence. There is no theoretical backing for antimatter. Anderrson's two spirals are not equal and hence there is no experimental backing for the antimatter. One may claim that the Positron Emission Tomography (PET) justifies the existence of positrons. PET does not use positrons for its imaging; it uses gamma rays. The production of gamma rays in the device has been explained by hypothesizing positrons. Positrons were never observed. Anderson's cloud chamber does not have positron spiral paths. Just because positrons were hypothesized as an intermediate step for the explanation of the production of gamma rays does not mean positrons exist.

There is no relativistic energy since Special Relativity does not hold and no Special Relativity is required for light to have constant speed relative to observers. The relativistic energy e given by $e^{2}=(pc)^{2}+(mc^{2})^{2}$ is false and has no existence. Besides if the relativistic energy of a particle e is given by $e^{2}=(pc)^{2}+(mc^{2})^{2}$, the energy e will not be real. Any discovery made by using $e^2 = (pc)^2 + (mc^2)^2$ is not real. The fundamental particles discovered in particle accelerators using equation $e^2 = (pc)^2 + (mc^2)^2$ are not real. Wrong model cannot give a real result. Special Relativity and relativistic energy $e^2 = (pc)^2 + (mc^2)^2$ that are false and have no existence cannot provide particles that have an existence. Particle accelerators based on relativistic energy $e^2 = (pc)^2 + (mc^2)^2$ given by Special Relativity cannot provide real particles.All the particles that had been discovered in particle accelerators based on Special Relativity and relativistic energy are bogus. You cannot discover fundamental particles of nature by using Relativistic Energy from Special Relativity; Special Relativity is false and there is no relativistic energy. You cannot discover fundamental particles of nature by colliding charge particles. There are no antiparticles. Antiparticles are hypothetical and exist in physicists' imaginations, not in reality.

XXXVIII. CONCLUSIONS

Quantum without an identifier is nonsense. Nothing in nature can come in quanta. Planck's energy quantum e=hf with universal constant h is meaningless since frequency has no existence without amplitude. It is the energy per cycle of an oscillating mass at frequency f that is given by e=hf, where h is a function of the mass and the amplitude of oscillation. The relationship e=hf is meaningless for light; it does not apply for light. Einstein's proton or light quanta derivation is invalid. Boltzmann entropy cannot be applied to light. Coherent light that travels on a deterministic path cannot be assumed to be spatially random in a volume. Frequency has no energy. Einstein's Special Relativity is invalid. Observers cannot derail light. Galileo Relativity is incorrect. Observers cannot derail a train. Propagation of light is not relative. Light does not tilt relative to observers. Cars do not end up in ditches relative to observers. It is the path of a moving entity that shifts against the motion of an observer while the path, speed, and direction of the moving entity remain unaltered relative to observers. Maxwell equations cannot be transformed onto inertial frames. Velocity of light is independent of observers. Velocity of a train is independent of observers. Observers cannot bend light. Gravity cannot bend light. Gravity cannot slow down time. Time is independent of observers. Time is independent of speed. You cannot claim that time is relative by taking a clock in an airplane around the world. You cannot claim time depends on gravity by taking a clock onto a mountain. It is the mechanism of a clock that depends on the speed and gravity, not the time itself. There is no entity called time until we define time. Time is a definition. Clocks do not determine time. Measuring device gives the correct measurement if and only if the measuring instrument in an environment that meets the design is specifications. Read the manual before using a measuring device. Time is independent of gravity. Gravity cannot shift the frequency of light. Gravity cannot generate a redshift or blueshift of wavelength of light in the absence of a medium, in a vacuum. If the Pound-Rebka experiment had been carried out in a vacuum, there would not have been a redshift or blueshift. Frequency has no energy. Gravity and acceleration are not the same. An apple on a tree has no acceleration. A falling apple has acceleration. There is no acceleration without motion. Einstein's Equivalence Principle is invalid. Einstein's General Relativity is false. Arthur Ellignton misinterpreted the solar eclipse data either knowingly or unknowingly to falsely validate Einstein's General Relativity; it is either an experimental blunder or experimental deception. Mass cannot warp space. Mass warps a medium generating density gradient. A density gradient in a medium bend light. Gravity has no effect on the massless. Gravity has no effect on light. Space is not warpable. Particles are not waves. Waves are not particles. A particle with constant momentum cannot be assumed to have the position and momentum that behave as a wave. If the position and momentum of a particle is assumed to behave as a wave, the Position Operator cannot be the position itself. The Position and Momentum Operators in Quantum Mechanics are contradictory. If the position and momentum of a particle are assumed to behave as a wave, the Position and Momentum Operators commute. If the Position Operator is the position itself, the eigenspace is not unique, and the eigenspace of the Momentum Operator is also an eigenspace of the Position Operator. The position and momentum are simultaneously measurable. The precision of momentum is directly related to the precision of the position since the momentum is directly related to the

