E=j(mc)c: Rest Energy is Imaginary

(Mass Cannot be Converted to Energy, Mass is Conserved)
(Special Relativity and Lorentz Transform are Polar Opposites)
With Proper Universal Transform, Relative Axes are Absolute, Measuring Sticks and Clocks are Universal

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Abstract—The ubiquitous Relativity Factor depends on the angle of a light beam. The Lorentz Transform and Special Relativity are polar opposites. Einstein's Relativity Factor does not belong in the Lorentz Transform. The purpose of the Transformation Factor in the Lorentz Transform is to make the relative axes frame independent so that the form of the Maxwell equations are uniquely retained, and the clocks and measuring sticks remain universal. Einstein's Relativity Factor falls short of achieving that; it is not the Proper Transformation Factor for the Lorentz Transform. The Proper Transform that transforms the Maxwell equations uniquely onto an inertial frame is frame independent; relative distance axis x' and the relative time axis t' are absolute, (x'=x, t'=t); clocks and measuring sticks are universal.

Special Relativity and the Lorentz Transform deal with the distance traveled and time taken to travel the distance, not space and time. The distance traveled and time taken do not depend on the spacetime coordinates. Space and time cannot be brought to the equation. If time is relative, relative time is directional. Directional motion cannot generate a non-directional relative time. Time itself cannot be relative since there is no time independent frame to observe it; time must be non-directional. Einstein's Relativity Factor derived for the lateral plane cannot be forced onto other directions. Einstein's Relativity Factor derived for a light beam orthogonal to the motion of the frame is not applicable to the Lorentz Transform where a beam of light is in line with the moving frame.

In Special Relativity the mass of an object depends on its speed by the Lorentz Factor, and hence, both momentum and energy of a particle also depend on the Lorentz factor. If both the momentum and energy depend on the Lorentz factor, the energy E will be a complex conjugate pair, E=pc+j(mc)c, E*=pc-j(mc)c, not real. Mass cannot be converted to energy since energy has no existence without mass. Mass and energy are not equivalent. Mass must be conserved.

The energy cannot be a complex conjugate pair, and hence the mass of an object cannot depend on the Lorentz Factor. The mass of an

object cannot depend on its speed. Relative electromagnetic fields cannot depend on the Lorentz Factor. The mass of an object must be independent of its speed. Relative electromagnetic fields must be independent of the speed of the frame. In Special Relativity, relative electromagnetic fields reach infinity as the speed of the frame reaches the speed of light. Einstein's relativity factor does not belong in the Lorentz Transform. Proper Universal Transform with Proper Transformation Factor is absolute, frame independent; measuring sticks and clocks are universal.

The Lorentz Transform and Special Relativity are polar opposites for one-way motion. They are not the same due to the false assumption in Special Relativity that light has a momentum and behaves as golf balls, whereas there is no such assumption in the Lorentz Transform. Both speed and the path of light are observer independent in the Lorentz Transform, while in Special Relativity only the speed of light is observer independent and the path of light is observer dependent. The path of light, which is a constant that can only be altered by the change of medium, cannot be observer dependent.

Although the average forward and return values in Special Relativity are the same as the average forward and return values in the Lorentz Transform, one-way relative distance and relative time are different. What the relative distance x' and relative time t' relative to in the Lorentz Transform is different from what they are relative to in the Special Relativity. The relative values in the Lorentz Transform are the actual values on the frame whereas the relative values in Special Relativity are perceptions of external observers. Special Relativity is not Lorentz Transform compliant unless the claim in Special Relativity that light is relative and behaves as golf balls is discarded; this claim is fake, man-made, and unnecessary.

The Lorentz Transform is a real brick and mortar transform, not a perception of external observers. The x' and t' are what passengers measure on the frame, whereas in Special Relativity they are external observer perceptions. Every inertial frame is not a stationary frame for

light, the massless, whereas for objects of mass, every inertial frame is a stationary frame. The behavior of light bursts is directly opposite of the behavior of objects of mass. A light burst shifts against the motion of the train relative to the passengers on the train while the propagation of light within the burst remains unaltered relative to passengers and external observers. The path of an object of mass shifts in the direction of the train relative to external observers while the motion of the object on its path remains unaltered relative to passengers and external observers. Time taken for an object or light to travel a distance on its fixed path is observer independent. Trains do not derail relative to observers; the essence of relativity.

In Special Relativity, for the mass m of an object to be dependent on its speed by the Lorentz factor and hence the relative momentum p and the energy E to be dependent on the Lorentz factor, the momentum p and energy E must be complex conjugate pairs (P, P^*) and (E, E^*), where, $P = p + j(mc)$, $E = pc + j(mc)c$, and c is the speed of light. The relative momentum p dependent on the Lorentz factor and the imaginary momentum $j(mc)$ are mutually orthogonal indicating that the velocity v of the particle is orthogonal to the velocity c of a hypothetical beam of light in Special Relativity. It is this hidden hypothetical beam of light that is the implicit absolute frame in Special Relativity. There is no need for a beam of light and speed of light c to have any association with the motion of an object of mass. Propagation of light and motion of an object of mass are mutually independent. Time is not determined by propagation of light.

Although Special Relativity claims that there is no absolute frame, there is an implicit hypothetical absolute frame in Special Relativity. The implicit absolute frame in Special Relativity is a hypothetical beam of light with velocity jc orthogonal to the velocity v of an object of mass m. Special Relativity is built on the false assumption that the light is relative and the motion of a particle of mass m takes place orthogonal to a hypothetical beam of light. It is the presence of a hidden implicit hypothetical beam of light orthogonal to the direction of motion of an object as the absolute frame that gives an object the imaginary rest energy in Special Relativity. The rest energy is not real. This is reminiscent of Einstein's vertical beam of light in a moving train thought experiment, which is the genesis of Special Relativity and the Relativity Factor that was forced upon the Lorentz Transform as Lorentz Factor.

The claim in General Relativity that a mass warps space is false and deceitful. If space is assumed to be warpable, what warps space is what occupies space. The mass of an object does not occupy space. A mass cannot warp space even if space is warpable. It is the volume of an object that occupies the space. If the space is warpable, it is the volume of an object that warps the space, not the mass. If the space is warpable, two objects of the same mass but of different volumes do not give the same curvature. If the space is warpable, the curvature of space is not a function of the mass of an object, it is a function of the volume of an object. If gravity is the curvature, gravity is determined by the volume of an object in General Relativity, not by the mass of an object. What is warped by a mass is the material medium, not space.

Gravity is not equivalent to acceleration. There is no acceleration without the change of position and hence an object of mass m at rest on earth has no acceleration. An apple on a tree has a force, but no acceleration. A falling apple has an acceleration. Einstein's Principle of Equivalence is false. General Relativity is invalid. Gravity cannot bend light in a vacuum since the path of light is a constant that can only be altered by the change of medium density. What mass warps is the medium that surrounds it by the effect of gravity, generating a medium density gradient that refracts light, which is gravitational lensing. The mass of an object generates a curvature in the medium that surrounds it, not in space itself. There is no gravitational lensing in the absence of a medium, in a vacuum. Gravity has no direct effect on light, the massless. It is the medium that mediates a secondary interaction between gravity and light.

Space is not warpable. No object can warp space. If an object warps space, a moving object generates a changing space-warp generating a resistance to the motion, which leads to the collapse of orbiting systems. If space is warpable by an object, perpetual planetary motions are not possible and the universe as we know cannot exist. Special Relativity and General Relativity are perfidious pseudoscience.

Special Relativity treats light as golf balls that carry momentum. If light has momentum, light must be able to be brought to a complete stop by applying equal and opposite momentum. But, light has no standstill existence, and hence cannot be brought to a stop. Any entity that cannot be brought to a halt cannot be relative and cannot have momentum. Light is not relative and has no momentum. A hypothetical beam of light cannot be taken as a reference frame as it is taken as a reference frame in Special Relativity. A mass cannot have speed c relative to light, and hence a mass at rest cannot have rest energy $E = (mc)c$. The rest energy is imaginary, $E = j(mc)c$. Einstein's $E = (mc)c$ is false. Mass and energy are not equivalent. Mass cannot be converted to energy since energy has no existence without mass. Light has no energy, no temperature, no momentum. Mass is conserved.