rate of change of position. The precision of momentum cannot be inversely related to the precision of position. The position and momentum of a particle cannot be a Fourier Transform pair. Heisenberg's Uncertainty Principle is invalid. The position and momentum cannot behave as a wave and e≠hf, and hence the Schrodinger equation is invalid. There are no photons. There are no gravitons. Light cannot be particles. Light has no momentum. has no mass. Light has no energy. Liaht Electromagnetic potential energy of light is not energy unless it is converted to kinetic energy of charge particles. Light has no effect on electrically neutral particles. The interaction of light with matter is through charge particles or electrons. Light oscillates electrons; that is how light gives us warmth. The interaction of light with matter is not a collision of momenta since light has no momentum. There is no radiation pressure in a vacuum. Light is a momentum generator on charge particles. The momentum of a charge particle is not conserved in the presence of light even though light has no momentum. The momentum of an electrically neutral particle is conserved in the presence of light. The energy of a charge particle is not conserved in the presence of light even though light has no energy. The energy of an electrically neutral particle is conserved in the presence of light. If light has momentum and energy, there is no reason for outer space to be cold. Cosmic Microwave Background (CMB) is a result of the collision and oscillation of sparse charge particles in space; CMB is not a remnant of a hypothetical bigbang. Bigbang is a big nonsense. Gravity cannot be particles. Gravitational waves are bogus. Discovery of new particles in particle accelerators are bogus; they are not real. The position and momentum of a particle must be unique irrespective of the size or mass. Universe is 3D. Time is not relative. Mass is not relative. The mass of an object is a fundamental parameter of matter. Mass is conserved. There is no massless energy. Mass cannot be converted to energy. The energy released from the split of nuclei cannot cause a reduction in mass. The release of electromagnetic radiation due to the splitting of nuclei cannot result in a reduction of mass. Einstein's e=mc² is meaningless since no mass can have speed c relative to light. Light is not relative. An entity that has no standstill existence cannot be relative. A stationary mass cannot have a speed relative to an entity that has no standstill existence. An entity that has no standstill existence cannot have momentum. Light that has no standstill existence has no momentum. The dependence of a measuring device in its environment cannot be forced onto what is being measured. It is a measuring device that depends on the speed and gravity, not what is being measured. Space and time are mutually independent. There is no spacetime function. A moving body does not contract relative to observers. Universe is not expanding. There is no Dark Matter. There is no Dark Energy. There is no Antimatter. A particle of mass cannot be at multiple places simultaneously. An electron cannot disappear

from one orbit and reappear in another. The Bohr model of Atom is voodoo physics. Matrices cannot be Operators of Observables in Quantum Mechanics. Pauli's 2D Spin Operators cannot exist. Energy cannot be quantized. Angular momentum cannot be quantized. Vectors cannot be quantized. Spin cannot come in quanta. Nothing in nature is probabilistic. Photoelectric effect has both frequency cut-off and amplitude cut-off. The amplitude of light cannot be altered by dimming a light source. The dimming of a light source alters the rate of light burst released from a source, not the amplitude. Lenard's and Millikan's photoelectric experiments and conclusions are invalid. Lorentz-Einstein Physics is a result of mathematical and conceptual blunder. If you want to see the mockery of Special Relativity, all you have to do is consider a beam of light at an angle to the direction motion of a train. Clocks do not determine time. An engineered measuring device cannot determine what is being measured. Clocks cannot determine our age. Global Positioning System (GPS) has nothing to do with Einstein's Special Relativity or its preposterous relative time. There is no relativistic energy. Fundamental particles of nature that have been discovered in Particle Accelerators by using Relativistic energy of a particle in Special Relativity are not real particles since Special Relativity is false and there is no relativistic energy. The discoveries of LHC and LIGO are bogus. Fundamental particles of nature cannot be obtained by colliding charge particles. LHC and LIGO are billion Dollar blunders. Gravitational waves are fantasy waves. Gravity cannot be a wave. A particle cannot go through two slits simultaneously. A person who says a particle of mass goes through two slits simultaneously cannot be a scientist. There is no negative energy. There cannot matter-antimatter or electron-positron pairs be popping up in space. There are no positrons. Hubble's law is bogus, an experimental blunder. You cannot discover natural laws using a least squares fit. Redshift of a star cannot be attributed to a radial motion of galaxies. If there is a radial motion of galaxies, all the stars in a galaxy must have the same redshift. Radial motion of galaxies cannot be attributed to a universe expansion. Expanding space cannot alter the intergalactic distances between gravitationally bound galaxies. There is no Hubble constant. Space cannot expand or contract. Universe is not a result of a Bigbang. Visible universe is a moving horizon. The range of the visible universe is determined by the wavelength shift or redshift of light along the path due to the density variation of the medium. Polarization of light is not the same as Spin. Polarization is Unipolar. Spin is Bipolar. Bipolar Spin cannot be represented by Unipolar Polarization. Horizontal and Vertical Polarization of light cannot be used to simulate Spin of a particle. Spin Magnetic Moment is static. Propagating magnetic field is not a Spin of a photon. Light has no Spin. Light comes in wave bursts. You can vary the number of light bursts released by a source by dimming light. If you dim the light low enough, you will be able to see the individual

light bursts. These light bursts are waves. These wave bursts are not light quanta or photons. Light particle is an oxymoron. There are no massless particles. Waves are not particles. Particles of mass are not waves. There is no wave-particle duality. Frequency has no energy. Frequency has no independent existence. Modern Physics is a Boondoggle. Physicists do not have to worry about searching for a way to determine the dimensions of the universe. Nature did not leave the determination of the dimension of the universe to physicists for obvious reasons. You cannot leave such an important task for people who claim preposterous claims such as time is relative, mass is relative, propagation of light is relative, observers can bend light, particles are waves, waves are particles, universe is expanding, gravity can bend light, gravity is a wave, gravity can slow time, speed can slow time, energy comes in guanta e=hf, dimming light changes the amplitude of light, and a particle of mass can be in multiple places simultaneously and many many more nonsensical claims. The reality no longer matters to Physicists. They can make any outlandish voodoo claim and say that is the way it is. Physics is a job, not science anymore. Their aim is to protect the job. You won't get paid for proving Special Relativity is nonsense. You are paid to carry out what is in the job description. To keep LHC running, they have to show they are finding new particles. If you guestion, you will not be working there. Those discovered particles are real when Special Relativity is a mathematical blunder and there is no relativistic energy. To keep LIGO running, they have to show that they are detecting gravitational waves. If you question, you will not be working there. How can gravity be a wave, when General Relativity is nonsense. If space is warpable, it is the volume that warps space, not the mass. If mass warps space, there will not be orbiting systems. Gravity cannot be a wave. If gravity is a wave, orbiting systems are not possible. Gravitational waves are fantasy waves. Every living species is equipped with a detector for determining the dimensions of the universe. The device for determining the dimension of the universe is in our ears. If you want to know the dimension of the universe, you do not have to assume, just get your ears checked. Universe is 3D. Universe is neither expanding nor accelerating. The redshift of a star is due the negative density gradient of the medium along the path of light. The increasing redshift of light from a star is a result of the increase of the density of the medium due to the accumulation of the ejected material from the stars with time. Any variation of the density gradient of the medium along the path of light with time results in a variation of the redshift with time.

The intensity of a light source is determined by the rate of light burst of a source. The amplitude of light at a source is a constant. We cannot alter the amplitude of light. Amplitude of light undergoes attenuation along the path. We cannot alter the amplitude to light by dimming a light source. By dimming a light source, what we are altering is the rate of light burst released by a source. If we dim a light source low enough, we can reduce the rate of light burst so that we can distinguish the individual light bursts. These light bursts are not particles. The effort to interpret these light bursts as particles is a misinterpretation, pure deception. Light is never particles. Particles cannot propagate. Light cannot come in energy quanta e=hf since frequency has no independent existence. If light consists of photons of energy e=hf, the energy of a spectrum would be infinite since even a continuous band limited spectrum consists of infinite frequencies. Light cannot be quantized. Milikan's and Lenard's photoelectric experiment conclusions are false since they did not carry out the experiments for varying amplitudes of light.

Up or Down Spin cannot have x, y, and z axes components that are Up or Down. Up or Down Spin in any direction cannot be decomposed into Up or Down Spins on x, y, z axes. The components of a Spin as Up or Down on x, y, z axes have no independent existence physically, and hence the representation of the x, y, z components of a Spin by independent Matrix Operators has no physical meaning. Pauli's Spin Matrix Operators have no existence. A Spin Operator with Up or Down x, y, and z independent Spin Operator components is not an Operator of an Observable. A Spin Operator having Pauli's 2D Matrix Spin Operators as x, y, and z components has no eigenvalue representation and hence not an Operator of Observables. The orthogonal axes components x, y, and z of a Spin cannot be represented by independent Up and Down Operators or Pauli's Spin Matrix Operators. Matrix Operators cannot be in Quantum Mechanics. Matrix Operators of finite dimension cannot satisfy the non-commutative relationship that is fundamental to Quantum Mechanics. Matrix Operators of infinite dimension have no eigenvalue representation and hence cannot be in Quantum Mechanics.

Einstein's Special Relativity and General Relativity are both mathematically, logically, and conceptually invalid and meaningless. Time is not relative. Time cannot depend on speed. The mass of an object is not relative. If the mass is relative, the energy will not be real. The mass of an object cannot depend on its speed. Time and mass are absolute. Time is a definition. Mass is a fundamental property of a particle or an object. Momentum and gravity depend on the mass. The mass does not depend on the speed, momentum, or gravity. Propagation of light is not relative. Maxwell equations for propagation of light cannot be transformed onto inertial frames. Light has no mass, no momentum, no kinetic energy, no entropy, no temperature, no heat. Light is useless without charge particles. There is no light without charge particles, without matter. Light is a wave, not particles. Light does not consist of light quanta, particles or photons. Light bursts are not particles. Light has no mass. Frequency of light has no energy unless frequency is converted to kinetic energy of charge particles. Gravity is not the same as acceleration. Gravity cannot bend light in a vacuum. A train does not derail relative to observers. The path of a moving entity cannot be altered relative to observers. Light cannot bend relative to observers. No physical alteration can take place relative to observers. The motion of a mass is relative. Propagation of light is not relative. And hence, the Laws of Physics are observer independent naturally. No Special Relativity is required.