The path of light and the speed of light on its path are constants that can only be altered by the

change of the medium and hence they cannot be altered relative to observer motion. Observers cannot derail trains. No mass can have a motion relative to a beam of light since light has no stand still existence, and hence a beam of light cannot be a frame of reference even hypothetically. Vertically fired light bursts from the bottom of a moving train cannot behave as golf balls. Motion Mechanics that deal with the motion of masses and the Maxwell equations for propagation of light that deal with the massless waves cannot be unified. What Galileo claimed impossible to determine with objects of mass is possible using light bursts. What is impossible to determine by throwing golf balls is possible with light bursts. Motion and propagation cannot be unified. Speed of light cannot limit the speed of objects of mass.

Maxwell equations for propagation of light cannot be transformed onto an inertial frame. Propagation of light is not relative. Light bursts on a train move against the motion of the train relative to passengers on the train. Light does not propagate relative to inertial frames. The Lorentz Transform cannot transform Maxwell equations for propagation of light onto an inertial frame. If time is relative, every direction has its own relativity factor that is different; there is no single relativity factor that fits for every direction. We cannot bring time into the equation. It is the time delay of an observed event that is relative, not the time itself. Time width that is defined as a day or a year, is observer independent. Clocks do not determine a day. Clocks are engineered to break down a day into finer intervals. Clocks measure time delay. There is no flow of time; what is there is the flow of a time interval we have defined.

The speed of light is observer independent naturally since light propagates at constant speed on a constant path that can only be altered by the change of the medium. Light cannot bend relative to observers. It is the path of light as a whole that shifts relative to observer motion. It is the train track that shifts against the motion of observers. Observers cannot derail a train. Observers cannot bend light. Gravity cannot bend light in a vacuum. Gravitational lensing is a result of gravity generating a density gradient in the medium surrounding the gravitational object, not a result of General Relativity. Irrespective of how massive a gravitational object is, there will be no gravitational lensing in the absence of a medium surrounding the gravitational object.

Galileo Relativity is incorrect. Relative velocity cannot be obtained by simple vector addition since a moving object has no existence outside its path relative to observers. Galileo Relativity appears to be correct only when the observer motion is parallel to the direction of motion of an object. Speed of a train on its track is independent of observer motion. Speed of light on its track is independent of observer motion. It is the track that moves against the motion of observers. What

is moving or propagating on a fixed path must remain on the path relative to any observer.

The concept of expanding universe is a result of misinterpretation of observations. The redshift of a star in a galaxy cannot be used to claim that the galaxy itself is moving away unless all the billions of stars in the same galaxy have the same redshift. The galactic redshift is due to the changing density gradient of the medium and redshift varies from star to star in the same galaxy. Universe can neither expand nor contract. A mass can travel faster than light. Speed of an object cannot be limited by the speed of light. Universe has no speed limit.

Although the Lorentz factor is the core of Special Relativity, the Lorentz factor is not unique, and it is limited to the motion at constant speed on linear paths. The Lorentz factor cannot be applied at the acceleration stage of an object to reach the constant speed as it is done in the derivation of relative energy in Special Relativity. Special Relativity and Lorentz factor do not apply for circular orbits and elliptical orbits such as the Global positioning System (GPS). Special Relativity, and General Relativity are based on the average forward and return time of a beam of light that clocks are not designed to provide. Clocks are incompatible with Einstein's Relativities that operate on the average forward and return time of a beam of light. Special Relativity and General Relativity are not applicable for real time systems that operate on one-way time.. Average length contraction is not real. Average is calculated, not measured.

We do not age by the clocks that we engineer. Our definition of time, a day or a year, does not run shorter or longer just because clocks are running slower or faster. A day or a year is frame independent. Age is not determined by clocks. A day or a year is not determined by clocks. Clocks are devices we engineer to break down a day into finer intervals. Clocks display time if clocks are in synchrony with the day. A day or a year is independent of observer motion and the ticking speeds of clocks. There is no flow of time until we define and keep track of time. The flow of time exists only in human minds, not in nature. Time is not a dimension since the past and future are not accessible. Time is independent of space. Space and time cannot be brought into the equation.

The x in the Lorentz Transform is the distance traveled in time delay t. The distance x traveled is not a coordinate in space. The distance traveled is independent of space coordinates. The t in the Lorentz Transform is the time taken to travel the distance x; t is the time delay. Time delay t is not the time; it is independent of any instance of time. When x=0, t=0, x'=0, t'=0. The Lorentz Transform does not represent spacetime; it does not apply to stationary objects, to meter sticks. Coordinates in space have no coordinate dependent time. It is not possible to determine if space and time are

relative since a frame of reference has no existence without space and time. Space and time are mutually independent.

Time itself is not involved in Special Relativity. What is involved in Special Relativity is the observed time delay to travel a distance, which is independent of space. Time itself is not relative. The distance to an event and the observed time delay is relative and depends on the observer motion. Distance-delay is not space-time. Distance-delay is independent of spacetime coordinates.

Galileo Relativity must be modified to incorporate the fact that trains do not derail or vehicles do not end up in ditches relative to observers. Light cannot bend relative to observers. Light cannot follow geodesics; light cannot take a curved path at constant speed. Light takes a straight path in a vacuum irrespective of the presence of gravitational objects. Gravity cannot bend light in a vacuum. Gravitational lensing is only present in the presence of a medium, a secondary effect. The path of an object or a wave cannot be altered relative to observers since the object or the wave has no existence off its path.

Einstein's relativity theories are fundamentally invalid in their foundation since light is not relative and does not behave as golf balls. The Lorentz Transform requires both speed and the path of light to be observer independent and hence it is incompatible with Special Relativity where the path of light is observer dependent; they are polar opposites. The path of light can only be altered by the change of medium. Although a passenger on an inertial frame cannot determine its speed by throwing golf balls (Galileo''s claim), a passenger can determine its speed by releasing light bursts. Light, the massless, cannot comply with Galileo's claim. The forcing of light to behave as golf balls is a fundamental mistake in Modern Physics. Light cannot behave as golf balls just because Einstein forced the light to.

A theory that claims the speed of light is independent of the frame of reference cannot contain frame dependent speeds $(c-v)$ and $(c+v)$; Special Relativity that claims the speed of light is frame independent is based on the Lorentz factor that contains relative speeds $(c+v)$ and $(c-v)$, which is a self-contradiction. A theory that contains $(c+v)$ and $(c-v)$ runs on the average forward and return time of a beam of light and hence is incompatible with clocks and not applicable to real time systems that run on one-way instantaneous time. Any theory based on average forward and backward motion cannot model real-time systems. Average must be calculated. What is measured are the instantaneous values. We cannot observe or measure average length contraction. The speed and path of light are observer independent

naturally; no Special Relativity is required.

A vertical light burst in a train shift on a reverse angular path relative to passengers on the train. The speed and the path of propagation of light within the burst is unaltered and remain vertical relative to passengers on the frame and external observers. The path of a moving golf ball on a train shifts on a forward angular path relative to an external observer. The path and speed of the golf ball on its path remains unaltered relative to passengers as well as external observers. The relativity of the motion of light bursts is the direct opposite of the relativity of the motion of objects of mass. Propagation of light is not relative.

The Lorentz Transform is not an external observer's perception of a moving frame, it is an actual transformation of light from a frame where light naturally propagates onto an inertial frame. Every inertial frame is not a stationary frame for light. The relative values in the Lorentz Transform are the actual brick and mortar values on the moving frame as measured by a passenger on the frame. This is the direct opposite of Special Relativity, where the relative values are what outside observers measure. This distinction is present since light is not required to have momentum in the Lorentz Transform whereas in Special Relativity light is forced upon momentum.

In Special Relativity, relative time and relative distance dilate for motion along the motion of the frame. However, in the Lorentz Transform, it is the direct opposite; the relative distance and relative time contracts for motion along the motion of the frame. Even though the relative axes in the Lorentz Transform are frame dependent, with the Proper Transformation Factor in the Lorentz Transform, the relative axes are frame independent, and the clocks and meter sticks are universal.

Lorentz Transform without Transformation Factor is a contraction. The unique transformation of Maxwell equations onto an inertial frame requires relative time and relative distance axes to be frame independent. The purpose of the Transformation Factor is to cancel out the contraction. The Lorentz Factor falls short of canceling the contraction. The Proper Universal Transformation Factor exactly cancels the contraction and makes relative axes frame independent; the transformation is unique, clocks and measuring sticks are universal.

The Maxwell equations for propagation of light are not transferable onto an inertial frame, and hence a passenger on an inertial frame can determine the speed of the frame using a burst of light; this in total agreement with the Galileo since his claim refers to the inability of measuring the speed of a closed cabin from within by throwing golf balls, not by using light bursts. Light bursts cannot behave as golf balls relative to observers, and cannot be forced to do so.

The Lorentz Transform and Special Relativity

are polar opposites, they are not the same. In the Lorentz Transform both speed and path of light are frame independent whereas in Special Relativity only the speed of light is frame independent. Einstein's Relativity Factor does not belong in the Lorentz Transform. With the Proper Universal choice of the Lorentz Factor (Proper Universal Transform), which is the square of the Lorentz Factor, the relative distance axis and relative time axis are absolute, frame independent; clocks and meter sticks are universal.

The distance-delay in the Lorentz Transform is not space-time. Space and time cannot be brought into the equation since there is no frame of reference that is independent of space and time. Maxwell equations are not transformable onto an inertial frame. Propagation of light is not relative. A light burst shifts against the motion of the frame while the speed and path of propagation within the burst is unaltered; it is unaltered relative to external observers. Although a passenger in a moving cabin cannot determine the speed of the cabin by throwing golf balls, a passenger can determine the speed of the cabin using a burst of light. Space, time, and mass are not relative. Space and time cannot be brought to the equation. The x and t in Special Relativity are not spacetime coordinates.

I. INTRODUCTION

In 1905 Einstein presented Special Relativity by considering a vertical beam of light in a moving train. Instead of considering a vertical beam of light, if he had considered a beam of light at an angle θ, he would have realized the fallacy of Special Relativity and the idiocracy of his claim that time is relative. We cannot consider a vertical beam light in a moving train and force the outcome onto other directions. Each direction has its own distinct Relativity Factor. There is no single Relativity Factor that fits all the directions.

If time is assumed to be relative, each and every direction has its own time dilation factor and time will be directional. Non-directional time is not possible if the time is assumed to be relative. In addition, it is not the space and time that Special Relativity deals with. Special Relativity deals with the distance traveled and time delay taken to travel the distance. Distance-delay is not space-time. Space and time cannot be brought into the equation since there is no frame of reference that is independent of spacetime.

A special theory with average forward and return time dilation and average forward and return length dilation when the direction of motion is not in line with the motion of the frame, and with average forward and return time dilation and average forward and return length contraction when the motion is in line with the motion of the frame is not required for light to travel at constant speed relative to observers. Any effort to link the transformation of Maxwell equations onto an

inertial frame will be futile since the Special Relativity and the Lorentz Transform that is used to transform the Maxwell equations onto a moving frame are polar opposite. What x′ and t′ represent in the Special Relativity is not the same as what x′ and t′ represent in the Lorentz Transform. Maxwell equations cannot be transformed onto an inertial frame using the Lorentz Transform. The superficial Transformations of Maxwell equations onto an inertial frame carried out by both Lorentz and Einstein are invalid [6]. Einstein's time dilation factor in Special Relativity does not belong in the Lorentz Transform. We cannot force the Relativity Factor derived for the lateral plane for θ=90° as the Relativity Factor for everywhere else.

Theorem: Dilation Factor η(θ) at Angle θ

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′=η(θ)t d′=η(θ)d, where d is the distance traveled at time delay t at an angle θ. The time dilation factor η(θ) is given by,

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

When θ=90°, η(90°)=ɣ

η(θ)≠ɣ ∀ θ≠90°.

When θ=0°, $\eta(0°)=\gamma^2(1+v/c)$,
η(0°) depends on the speed of the frame, v.
When θ=180°, $\eta(180°)=\gamma^2(1-v/c)$
η(180°) depends on the speed of the frame, v.
$\eta_{ave}(0°,180°)=[\eta(0°)+\eta(180°)]/2=\gamma^2$.
$\eta_{ave}(0°,180°)$, independent of the speed of the frame, v.
For any angle θ,
$\eta_{ave}(\theta,\theta+180°)=[\eta(\theta)+\eta(\theta+180°)]/2$,
$\eta_{ave}(\theta,\theta+180°)=\gamma^2(1-(v^2/c^2)\sin^2\theta)^{1/2}$,
$\eta_{ave}(\theta,\theta+180°)$ depends on the speed of the frame, v.
where, $\eta_{ave}(\theta,\theta+180°)$ is the average of η(θ) and η(θ+180°).

η(0°)≠η(180°)≠ɣ.

η(θ)≠η(θ+180°)≠ɣ ∀ θ≠90°.

If time is relative, time is directional. Time cannot be directional and hence time cannot be relative. Einstein's Relativity Factor ɣ doesn't exist. We cannot force the dilation factor ɣ that only holds for the lateral plane θ=90° onto other directions.

Lemma:
Time is not determined by the propagation of light.

Theorem: Proper Universal Relativity (PUR)

The Proper Universal Transform for Proper Universal Relativity is,

x′=η(x-vt)
$t′=\eta(t-vx/c^2)$,
where, Proper Universal Transformation Factor $\eta=\gamma^2$.

Proper Universal Transform is unique and the relative

axes **x′** and **t′** are absolute; there is no dilation or contraction. The relative axes **x′** and **t′** in the Proper Universal Relativity are independent of frame of reference. Both speed of light and the path of light are frame independent. Proper Universal Transform is equivalent to $x′=x-vt′$ indicating that Light has no momentum and does not behave as golf balls.

The Lorentz Transform is equivalent to $x′=x/ɣ-vt′$; it also indicates that Light has no momentum and does not behave as golf balls. However, the relative axes in the Lorentz Transform are frame dependent. The relative axes contract in the Lorentz Transform. Clocks and measuring sticks are frame dependent in the Lorentz Transform due to the improper choice of the Lorentz Factor. Einstein's time dilation factor ɣ derived for a vertical beam of light ($\theta=90^o$) in a moving train in Special Relativity is not applicable to the Lorentz Transform where the motion is in line ($\theta=0^o$) with the motion of the frame.

Corollary:
In the Lorentz Transform when the Lorentz Factor is $ɣ^2$, the relative distance axis **x′** and relative time axis **t′** are universal, observer independent, **x′=x** and **t′=t**, which is the Proper Universal Relativity, where $ɣ=1/(1-v^2/c^2)^{1/2}$.

Theorem:
If the mass m of an object moving at speed v is relative, $m′=ɣm$, then, the energy E and the momentum P are complex vectors,
E$=pc\pm j(mc^2)$ and **P**$=p\pm j(mc)$.

Even though the energy must be scalar and unique, the energy of a particle in Special Relativity cannot be scalar and unique, and hence Special Relativity cannot exist.

Lemma:
A mass at rest has no kinetic energy. The rest energy in Special Relativity is imaginary $E=j(mc^2)$, not real; it is inherent in Special Relativity as a result of choosing a hypothetical orthogonal beam of light as an absolute frame. A beam of light cannot act as a reference frame even hypothetically since light is not relative.

Lemma:
Implicit in Special Relativity is a hypothetical orthogonal beam of light as the absolute frame of reference since the energy E of a particle in Special Relativity is given by a complex conjugate pair (**E**, **E***),
E$=pc+jmc^2$ and **E***$=pc-jmc^2$.

Einstein's use of a vertical light beam in a moving train in the derivation of the factor ɣ is a clear indication of the fact that an orthogonal light beam is used as the reference frame in Special Relativity.

Lemma:
Relative to a beam of light, the momentum **P** of an object with mass m and speed v in Special Relativity is a complex conjugate pair (**P**,**P***),
P$=p+j(mc)$ and **P***$=p-j(mc)$,
where, $p=ɣmv$, $ɣ=1/(1-v^2/c^2)^{1/2}$.

Lemma:
Relative to a beam of light, the overall velocity **V** of an object with mass m and speed v in Special Relativity is a complex conjugate vector pair (**V**,**V***),
V$=ɣv+jc$ and **V***$=ɣv-jc$.

Corollary:
Special Relativity has the implicit assumption that the light is relative and the relative momentum **p**$=ɣm$**v** or equivalently the velocity **v** of a particle is orthogonal to the velocity j**c** of a hypothetical beam of light. The product pc is meaningless and does not represent the energy of a particle of momentum p.