Einstein started Special Relativity with the belief that the Galileo Relativity is correct. The Galileo Relativity is incorrect. The problem with relativity lies in the Galileo Relativity. The path of a moving object cannot be altered relative to observers. Trains do not derail relative to observers. A burst of light cannot tilt relative to observers. The Galileo Relativity derails a train relative to observers. Taking the false Galileo Relativity as the foundation, Einstein derailed light under the false assumption that light is relative and behaved as golf balls. Path of light cannot be altered relative to observers, inside a train or outside a train. The Galileo Relativity can be amended by taking into account that the path of a moving entity is unaltered relative to observers. Einstein Relativity is unnecessary since the speed of any entity on its path is observer independent naturally. The path of a moving entity is displaced against the motion of observers relative to observers. The shift of the path of a moving entity against the motion of observers relative to observers does not alter the path.

Spin is bipolar. Polarization is unipolar. Polarization is not Spin. A Bipolar Spin cannot have unipolar Up and Down. Spin cannot come in Spin-Up and Spin-Down Quanta. Polarization of light cannot be used to simulate Spin of Atoms or charge particles. Stern-Gerlach Device can neither set the Spin of a particle permanently nor measure the Spin of a particle. You cannot measure the component of the Spin on the x, y, or z axis using Stern-Gerlach Device. It is the whole Spin that orients with an external magnetic field, not a component of it in the direction of the external magnetic field. Stern-Gerlach Device is useless. Stern-Gerlach experiment only reveals that an Atom has a Spin Magnetic Moment and the neighboring Atoms in a beam of Atoms are magnetically coupled, nothing more. Stern-Gerlach Device does not respond to a beam of neutral particles with a spin. A particle has no spin unless it is a particle that has been ejected from an orbiting system. Spin is a property of an orbiting system, not a fundamental property of a particle. If an Operator contains Pauli's 2D Spin Matrices as its x, y, and z components, the Operator is no longer a Hermitian symmetric and has no eigenvalue representation, and cannot represent an Operator of an observable. The direction of Spin that only has an existence relative to observers cannot be a property of a particle.

Particles are not waves. Waves are not particles. There are no photons, light quanta, or light particles. If a particle is assumed to behave as a wave, the Position Operator cannot be defined as the position itself. If the Position Operator of a particle is chosen to be the position itself, the particle cannot behave as a wave. Matrices cannot represent Operators of observables in Quantum Mechanics. The Schrodinger equation has no existence since a particle cannot behave as a wave and e≠hf. Planck's Spectrum is invalid, cavity dependent. Planck constant does not exist. Frequency has no energy. Frequency has no existence without amplitude. The change of position or the existence of momentum of a particle cannot take place without the passing of time. The position and momentum of a particle cannot be a Fourier Transform pair and hence Heisenbrg's Uncertainty Principle is invalid. Antimatter is a result of Anderson's misinterpretation of the Cloud Chamber Experiment. There is no antimatter. There are no positrons. Mathematical symmetry does not demand physical symmetry.

The position and momentum of an electron in an Atom cannot be uncertain. Uncertainty of position and momentum of a charge particle breeds radiation. Orbiting electrons in an Atom cannot radiate since there is no motion along the centrifugal force. Electrons on circular orbits in an Atom are stable. Orbits of an electron cannot come in quanta. Neil Bohr's orbit quantization is meaningless. Space cannot come in quanta. For an electron to change an orbit, an electron cannot perform an act of disappearing from one orbit and reappearing in another orbit; an electron is not Houdini. Bohr's Atomic model is nonsensical, voodoo physics.

If a redshift of a star in a galaxy is due to the radial motion of the galaxy, all the stars in the galaxy must have the same redshift. Expanding space cannot alter the intergalactic distances between gravitationally bound galaxies. Space cannot expand or contract. Universe cannot expand. Expanding space is a result of Hubble's observation misinterpretation. There is no Hubble constant. Bigbang is not possible. The Dark Matter is a result of the underestimation of star orbiting systems. Dark energy is not required since the universe cannot expand. There is no Dark Matter or Dark Energy. Redshift of a star in a galaxy cannot be attributed to a radial motion of the galaxy. You cannot place galaxies on the surface of a balloon and blow the balloon to justify the false concept of universe expansion. Expanding space cannot move gravitationally bound galaxies. Galaxies themselves must be orbiting systems for them to remain as independent galaxies.

The energy cannot be quantized as e=hf since frequency has no independent existence. The energy, which is the kinetic energy, has no existence without mass. If energy is quantized, the spectrum cannot be continuous. If the spectrum is continuous and the energy is quantized as e=hf, the total energy of a continuous spectrum of any bandwidth will be infinite. If light consists of photons or light quanta of energy e=hf, the energy of a beam of light of any continuous bandwidth bandwidth will be infinite. If a photon has a mass hf/c², then, the mass of a light beam of any bandwidth will be infinite. You cannot create mass just by dividing the energy e by c². A mass has nothing to do with speed of light unless a mass is traveling at speed of light. Speed of light is not a speed limit of a mass. Universe has no speed limit.

Mass cannot be converted to energy. Mass is conserved. Mass and energy cannot be equivalent since energy has no existence without mass. There is no massless energy, no massless entropy, no massless temperature, no massless momentum. Energy is the kinetic energy of particles of mass. The massless cannot be particles. Massless light cannot be particles. Light cannot consist of hypothetical photons or light quanta, e≠hf. Energy cannot be quantized, e≠hf. Light has no energy. Electromagnetic potential energy is not energy unless it is converted to the kinetic energy of charge particles. Frequency has no energy unless frequency is converted to energy of a particle. Frequency has no existence without amplitude. So, energy cannot be a function of amplitude alone. Planck's conjecture e=hf is invalid and meaningless. Einstein's photons of energy e=hf is invalid and meaningless. If e=hf, frequency spectrum cannot be continuous and vice versa. Light is not particles. Particles are not waves. A particle wave is an oxymoron, voodoo physics.