Lemma:
Although Special Relativity explicitly denies the existence of an absolute frame of reference, what is implicit in Special Relativity is a hypothetical beam of light orthogonal to the motion of an object as the absolute frame of reference. Light is not relative and hence a beam of light cannot exist as a reference frame, and Special Relativity cannot exist.

Lemma:
The use of the Lorentz factor $ɣ=1/(1-v^2/c^2)^{1/2}$, which is $ɣ=c/[(c-v)(c+v)]^{1/2}$, to claim that the speed of light is constant c is a self contradiction since the Lorentz factor is based on the relative speeds of light (c+v) and (c-v). The Lorentz Transform, Special Relativity, and General Relativity are self-contradictory; hypocritical.

Lemma:
Light is not relative and cannot behave as golf balls. Special Relativity based on the false assumption that light is relative and behaves as golf balls is both theoretically and conceptually invalid.

Theorem:
If space is warpable, the mass of an object cannot warp space. It is the volume of an object that warps space. If the space is warpable, the curvature of the space is determined by the volume of an object, not by the mass of an object. There is no acceleration without motion and hence gravity is not acceleration. Einstein's equivalence principle is invalid. General Relativity is fundamentally invalid in its inception.

Lemma:
The Lorentz Transform with the Lorentz Factor ɣ is not unique and cannot exist. Einstein's lateral plane time dilation factor $\eta(90^o)=ɣ$, $t′=ɣt$, does not belong in the Lorentz Transform where $\theta=0^o$, $t′=t/ɣ$, $x′=x/ɣ$. In Special Relativity, when $\theta=0^o$, the time dilation factor $\eta(0^o)=ɣ^2$. In Special Relativity if the average forward and reverse length contraction is imposed, at $\theta=0^o$, t′(average)=ɣt(average),

x′(average)=γt(average),
which are the opposite of the Lorentz Transform where t′=t/γ, x′=x/γ.

Theorem: Proper Universal Transform (PUT)

The Proper Universal Transform is the Lorentz Transform with the Proper Universal Factor $γ^2$ as the Lorentz Factor. The Proper Universal Transform is unique and its relative axes **x′** and **t′** are universal, frame independent, **x′=x** and **t′=t**. There is no contraction or dilation. Clocks and meter sticks are universal.

Property:

Both the speed and the path of light are frame independent since the path and the speed of light are constants that can only be altered by the change of the medium. As a result, the path and speed of light are naturally observer independent. Any theory that claims the speed of light is independent of the frame of reference cannot contain the relative speed terms (c-v) and (c+v) since the terms (c-v) and (c+v) cannot come into existence unless the speed of light is relative, a contradiction, where c is the speed of light and v is the speed of the frame of reference.

Theorem:

Any entity that cannot be brought to a halt cannot have momentum and cannot be relative. Light cannot be brought to a halt since light has no standstill existence and hence light is not relative and has no momentum.

Property:

The speed and the path of light can only be altered by the change of medium. Observers cannot bend light. Observers cannot derail trains.

Property:

The time dilation factor γ(θ) depends on the angle θ between the path of a moving entity and the path of the moving frame. Einstein's time dilation factor γ derived for θ=90° is not valid for any other direction, θ≠90°; γ does not belong in the Lorentz Transform where a beam of light travels in line with the motion of the frame, θ=0°. The time dilation factor in the direction of motion of the frame γ(θ=0°) depends on the polarity of the speed ±v, even though γ(θ=90°) is independent of the polarity of the speed ±v. It is the average time dilation factor $γ_{ave}(θ)=[(γ(θ)+γ(θ+180°))]/2$ that is independent of the polarity of the speed ±v. The Lorentz Transform is only applicable for θ=0° or θ=180°.

Property:

In Special Relativity, for motion in the direction of the frame, x′=x/γ+vt′. The Lorentz Transform, which is limited to the motion in or against the direction of motion of the frame, x′=x/γ-vt′ in the direction of the frame. In Special Relativity, for motions at an angle to the direction of the motion of the frame, **d′=d+v**t′,

where **d** is the traveled distance vector for motion at time delay t. The Lorentz Transform does not hold for motion at an angle to the direction of motion of the frame.

The Lorentz Transform (x′=x/γ-vt′) and Special Relativity (x′=x/γ+vt′} are polar opposites. The relative distance x′ and relative time delay t′ in Special Relativity are relative to external observers whereas the relative distance x′ and relative time delay t′ in the Lorentz Transform are relative to passengers on the frame. The transformation of Maxwell equations onto an inertial frame is real and the Lorentz Transform is not an observer's impression. The Lorentz Transform contains what is measured on the frame. The Lorentz Transform and Special Relativity are the polar opposites in every sense.

Special Relativity that is based on the average forward and return motion cannot be observed. We cannot observe the average. We have to calculate the average off-line. Average cannot be measured. Average length contraction is only present on paper, not in reality. What is observed is the values at an instant of time. There is no length contraction in Special Relativity for motion in the direction of motion of the frame at an instant of time. There is no length dilation in Special Relativity for motion against the direction of motion of the frame. Any theory such as Special Relativity that is based on the average forward and return distance and the average forward return time of a beam of light cannot be used to model real-time systems.

"Instead of developing a theory that fits nature, Einstein warped nature to fit his theory of Special Relativity while being blind and oblivious to the obvious contradictions. If Einstein had considered a beam of light at an angle θ to the direction of the moving train, he would have realized the obvious blunder in the theory of Special Relativity."

Property:.

Special Relativity requires the speed of light to be frame independent and the path of light to be frame dependent. The Lorentz Transform requires both the speed and path of light to be frame independent. Light is not assumed to have momentum in the Lorentz Transform. Light is forced upon a fake momentum in Special Relativity. Special Relativity is not Lorentz Transform compliance and vice versa.

Although every moving frame is an inertial frame for a mass, every inertial frame is not a stationary frame for propagation of light. A mass has the speed of the frame it is on. Propagation of light does not have the speed of the frame light was emitted. Propagation of light is blind to the speed of the source light was emitted. Light does not propagate relative to inertial frames. Maxwell equations are not transformable onto inertial frames.

It is only the number of light bursts received that varies with the motion of a light source or the

observer, not the speed of propagation of light. Motion of light bursts are not governed by Maxwell equations. The motion of light bursts is relative, the propagation of light is not relative.

Lemma:

Special Relativity and the Lorentz Transform are polar opposite, not the same. The relative distance and relative time for one-way motion in the direction of the frame dilates in Special Relativity while they contract in the Lorentz Transform.

The mockery of Einstein's Relativity Theories, Special Relativity and General Relativity, lies in their very foundation. Einstein's Relativity Theories are founded upon the false assumption that light carries momentum and behaves as golf balls. Modern Physics is based on the false assumption that light is relative and carries momentum. Light is not relative and has no momentum. Maxwell equations for light cannot be transformed onto an inertial frame [6].

If an entity is relative, it must be stoppable. Unstoppable entities cannot have momentum. If light has a momentum, light must be able to be brought to a halt by applying equal and opposite momentum. Any entity with momentum must be able to be brought to a halt by an external force. Any entity that has no standstill existence cannot be brought to a halt by any means. Light is such an entity. Light has no standstill existence.

We cannot even apply an external force on light. If we cannot even apply a force on light, how can the light have a momentum? If an entity has momentum, we must be able to increase or decrease the momentum by applying an external force. We cannot bring light to a halt by force. If we cannot force it to stop, it has no momentum.

Electromagnetic potential energy divided by speed of light c is not a momentum, it is meaningless. It is only the kinetic energy of a mass that is related to the mass and speed of the mass. There is no massless momentum.

Einstein obtained the time dilation factor for a beam of light orthogonal to the direction of motion of the frame and forced it in the direction of motion of the frame. The time dilation factor in the direction of motion of the frame is not the same as the time dilation factor on the lateral plane. The time dilation factor for motion along the direction of motion of the frame is not the same as the time dilation factor for motion against the direction of motion of the frame. There is no single time dilation factor that fits for every direction and the polarity of frame speed $\pm v$.