If the momentum of an electron is p, then the wavelength of electromagnetic waves generated at the stop of the electron is given by $\lambda = \eta/p$, where η is the radiation parameter, which is not Planck's constant h. The radiation parameter can be obtained by using the Double-Slit experiment for a beam of electrons. What is observed in the Double-Slit experiment is not the interference pattern of particle waves. What is observed in the Double-Slit experiment is interference pattern of electromagnetic waves due to the stopping of a beam of electrons at the Double-Slit barrier. This wavelength is not a particle wave. This does not apply to the momentum p of any mass m. The electromagnetic wave generated at the stopping of an electron $\lambda = \eta/p$ applies to electrons only. This is not the de Broglie wavelength. There are no de Broglie waves or a de Broglie wavelength of particle waves. A particle wave is an oxymoron.

The discovery of particles in particle accelerators such as LHC depends on a single equation, Einstein's relativistic energy of a particle $e^2 = (pc)^2 + (mc^2)^2$, which is based on the false assumption that mass is relative. Light is not relative. Light has no momentum. The massless has no momentum. Entities such as light that have no standstill existence have no momentum. If it has momentum, it must be stoppable. Light is not stoppable. The path of light cannot be altered relative to observers. Time is not relative. Mass is not relative, $m' \neq \gamma m$. Mass is a fundamental property of a particle of matter and it is speed independent. Mass cannot vary with speed. Mass cannot be converted to energy since energy is the kinetic energy of particles of mass and there is no massless energy. As a result, Einstein's relativistic energy of a particle is false, $e^{2} \neq (pc)^{2} + (mc^{2})^{2}$. If Einstein's Relativistic Energy of a particle holds, the energy will not be real and not unique. A rest mass has no kinetic energy, $e\neq mc^2$. Einstein's Special Relativity is both mathematically and conceptually false and no Special Relativity is

required for the speed of light to remain independent of all observers. The path of light is unaltered relative to observers and hence speed of light on its path is unaltered relative to observers. The claim that the fundamental particles of nature have been found by colliding particles in high energy particle accelerators is deceptive and false. Fundamental particles of nature cannot be obtained by colliding charge particles. Any discovery based on Special Relativity cannot hold since Special Relativity is false. If the measured mass appears to depend on its speed, it is because the measuring device is speed dependent. You cannot force the speed dependence of a measuring device onto the mass itself and make the false claim that the mass depends on speed. Mass is speed independent. Nothing physical can alter relative to observers. Observers cannot tilt a moving arrow. Observers cannot bend light. Observers cannot derail trains. Observers cannot alter mass. Mass is observer independent. Nature does not depend on observers. Special Relativity and General Relativity are not science.

Anderon' cloud chamber experiment is an experimental misinterpretation. Two spirals that spiral at two vastly different rates in Anderson's cloud chamber cannot be attributed to an electron positron pair of the same mass. Two spirals belong to two particles of different masses of opposite charges and most likely represent an electron proton pair, not an electron positron pair. The Dirac equation is invalid since Special Relativity is invalid. There is no antimatter. Antimatter does not come into existence just because antimatter has been hypothesized as an intermediate step for description of certain radioactive decays. A particle does not have relativistic energy and hence the claim that the fundamental particles of nature had been discovered by colliding particles at particle accelerators is false. They did not discover fundamental particles of nature by colliding particles in accelerators. Einstein's Relativistic Energy does not exist. The mass of an object is not relative. The fundamental particles of nature cannot be obtained using invalid Relativistic Energy from invalid Special Relativity. The split of the nucleus cannot result in a mass loss. Mass must be conserved. Mass cannot be converted to energy. Atomic bomb has nothing to do with Special Relativity and its equations. Atomic bomb is not a conversion of mass into energy. Energy has no existence without mass. There is no mass loss in the splitting of atom.s. The release of electromagnetic radiation as a result of splitting of an atom does not result in a mass loss, e≠mc². Mass in a closed system is conserved. Generation of electromagnetic waves does not cause a mass loss. Electromagnetic waves cannot be converted to mass. You cannot generate mass by dividing hf by c^2 . Energy e=hf is simply ridiculous since f has no independent existence; h has no existence without amplitude.

Modern Physics is mathematically bogus. Experimental misinterpretations cannot validate bogus theories. Gravity cannot be a wave. Higgs particles have no existence. Gravity is not a wave. Gravitons have no existence. LIGO is a fantasy wave detector. The fundamental particles of nature cannot be obtained by colliding charge particles. Large Hadron collider is useless and can be used to prove anything you want, the 8th ball for fraudulent science. The Quantum Bits based on the polarizations of light are Optical Bits; they have nothing to do with Spin or Quantum Mechanics. Quantum Computers based on the polarization of light are Optical Computers, not Quantum Computers. Nothing in nature can come in quanta. Anything with a belonging cannot come in quanta. Vectors cannot be quantized. Modern Physics requires a complete overhaul. Modern Physics is both mathematically, logically, and conceptually fraudulent; it is a business, not a science:

- Light is not relative. Light does not behave as golf balls.
- Maxwell equations for propagation of light cannot be transformed onto inertial frames.
- Light has no momentum and cannot be assumed to have momentum.
- Particles are not waves and cannot be assumed to behave as waves.
- Light is not particles. Particles are not waves.
- The claim that fundamental particles of nature have been found using the High Energy Particle Accelerators such as LHC is false and deceiving.
- You cannot discover particles of nature by using the Relativistic Energy e²=(pc)²+(mc²)² to analyze the data from particle colliders. Einstein's Relativistic Energy e²≠(pc)²+(mc²)² is false since Special Relativity is false.
- Mass is not relative, m'≠γm. Time is not relative, t'≠γt.
- $e^2 \neq (pc)^2 + (mc^2)^2$.
- If e²=(pc)²+(mc²)², then e=pc+jmc² and e=pc-jmc²; energy in Special Relativity is not real.
- The claim that the fundamental particles of nature as predicted by the Standard Model is deceptive and bogus.
- You cannot change the amplitude of light by dimming a light source. By dimming a light source you are changing the burst rate of a source.
- The path of a moving entity cannot be altered relative to observers.
- It is the path that moves against the motion of observers without altering the path.
- Time is Not Relative, $t' \neq \gamma t$.
- Energy is Not Quantized, e≠hf.
- Photons have No existence, e≠hf.
- Planck's Constant has No existence.
- Photons have No mass, m≠hf/c².
- Particles are Not waves, λ≠h/p.
- A mass has No rest energy, e≠mc².
- Spin Cannot be Quantized as Up and Down.
- Propagation of Light is Not Relative.
- Galilean Relativity is Incorrect.
- Einstein's Special Relativity is Invalid.
- Einstein's General Relativity is Invalid.
- Universe cannot expand.

- Hubble Constant has no existence.
- Galaxies have no radial speed.
- Space cannot expand.
- Expanding space cannot alter the intergalactic distances.
- The Universe is Not Expanding.
- There is no negative energy.
- There are no anti-particles pairs.
- Mass is conserved.
- Mass cannot be converted to energy.
- Light has no energy.
- The massless has no energy.
- Potential energy is not energy unless it is converted to kinetic energy of particles.
- Light has no momentum.
- Light has no mass.
- Light has no entropy.
- Light is useless without charge particles.
- Nothing can come in quanta.
- Quantum without a header is meaningless.
- Nature does not do probability.
- Particles are not waves.
- Position and Momentum of a particle cannot be a wave.
- Position and Momentum are not a Fourier Transform Pair.
- Heisenberg's Uncertainty Principle is invalid.
- The Position Operator cannot be the position itself.
- The observables cannot be represented by eigenvalues of Operators of Observables since Eigenvalues are not unique.
- Matrices cannot represent the Operators of Observables.
- Matrices cannot be in Quantum Mechanics.
- Pauli's Spin Matrices cannot exist.
- If the x, y, and z components of an Operator are represented by Pauli's Spin Operators, the Operator has no eigenvalue representation and hence it is no longer an Operator of an Observables.
- The precision of momentum is directly related to the precision of position not reciprocally.
- Position and momentum are simultaneously measurable.
- Maxwell equations for light are not transformable onto inertial frames.
- Light does not propagate relative to inertial frames.
- The path of light is unaltered relative to observers.
- Reality cannot be altered relative to observers.
- Observers cannot derail trains.
- Observers cannot tilt a moving arrow.
- Observers cannot bend light.
- Gravity cannot bend light in a vacuum.
- Gravity has no effect on light.
- Gravity has no effect on time.
- Time is a definition.
- Clocks do not determine time. Clocks are engineered to break down the time into finer intervals we have already defined as a day.

- The electromagnetic waves generated at the stopping of a moving electron are not particle waves; they are not de Broglie waves.
- Spin Quanta are a result of Stern-Gerlach experimental blunder.
- Particle waves are a result of Double-Slit Experimental Blunder.
- Quantum Mechanics is a Double-Slit Blunder.
- The redshift of light from a star is due to the overall density gradient of the medium along the path.
- The redshift of a star cannot be attributed to a radial motion of a galaxy.
- If galaxies are radially moving away, all the stars in a galaxy must have the same redshift.
- Intergalactic distances between gravitationally bound galaxies cannot be altered even if the space is expanding since galaxies are not anchored to space.
- The visible universe is a moving horizon.
- Observable range of the universe can be increased by using radio frequencies.
- Rest energy is an oxymoron.
- A particle wave is an oxymoron.
- Wave particle is an oxymoron.
- A particle of mass cannot be in multiple places simultaneously.
- The position and momentum of a particle must be unique.
- Gravity cannot be a wave since it has no conjugate partner.
- A single field cannot propagate.
- A single field has no existence without it being anchored to its source.
- Higgs Field cannot be a wave since it has no conjugate partner.
- The Higgs Field that has no Higgs source cannot exist.
- The fundamental particles of nature cannot be obtained by colliding charge particles.
- Waves observed by LIGO are fantasy waves, not gravitational waves.
- The so-called gravitational waves observed by LIGO are a gravitational deception.
- Gravity cannot be a wave. Gravity cannot propagate.
- There are no photons.
- There are no Gravitons.
- Interaction between masses is not an exchange of gravitons.
- Gravitational effect must be present without a time delay.
- If space is warpable and if the space is warped by a mass, orbiting systems are not possible since space will resist the motion. Space is not warpable.
- LHC and LIGO are billion dollar blunders.
- There is no relativistic energy. The fundamental particles you get by analyzing the tracks of particle collisions in LHC are not real.
- You cannot obtain the fundamental particles of nature by colliding charge particles.