If time is assumed to be relative, time will be directional. If time is relative, the directional motion cannot give a non-directional time. Time cannot be directional. Special Relativity does not deal with space and time. What Special Relativity deals with is the distance x traveled for time delay t. When t=0, x=0, $x'=0, t'=0$ in both Special Relativity and the Lorentz Transform. The distance x traveled in time delay t is independent of spatial coordinates and instances of time. Special Relativity, Lorentz Transform, and General Relativity have nothing to do with space and time. Space and time cannot be brought into the equation.

The only way to change the speed and the direction of light is through the change of the medium. The only way to change the frequency of light is by modulation [8]. The change of frequency of a wave does not require the change of time itself. The time itself cannot be changed. Frequency of a wave does not depend on the time itself, it depends on the time width. Time width is independent of an instance of time, time itself. We cannot change the actual frequency of a wave by running towards or away from a source even though we measure a higher or lower frequency. Our motion does not change the actual properties of a wave. The Doppler effect is for observers eyes and ears only, not real [8].

The Lorentz transform with Einstein's lateral plane time dilation factor ɣ as the Lorentz Factor is not unique and hence the relative time and relative length in Special Relativity are not unique. Einstein Relativity Factor ɣ is not capable of fulfilling the purpose of the Transformation Factor in the Lorentz Transform. There is a purpose for the Transformation Factor in the Lorentz Transform. The purpose of the Transformation Factor in the Lorentz Transform is to make the relative axes universal, frame independent, so that the transformation is unique and the form of the Maxwell equations is maintained. Einstein's Relativity Factor failed to achieve that.

The spacetime function in Special Relativity is not unique. Time and space are mutually independent. Light does not propagate relative to inertial frames or moving observers [6]. It is the path of light that moves relative to observers, not the propagation of light on its path. It is the train track that moves relative to observers, not the train on its track. Propagation of light is naturally observer independent [4]. No Special Relativity is required [4].

You cannot apply a force on the massless. You cannot apply momentum on massless. You cannot accelerate or decelerate the massless. Speed of the massless cannot depend on the observers. Speed of light cannot depend on the observers since light is massless. The massless has no momentum. Light that has no standstill existence cannot carry a momentum. Light that has no stand still existence cannot be relative. Light cannot bend relative to observers. It is not just the speed of light that is constant and can only be altered by the change of medium, the path of light is also constant and can only be altered by the change of medium.

In the Lorentz Transform both the speed and the path of light are observer independent. The Lorentz Transform applies for motion in the direction or against the motion of the frame. In Special Relativity, it is only the speed of light that is frame independent, the path of light is forced to be frame dependent in Special Relativity. The path of light cannot be forced to be observer dependent since the path of light can only be altered by the change of the medium.

Observers cannot bend light. Gravity has no direct effect on light. Gravity has no effect on the massless. Gravity cannot bend light in a vacuum.

Contrary to the claim in Special Relativity and General Relativity that the time itself is relative, Einstein's Relativities never deal with the time itself. We cannot deal with time itself. Time does not exist. We define time intervals. We deal with time delays. Einstein's Relativities only deal with the observed time delays of events. Observed time delay of an event is relative. You cannot use the dependence of the observed time delay of an event on the speed of the motion of the observer toward the event or away from the event to make a general claim that the time itself is relative and depends on the observer as it is done in Einstein's Relativity Theories. Observed time delay of an event is not the time itself. Time is not determined by clocks. Clocks are engineered to break down the time that we have already defined into smaller intervals.

Einstein Relativity Theories are invalid in their very foundation. The mistakes in Einstein's Special Relativity theories are not correctable since the mistakes are the foundational assumptions. When the foundational assumptions themselves are false, no patch-up can prevent the collapse. The claim in Physics that light is relative and has momentum is false. Light cannot behave as golf balls even hypothetically. Vertically fired light bursts from the bottom of a moving train do not behave as golf balls relative to passengers in the train. So, it is important to see the genesis of Einstein's fallacy, the fairy tale of Einstein's Relativities, which by the way, despite all the fact to the contrary, have been blindly accepted by physicists as the ultimate reality of the cosmos. From its start to the present, Einstein's Relativities remain as a religion in physics, not as a science. The theory of Special Relativity is so vague as a religious text, the interpretation of the theory varies from one school to another just like the interpretation of religious texts. How can a fair-minded person with any understanding of basic science claim that the snow on an off-tuned old television is the remnant of a big bang? How can a person who claims Cosmological Microwave Background is the remnant from a big bang be a scientist? It shows how religious modern physics has become. Religious belief makes one blind to the obvious, antithesis to science.

In the year 1889, Maxwell presented the equations for the propagation of electromagnetic waves, which indicated that the speed of light is a constant. It is not just the speed of light that is observer independent in the Maxwell equations, the path of light is also observer independent. The velocity of light is observer independent. It is only the change of the medium that can alter the speed and the path of light. The speed, direction, and the path of light can only be altered by the change of the medium, nothing else.

Neither the observers nor the gravity can alter the speed, direction, and the path of light. It is only that gravity can alter the velocity of light in the presence of a medium [8]. Gravity has no effect on the velocity of light in a vacuum. Gravity has no direct effect on the massless entities such as light. It is the medium that mediates an interaction between gravity and light.

Every gravitational object is surrounded by a medium. Gravity generates a density gradient in the medium that bends light. Larger the mass of the gravitational object, steeper the density gradient of the medium and hence larger the refraction or the bending of light. It is the density gradient of the medium that bends light. The claim in Einstein Relativity that gravity bends light is false, simply meaningless [8].

In 1905, Einstein claimed that if the speed of propagation of light is a constant, the speed of light must be independent of the inertial frame of reference. In other words, Einstein conjectured that the speed of light must be independent relative to the observer motion. Einstein disregarded the fact that the direction of light is also independent of the motion of observers. The path of light must be independent of the observer motion, not just the speed of light. Observers cannot alter the path of light, not just the speed of light. Observers cannot bend light. A train does not derail relative to observers. If Einstein had considered the fact that both the path and the speed of light on its path are independent of observers, not just the speed of light, there is no need for Special Relativity. The motion of any entity on a fixed path is naturally independent of observers. Observers cannot derail trains. Observers cannot derail light.

Einstein forced the speed of light to be a constant relative to moving observers while allowing the path of light to change relative to observers even though observer motion cannot change the path and the direction of light. This gave light a false momentum. It made the momentum in Special Relativity relative, and the relative momentum p to be given by $p=\gamma mv$, where m is the mass of the moving object, v is the speed of the object, and $\gamma=1/(1-v^2/c^2)^{1/2}$. Einstein attributed the change of relative momentum to the change of the mass of the moving object and represented the relative momentum as $p=m'v$, where the relative mass $m'=\gamma m$. Although the mass of an object cannot depend on its speed, Special Relativity made the invalid conclusion that the mass is relative and depends on the speed. The mass of an object is the amount of matter the object contains, which must be independent of speed.

The relativity factor $\gamma=1/(1-v^2/c^2)^{1/2}$ is only applicable for inertial frames or object moving at constant speeds. It does not apply to orbiting objects. It does not apply for the stage, where a stationary object has to accelerate to reach the speed v. But, in Special Relativity, the relativity factor $\gamma=1/(1-v^2/c^2)^{1/2}$ is used in the acceleration stage to obtain the work done for the object to reach the constant speed v and hence to obtain the relative energy E of an object. It is this invalid derivation that led the energy of a moving object in Special Relativity to be given by $E=m'c^2$, where $p=m'v$.

In Special Relativity, under the invalid assumptions that the path of light is relative and the mass is

relative, the energy of a moving particle is given by $E=(1/(1-v^2/c^2)^{1/2})mc^2$ and the momentum p is given by $p=(1/(1-v^2/c^2)^{1/2})mv$. By eliminating v from E and p, Special Relativity obtained the energy relationship $E^2=(pc)^2+(mc^2)^2$. In other words, the energy of a moving particle in Special Relativity that satisfies the relationships for relative energy $E=m'c^2$ and the relative momentum $p=m'v$ is given by $E^2=(pc)^2+(mc^2)^2$.

In Special Relativity, for the mass to be relative $m'=\gamma m$, and hence for the momentum to be given by $p=m'v$ and the energy to be given by $E=m'c^2$, the energy E and momentum p must satisfy the relationship $E^2=(pc)^2+(mc^2)^2$; this simple but false energy relationship arisen from the Special Relativity has been the cornerstone of modern particle physics. It is a result of the invalid use of the Lorentz factor for the acceleration stage of a particle during its ascend to the speed v from the standstill and the false assumption that the light is relative in Special Relativity. It is also a result of forcing the time dilation factor γ, which is applicable only for the lateral plane ($\theta=90^o$) orthogonal to the direction of the frame, in the direction of the frame ($\theta=0^o$), even though the time dilation factor in the direction of the frame is different and depends on the polarity of the speed of the frame $\pm v$.

Modern particle physics is based on this energy relationship $E^2=(pc)^2+(mc^2)^2$. In fact, the particle physics experiments at the Large Hadron Collider (LHC) are based on the energy relationship $E^2=(pc)^2+(mc^2)^2$. It is not an exaggeration to say that the Large Hadron Collider (LHC) or any other particle collider cannot exist without the relationship $E^2=(pc)^2+(mc^2)^2$; this is the workhorse of particle accelerators. The problem is that the momentum and energy relationship $E^2=(pc)^2+(mc^2)^2$ is invalid, and cannot exist since E must be real. If energy is given by $E^2=(pc)^2+(mc^2)^2$, the energy E cannot be real and unique. Energy of a particle must be real, unique, and positive.

The Heisenberg Uncertainty $\Delta x\Delta p<h/2$ is another relationship that is used in particle accelerators, where Δx is the position uncertainty, Δp is the momentum uncertainty, and h is the Planck constant. The eigenspace of the position operator in Quantum Mechanics is not unique. The Heisenberg relationship is false and cannot exist since the eigenspace of the position operator is not unique. Plank constant given by $E=hf$ cannot exist since the frequency has no independent existence without amplitude. If $E=hf$, then the amplitude will have to be determined by frequency, which is not possible since frequency has no existence without amplitude [9,2]. The existence of a chicken that laid an egg cannot be determined by the egg that it laid. Planck's energy relationship $E=hf$ leads to a chicken and egg dilemma; which came first? Plank's energy relationship $E=hf$ has no existence. The Heisenberg relationship $\Delta x\Delta p<h/2$ has no existence [9].

The problem is not just the invalidity of the energy relationship $E^2=(pc)^2+(mc^2)^2$, the derivation of this relationship is also invalid. We know that the derivation of the energy relationship is invalid since light is not relative. Further, the relativity factor $\gamma=1/(1-v^2/c^2)^{1/2}$ applies for constant speed v, and cannot be used during the acceleration stage of the particle to reach the speed v from the standstill. The relativity factor γ derived for the lateral plane (y,z) is not a valid relativity factor in the direction (x-axis) of motion of the frame.

Observers cannot bend light, and hence the relativity factor or the Lorentz factor $\gamma=1/(1-v^2/c^2)^{1/2}$ has no existence. The relativity factor $\gamma=1/(1-v^2/c^2)^{1/2}$ is also a result of using the average forward and return time of a beam of light as the time in Special Relativity. The average forward and return time of a beam of light is not given by the clocks. Average forward and return time of a beam of light cannot be obtained in run time. The average forward and return time of a beam of light is only available after the fact or off-line. Special Relativity based on after the fact (past) average forward and return time of a beam of light is useless for describing on-line dynamic systems that run on one-way time. Special Relativity cannot govern on-line dynamic systems.

There is a major problem hidden in the energy relationship $E^2=(pc)^2+(mc^2)^2$ in Special Relativity. As we are going to see, if the energy of a particle is given by $E^2=(pc)^2+(mc^2)^2$, the energy is not real, not scalar.

One of the often repeated mantras in Special Relativity is the claim that there is no absolute frame. But, the energy relationship $E^2=(pc)^2+(mc^2)^2$ is a contradiction to that claim. The energy relationship $E^2=(pc)^2+(mc^2)^2$ implies that there is a hidden hypothetical absolute frame in Special Relativity. In hindsight, Special Relativity implicitly takes a hypothetical beam of light orthogonal to the motion of an object as the absolute frame.

Time in Special Relativity is the average forward and return time $t=t_{ave}$ of a beam of light where, $t_{ave}=(t_a+t_b)/2$, t_a is the forward time, t_b is the backward time. System dynamics cannot be described by the average forward and return time of a beam of light. Clocks provide one-way time. Average forward and return time of a beam of light does not tick on clocks. The Lorentz factor $\gamma=1/(1-v^2/c^2)^{1/2}$ is an outcome of using the average forward and return time of a beam of light. The Lorentz factor does not apply with one-way time given by clocks. Clocks do not give the average forward and return time of a beam of light. Average forward and return time has to be obtained after the fact, off-line. Clocks cannot give the average forward and return time of a beam of light. Average forward and return time of a beam of light that is required for Special Relativity cannot be read on clocks. Clocks are incompatible with Special Relativity and General Relativity.

If time is relative, you cannot prevent time from being directional. Time in Special Relativity is directional. Time cannot be directional. Time must be scalar. Time cannot be relative. Lorentz Transform and Special Relativity that have no existence without relative time cannot exist.

Clocks are not applicable in the Lorentz Transform

and in Special Relativity since clocks do not tick average forward and return time of a beam of light. We cannot run experiments to validate Special Relativity using clocks. Taking clocks on airplanes to demonstrate the display of clocks is relative, and using the reading discrepancies of the clocks to claim that it validates Special Relativity is simply ridiculous. Clocks do not determine time. Clocks break down the time into smaller intervals. Average forward and return time of a beam of light does not tick on clocks. What ticks on clocks is useless in Special Relativity and General Relativity. Any discrepancy of the display of a clock with its speed does not indicate that the time itself is relative; it indicates that the mechanism is speed dependent.

A clock is not a clock until it is synchronized with the definition of time, a day or a year, for the environment the clock is in. The time delay it takes for us to observe the display of a distant clock varies with the distance to the clock and it does not indicate that the time is relative. If you run towards a lightning strike, your observed time delay of the event is shorter than the observed time delay of the same event by someone who runs away from the lightning strike. It is the observed time delay of an event that is relative, not the time itself.

Special Relativity does not deal with time itself, it deals with observed time delay of events. Observed time delay of an event does not determine the laws of nature. Laws of nature are not determined by the observers. Equations in Special Relativity and General Relativity are associated with the observed time delay of events, not time itself. Special Relativity and General Relativity deals with the distance traveled and the time delay, t, taken to travel the distance. The distance x traveled is not space. Time delay, t, taken to travel the distance x is not the time itself. There is no spacetime in the Lorentz Transform, Special Relativity and General Relativity. What they have is distance-delay, not space-time.

The mechanism of a clock is relative. The speed of a clock is affected by the environment the clock is in since the mechanism of a clock is affected by the environment. Time is not determined by clocks. Time itself cannot be relative. It is the mechanism of the clocks that depends on the speed of motion, not the time itself. It is the mechanism of clocks that depends on gravity, not the time itself. Clocks do not tick our definition of time, a day or a year, unless clocks are in synchrony with the day or the year for the environment clocks are in. Clocks do not display time itself; clocks display time delay, time width. Clocks indicate passing of time. Clocks are engineered to break down our definition of time, a day or a year, into smaller intervals.

"Our definition of time, a day or a year, is not determined by clocks. We engineered clocks to break down the day or the year into smaller intervals."

If we are running toward an event, the observed time delay of that event depends on the speed we travel toward the event. It is the observed time delay of an event that is relative, not the time itself. Time does not exist until we define it. If we observe the time at a distant clock as 12:00:00 when our clock displays 12:00:01, it does not indicate that the time is relative. It only says that the light carrying the information from the distant clock has taken 1 second to reach us. If we are moving towards the distant clock, the time delay for us to observe the display of the distant clock will decrease. If we are moving away from the distant clock, the time delay for us to observe the display of the distant clock will increase. That does not mean time itself is relative. It only means that the observed time delay of an event is relative, which is obvious. The observed time delay of an event is not the time itself. Clocks are incompatible with Lorentz factor, Special Relativity, and General Relativity that are based on the average forward and return time of a beam of light.

"Time does not exist until we define it. Time itself cannot be relative. It is the time delay of an observed event that is relative. Special Relativity and General Relativity do not deal with time itself; they deal with time delays of observed events. Clocks are incompatible with the Special Relativity and General Relativity since Special Relativity and General Relativity are based on the average forward and return time of a beam of light. Clocks do not tick average forward and return time of a beam of light."