- The so-called gravitational waves detected in the LIGO are fantasy waves. Gravity cannot be a wave. There are no gravitational waves. A single field cannot propagate.
- There is no spacetime function since Maxwell equations cannot be transformed onto inertial frames.
- Time is a definition, not a dimension.
- If the universe had been 4D, we would not even be able to stand up.
- Every living species has a mechanism to detect the dimension of the universe, otherwise they would not be able to function. The dimension of the universe is in our ears.
- Universe is 3D.
- Universe is not expanding. Space cannot expand or contract.
- Universe is not accelerating. Space does not interact with a force.
- Light does not interact with a force. A force cannot be applied to light. Light cannot have momentum. If light has momentum, light must be able to be brought to a halt by applying a force or equal and opposite momentum.
- If the age of the universe is given by the inverse of the Hubble's Constant H, then, the age of the universe would be a constant. Age of the universe cannot be constant. Age of the universe is not equal to 1/H. Hubble's Law is a result of an experimental and conceptual blunder.
- There was never a Bigbang. Space cannot expand or contract.
- Time is a moment, not a dimension. Universe is 3D.
- The Universe has no Speed Limit.
- There is no antimatter.
- There are no positrons. Positron is a hypothetical; it is used as an hypothetical intermediate step for explaining radioactive decay of certain isotopes. There are no positrons in Anderson's cloud chamber. Two spirals in Anderson's cloud chamber do not spiral at the same rate; they are different and cannot be attributed to an electron positron pair of the same mass even though they represent opposite charges. Two spirals most likely represent an electron proton pair.
- There is no Antimatter.
- Mathematical symmetry does require the existence of physical symmetry.
- Dirac equations ar invalid since Special Relativity is invalid.
- You cannot prove time is relative and depends on speed by taking a clock around the world. A clock does not determine time.
- You cannot prove time depends on gravity by taking a clock onto a mountain. A clock does not determine time.
- Time is independent of speed and gravity.
- The dependence of a measuring device on gravity and its speed cannot be forced onto time itself.

- Special Relativity based on the average forward and backward time of a beam of light cannot be used for real-time systems. Special Relativity does not apply for oneway time. Real-time systems do not run on average forward and backward time.
- If you want to see the mockery of Special Relativity, consider a beam of light at an angle to the direction of motion of a train.
- Time and mass are absolute.
- Mass is a fundamental property of a particle.
- Mass is speed independent.
- If light consists of light quanta or protons, a single photon will be in limbo at a semi-transparent boundary.
- Mass is conserved.
- Momentum is conserved in a closed system.
- Light is a momentum generator on charge particles.
- Momentum is not conserved if light enters from outside into a closed system.
- There is no Lorentz Force for propagation of light or electromagnetic waves.
- F=q(E+vB) applies only for static fields. It does not apply for propagating fields.
- Hubble's law is false and it is a result of star-redshift misinterpretation. You cannot discover laws of nature by least squares plots.
- Spin is Bipolar. Bipolar spin cannot have unipolar Up and Down quanta.
- Bipolar Spins cannot be simulated using the Polarization of light.
- If a particle is assumed to behave as a wave, the position operator cannot be defined as the position itself.
- Fundamental particles of nature cannot be obtained by colliding charge particles.
- MODERN PHYSICS is a BOONDOGGLE!

New particles that are claimed to be discovered by using relativistic energy in analyzing the tracks left behind by the collision of high speed particles in high-energy particle colliders are not real; they do not exist. There is no relativistic energy. Einstein relativistic energy has no existence since Special Relativity is false. All the new particles that had been discovered by using particle colliders are bogus.

The discovery of particles in particle accelerators rely on a single equation from Special Relativity, the relativistic energy $e^2=(pc)^2+(mc^2)^2$. The claim that all the particles predicted by the Standard Model have been discovered is false for two reasons; one is $e^2 \neq (pc)^2 + (mc^2)^2$ and the other is the fact that the electromagnetic radiation generated as a result of the stopping of fast moving particles at a collision cannot be separated from what resulted from the splitting of particles.

Fundamental particles of nature cannot be obtained by applying relativistic energy $e^2=(pc)^2+(mc^2)^2$ that does not exist. When Special Relativity is false, relativistic energy $e^2=(pc)^2+(mc^2)^2$ cannot exist. The invalidity of Einstein's relativistic energy is also clear from the fact that the energy is not real if $e^2=(pc)^2+(mc^2)^2$. If $e^2=(pc)^2+(mc^2)^2$, the energy e is $e=pc\pm jmc^2$. Einstein's rest energy is imaginary. A particle cannot have rest energy $e=mc^2$ relative to light since light is not relative [14,15]. The energy of a particle must be real. Fundamental particles of nature cannot be obtained by colliding charge particles.