In Special Relativity, time is also assumed to be relative. Time is a definition. Time does not exist until time is defined using the periodic motion of objects of mass or waves. In Special Relativity time is considered as an entity given by clocks. Clocks do not define time. Clocks are useless unless they are in synchrony with a defined time for the environment clocks are in. Clocks are engineered devices. We cannot engineer time. We cannot engineer how time passes. We cannot engineer how we age. How old we get is not determined by the clocks we engineer. We design clocks to break down the time we have already defined into small intervals. If those small intervals do not add up to a day or a year, then, those clocks are simply useless; they do not represent the time.

Time has to be defined first in order to engineer and build clocks. We do not build clocks to define time. We define time in terms of an earth-day or an earth-year. The earth-day or the earth-year is independent of the planet or galaxy you are on. Clocks are engineered to break down the time, a day or a year into smaller intervals. Clocks do not determine the day or the year. The day or the year does not depend on the clocks.

We do not age by the clock. Our age is not affected by the speed of a clock ticking. Our age in earth years is not determined by clocks. Our age in earth year is independent of the observer motion since the orbit of the earth or planet is independent of the motion of observers. Observers cannot deorbit planets. Observers cannot derail trains. Observers

cannot bend light. Time cannot be relative. An earth day or an earth year is the same whether you are on earth or on a moving spaceship. The claim that time is relative in Special Relativity is false. Time itself is not relative. It is the time delay of an observed event that is relative, not the time itself. Time and time delay of an observed event are not the same. The time delay of an event is independent of instances of time. The distance traveled is independent of the coordinates in space. Distance-delay is independent of space-time.

Time of an event is not given by the average forward and return time of a beam of light. Observation of an event is associated with one-way time. Special Relativity is associated with two-way average forward and return time. Two-way forward and return time is not required for observation. Two-way forward and return time is only required for probing. Probing deals with time delay, not the time itself. Observing the time of a distant clock involves time delay that depends on the velocity of the observer. The display of the clock that is observed is unaffected by the time delay required to observe it. The observed value of a clock at a given distance does not change with the observer speed and direction of motion. It does not matter how fast observers are moving or how different their speeds are, if all the observers are at the same distance from the clock tower, they all have the same reading, no difference.

The time on a distant clock does not vary with the observer motion. What is displayed on a distant clock is not affected by the time delay it takes for us to observe the display value on the distant clock. Observer motion cannot affect what a distant clock displays and how it ticks. The speed of ticking of a distant clock is independent of observer motion. It is the observed time delay of an event that is relative, not the time itself. The observed time delay of an event and time itself are not the same. Special Relativity and Lorentz Transform are meaningless; they have no existence. Time is not relative. Time cannot be relative. If time is relative, time will be directional [6]. Time must be non-directional, time must be scalar.

There is no acceleration without motion and hence Einstein's principle of equivalence is invalid. Light does not propagate on geodesics. Light does not have direction restrictions in a vacuum. Light can travel in any direction in a vacuum irrespective of whether gravitational objects are present or not. A beam of light orthogonal to a geodesic does not take geodesics. Light cannot take a curved path at constant speed.

Gravity has no effect on light in the absence of a medium. A mass does not occupy the space, it is the volume of an object that occupies the space. A mass cannot warp the space even if the space is warpable. If the space is warpable, it is the volume of an object that would warp the space.

The concept of an object warping space is meaningless. An object occupies space. An object does not warp space. Space is not warpable. Time is

not an axis since neither the past nor the future is accessible. Time is a moment, not a dimension. Space and time are mutually independent and there is no spacetime as a single entity of space and time. The distance-delay in Special Relativity is not space-time.

Time is not relative. Lorentz Transform with Einstein's Relativity Factor ɣ as the Transformation Factor is not unique. Lorentz Transform, Special Relativity, and General Relativity cannot exist [8]. When Special Relativity has no existence, Quantum Mechanics has no existence; Modern Physics has no existence.

When $E^2=(pc)^2+(mc^2)^2$ cannot exist, nothing meaningful can come out from particle accelerators. Fundamental particles of nature cannot be obtained by colliding charged particles. What we obtain by applying $E^2=(pc)^2+(mc^2)^2$ and the Heizenberg Uncertainty principle for the observations from particle accelerators such as Large Hadron Collider (LHC) is simply meaningless since $E^2=(pc)^2+(mc^2)^2$ and the Heizenberg Uncertainty principle cannot exist [2,3]. LHC can be used to prove anything. You can go on colliding until you hit the jackpot. If it is possible to obtain fundamental particles of nature by colliding particles, all you need is a single collision.

When accelerating charge particles collide, they generate radiation bursts. These bursts are contaminants that must be removed from the crash site if one wants to obtain the fundamental particles resulting from the collision. Particle accelerators are useless unless these radiation bursts are filtered out. These radiation bursts cannot be isolated. LHC is a result of a mistaken belief that it is possible to obtain the fundamental particles of nature by colliding charge particles. LHC is a result of invalid Special Relativity energy relationship $E^2=(pc)^2+(mc^2)^2$. Fundamental particles of nature cannot be obtained by colliding charge particles. Let us see what is wrong with the energy relationship $E^2=(pc)^2+(mc^2)^2$.

II. **WHAT IS WRONG WITH ENERGY** E **IN SPECIAL RELATIVITY GIVEN BY** $E^2=(pc)^2+(mc^2)^2$
Lemma:

If mass of an object is relative, m′=ɣm, the relative momentum p=m′v and the relative energy E=m′c^2 cannot coexist under the constraints that the energy E must be real, positive, and unique. When they cannot coexist, Special Relativity has no existence.

Special Relativity is based on the false proclamation that the propagation of light is relative, and the mass of an object depends on its speed and is governed by the Lorentz factor. Propagation of light is not relative [6,4]. The mass of an object cannot depend on its speed. The mass itself cannot be relative. Mass of an object cannot depend on acceleration. It is the acceleration of a moving object that depends on its mass. Mass cannot vary with the motion. Mass is independent of motion. Mass is not energy. Energy is not mass. There is no mass energy duality. Energy is the kinetic energy of particles of

mass. Energy has no existence in the absence of mass and hence mass cannot be converted to energy.

Any entity with momentum must be able to be brought to a stop by applying equal and opposite momentum. We cannot bring light to a halt by applying a force. We cannot even apply a force on light. We cannot apply a force on the massless. Light has no momentum. Any entity without standstill existence cannot have momentum. Any entity without standstill existence cannot be relative. Light has no standstill existence. Light cannot be relative. No mass can have speed c relative to light. Einstein's motion mechanics of objects of mass are associated with the speed of light c for the reason that Einstein falsely assumes a beam of light orthogonal to the moving entity as the absolute frame of reference. Einstein further assumes falsely that the light is relative and behaves as golf balls. Einstein has given light a fake momentum.

Mass cannot be converted to electromagnetic potential energy since electromagnetic waves (light) have no momentum and the momentum of a mass must be conserved in a closed system. It is not the mass that is converted to electromagnetic potential energy, it is the loss of potential energy of electrons in atoms that is converted into the electromagnetic potential energy. The generation of electromagnetic waves is not a result of mass conversion.

If light had momentum and energy, space wouldn't be such a cold place. Light has no energy. Light has no temperature. What light has is electromagnetic potential energy. Electromagnetic potential energy is not energy unless it is converted to energy by charge particles of mass. There is no energy or temperature without mass. The claim in Special Relativity that mass increases with motion is false. The claim in Special Rel;ativity that a mass can be converted into energy is false. Mass is conserved. Light has no momentum, no energy, no temperature, no entropy. Light is useless in the absence of charge particles. Light provides a means to transfer energy from one place to distant places in the presence of charge particles.There is no light in the absence of charge particles. There is no energy, kinetic energy, temperature, in the absence of charge particles. There is no light without mass.