Modern Physics that turned Science into voodoo science is merely a result of theoretical oversights wrapped in experimental misinterpretation such as the Double-Slit Experiment, Stern-Gerlach Experiment, Anderson's Bubble Chamber Experiment, Millikan's and Lenard's Photoelectric Experiments. Pound-Rebka Experiment, and Compton's Experiment and false wavelength mis-analysis, Particle Collider mis-analysis, Arthur Ellington's solar eclipse data misinterpretation in the aim of substantiating General Relativity, and many more experimental mis-analyses. Quantum Mechanics mantra "Shut Up, Compute, publish (SUCp)" is no different from religious mantra "Shut Up, Donate, pray (SUDp)", both are equally non-sense. Physicists are turning a blind eye to the mistakes and making every effort to hold onto ModernPhysics with religious fervor since it is their provider of bread and broccoli. Modern Physics is a boondoggle. Physics is a job done to earn living by doing exactly what is stated in the job description, not science.

REFERENCES

[1] Manton, Nicholas, and Nicholas Mee, "The Physical World: An Inspirational Tour of Fundamental Physics", Oxford University Press, 2017.

[2] Dahanayake Bandula, "Quantum Mechanics: A Double-Slit Blunder", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.3, Issue 8, August-2017.

[3] Carroll Sean, "Something Deeply Hidden, Quantum Worlds and the Emergence of Spacetime", Dutton, New York, 2019.

[4] Dahanayake Bandula, "Maxwell's Equations and Propagation of Light: Not Relative", International Journal of Astrophysics and Space Science, vol. 3, Issue 6, Dec. 2015.

[5] Dahanayake Bandula, "General Universal Relativity (GURL): No Big Bang", International Journal of Astrophysics and Space Science, vol. 4, Issue 4, Aug. 2016.

[6] Dahanayake W. Bandula, "General Orbit Dynamics (GOD): Dark Nothing – No Dark Matter, No Dark Energy, No Space-Time, No Surprise", Journal of Multidisciplinary Engineering Science and Technology (JMEST), vol. 6, Issue 3, March-2019.

[7] Dahanayake W. Bandula, "Quantum Uncertainty and Superposition: Deception in Inception; LHC-Blunder (Direct Manifestation of a Fallacious Model)", Journal of Multidisciplinary Engineering Science and Technology (JMEST), vol. 6, Issue 4, April-2019.

[8] Dahanayake Bandula, "The Light in a New Light: Always a wave, never a particle", Science Discovery, vol. 3, Issue 4, Aug. 2015. [9] Dahanayake Bandula, "Universe in a New Light: inconvenient Reality (iCRY),Precession (Eccentricity Rotation), LIGO (Fantasy Waves), GPS (No Relativity Here), LHC (Design Blunder)", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.5 Issue 7, July 2019.

[10] Kennedy E. Robert, "Einstein's Major Papers", Oxford University Press, 2012.

[11] Peleg Y., R. Pnini, E. Zaarur, E. Hecht, "Quantum Mechanics", Schaum's Outlines, Second Edition, McGraw Hill, 2010.

[12] Dahanayake Bandula, "Expanding Universe: Blind Physics", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.9, Issue 2, February-2023.

[13] Dahanayake Bandula, "Quantum Mechanics: Existential Crisis", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.9, Issue 4, April-2023.

[14] Dahanayake Bandula, "E=j(mc)c: Rest Energy is Imaginary", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.9, Issue 7, July-2023.

[15] Dahanayake Bandula, "Relativity of Light: No Special Treatment is Required (Hidden Equation that Reveals Where, What, Why, and How Special Relativity Went Wrong)", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.9, Issue 8, August-2023.

[16] Dahanayake Bandula, "Lorentz-Einstein Physics: A Mathematical Oversight, Deception, or Blunder (Lorentz Transform Cannot Transform Maxwell Equations) (Propagation of Light is Not Relative)", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.9, Issue 9, September-2023.

[17] Dahanayake Bandula, "Lorentz Transform: Sciencing in the Dark (Lorentz Transform Only Hold for the Trivial Solution of the Maxwell Equations) (It Does not Hold for the Propagation of Light) (Maxwell Equations for Light are Not Transformable)", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.9, Issue 12, April-2023.

[18] Dahanayake Bandula, "Quantum Spin-1/2: Genesis of Voodoo Physics (Theoretical Blunder Wrapped in Bogus Stern-Gerlach Experiment) (From QM NonSense Back to Common-Sense Reality)", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.9, Issue 12, April-2023.

[19] Dahanayake Bandula, "Plank Spectrum is Incorrect: Energy is Not Quantized (Plank Spectrum is Cavity Dependent and Charge Independent) (Lenard's Experiment is Incomplete and Conclusions are Incorrect)", Journal of Multidisciplinary Engineering Science Studies (JMESS), vol.8, Issue 3, March-2022. [20] Dahanayake Bandula, "Constrained Relativity (CORE): No Special Relativity Required (The Rail of Light is Fixed in a Medium; Observers Cannot Derail Light; Einstein Derail the Light; Universe Has No Speed Limit)", Journal of Multidisciplinary Engineering Science Studies (JMESS). vol.8. Issue 2. February-2022.