In Special Relativity, mass itself is assumed to be dependent on speed governed by the Lorentz factor. In other words, in Special Relativity, the mass of an object is assumed to be relative. As a result, in Special Relativity, the momentum and the energy of an object of mass is relative. The momentum p and the energy E of a particle moving at speed v in Special Relativity are given by,

$$p=m'v \qquad (2.1)$$
$$E=m'c^2 \qquad (2.2)$$
$$m'=\gamma m \qquad (2.3)$$
$$\gamma=1/(1-v^2/c^2)^{1/2} \qquad (2.4)$$

It is noteworthy that the $E=m'c^2$ is a result of misapplying the Lorentz factor $\gamma=1/(1-v^2/c^2)^{1/2}$ for the accelerating stage of a particle from standstill to reach the constant speed v. The Lorentz factor that holds

only for constant speed v cannot be used for an accelerating stage. The derivation of $E=m'c^2$ in Special Relativity is invalid.

The energy E must always be real, positive, and unique; this must also be the case when the mass is relative for Special Relativity to exist. Special Relativity has no existence if the energy E is not real, positive, and unique when mass is relative.

It is not sufficient for the momentum p and energy E to be real individually and have individual real identities as $p=m'v$ and $E=m'c^2$, they must also be able to coexist and remain real; they cannot sacrifice their real existence for the benefit of coexistence. The energy E cannot lend itself to be complex vectors for the sake of its coexistence with the momentum p when the mass is relative $m'=\gamma m$.

The relationship for their coexistence can be obtained by joining the relationships $p=m'v$ and $E=m'c^2$, and making them speed independent. In order to obtain the condition for the coexistence of the momentum $p=m'v$ and $E=m'c^2$, we have to represent the energy E as a function of momentum p, which is in fact one of the primary relationships in Special Relativity that Modern Physics is founded upon. In fact, there would be no Modern Physics without the expression that represents the relationship between the momentum and energy when the mass is proclaimed to be relative as it is done in Special Relativity.

Bringing the momentum $p=m'v$ and $E=m'c^2$ into a single joint relationship that mutually depends on E and p is simple and can be found in any physics textbook. However, the consequences of the joint relationship between the energy E and momentum p have gone undetected or unnoticed.

The joint relationship between the $p=m'v$ and $E=m'c^2$ in Special Relativity makes Special Relativity invalid; it makes Special Relativity non-existent. The momentum p as $p=m'v$ and the energy E as $E=m'c^2$ cannot coexist under the constraints that the energy E must be real, positive, and unique. The energy E cannot be real, positive, and unique if the mass of an object depends on its speed by the Lorntz factor γ. When they cannot coexist, Special Relativity has no existence.

From equations (2.1) and (2.2), we have,
$$(pc)^2/(mc^2)^2=\gamma^2(v/c)^2 \qquad (2.5)$$
$$E^2/(mc^2)^2=\gamma^2 \qquad (2.6)$$
Subtracting equation (2.5) from equation (2.6) and substituting $\gamma=1/(1-v^2/c^2)^{1/2}$, we have,
$$E^2/(mc^2)^2-(pc)^2/(mc^2)^2=1 \qquad (2.7)$$
$$E^2=(pc)^2+(mc^2)^2 \qquad (2.8)$$
So, for Special Relativity to exist, when we have a particle of mass m moving at speed v with momentum $p=m'v$ and the energy $E=m'c^2$, the energy E and the momentum p must be bound by the relationship $E^2=(pc)^2+(mc^2)^2$.

In Special Relativity, the energy of the particle is given by the solution to the momentum and energy relationship $E^2=(pc)^2+(mc^2)^2$. The mockery of Special Relativity is clear from the solution to the energy relationship $E^2=(pc)^2+(mc^2)^2$. If E is given by the

relationship $E^2=(pc)^2+(mc^2)^2$, the energy E is not real and unique.

Theorem:
If the energy E is given by $E^2=(pc)^2+(mc^2)^2$, then, the energy is a vector pair given by $E=pc+jmc^2$ and $E^*=pc-jmc^2$, where * denotes the conjugate.

Proof is straightforward. We can write $E^2=(pc)^2+(mc^2)^2$ as,

$$E^2=(pc)^2+(mc^2)^2 \qquad (2.9)$$
$$E^2=(pc)^2-(jmc^2)^2 \qquad (2.10)$$
$$E^2=(pc+jmc^2)(pc-jmc^2) \qquad (2.11)$$
$$E^2=EE^* \qquad (2.12)$$

where, E and E^* are vectors given by,

$$E=pc+jmc^2 \qquad (2.13)$$
$$E^*=pc-jmc^2 \qquad (2.14)$$

Equations (2.13) and (2.14) can also be written as,

$$E=(p+jmc)c \qquad (2.15)$$
$$E^*=(p-jmc)c \qquad (2.16)$$
$$E=Pc \qquad (2.17)$$
$$E^*=(P^*)c \qquad (2.18)$$
$$E^2=(PP^*)c^2 \qquad (2.19)$$
$$P=(p\pm jmc) \qquad (2.20)$$

The actual momentum vector P in Special Relativity is given by $P=(p\pm jmc)$.

Lemma:
The actual momentum P in Special Relativity is not real and given by the vector pair $P=(p+jmc)$ and $P^*=(p-jmc)$, where $p=\gamma mv$.

Corollary:
Wherever the Lorentz factor γ appears, the time must be the average forward and return time of a beam of light, not the time given by clocks. The Loretz factor γ is incompatible with the time given by clocks. Clocks are not engineered to give the average forward and return time of a beam of light.

In Special Relativity, the energy is no longer real. In Special Relativity, momentum is no longer real. In Special Relativity, the energy of a particle has a real energy component pc and an imaginary energy component $\pm j(mc^2)$. Momentum in Special Relativity has a real momentum component p as well as an imaginary momentum component $\pm j(mc)$. When the momentum p is zero, p=0, the so-called rest energy of a particle in Special Relativity is imaginary and given by $E=\pm jmc^2$. Stationary particle in Special Relativity has an imaginary momentum $p=\pm j(mc)$. It is this imaginary momentum $p=\pm j(mc)$ that gives a particle imaginary rest energy $E=\pm j(pc)$ or $E=\pm jmc^2$.
We can also write the energy E as,

$$E=E_R+jE_I \qquad (2.19)$$

Where,

$$E_R=pc \qquad (2.20)$$
$$E_I=mc^2 \qquad (2.21)$$

The rest energy of a particle $E=\pm j(mc^2)$ is imaginary and hence a mass m does not have rest energy, $E\neq mc^2$. If it is imaginary, it does not exist.

Einstein's celebrated mass-energy relationship $E=mc^2$ is imaginary, $E=\pm jmc^2$, and it does not exist. The actual Einstein's mass-energy energy relationship in Special Relativity is $E=\pm jmc^2$, $E\neq mc^2$. The real component $E_R=pc$ in Special Relativity does not represent the energy of a particle and it is simply meaningless. It is the energy if a mass with momentum p is moving at speed c, which is meaningless since a mass moving at speed v to have the momentum $p=\gamma mv$ cannot have completely different speed c to generate energy $E_R=pc$. No mass or momentum can have speed c relative to light for it to have energy $E_R=pc$ since light is not relative and has no standstill existence.

The relationship E=pc indicates a particle of mass m having two speeds, speed v and speed c, which is not possible. The speed of a particle must be unique. The energy of a particle with momentum p cannot be given by the product pc. The speed of light has nothing to do with the energy of a particle. No particle has speed c relative to a beam of light propagating at the speed c. The real energy of a particle of mass m moving at speed v is not given in Special Relativity.

If $E=m'c^2$, for v<<c, one may have the approximate relationship $E\approx mc^2+(1/2)mv^2$ as it is done in Special Relativity. This is incorrect for two reasons. One, the derivation of $E=m'c^2$ is incorrect since it has been derived by applying the Lorentz factor in the accelerating stage for the mass to reach speed v from the rest. We cannot integrate the Lorentz factor from the initial speed v=0 to final speed v. The Lorentz factor cannot be used in the accelerating stage for the particle to reach the speed v from the rest and hence $E\neq m'c^2$. The second, $E=m'c^2$ has to coexist with $p=m'v$ as real and unique quantities when the mass of a particle is speed dependent by the Lorentz factor. When $E=m'c^2$ has to coexist with $p=m'v$, the energy is given by the relationship $E^2=(pc)^2+(mc^2)^2$, not by the individual relationship $E=m'c^2$. $E\neq m'c^2$ in Special Relativity, The approximate relationship $E\approx mc^2+(1/2)mv^2$ in Special Relativity is invalid; it does not hold, $E\neq mc^2+(1/2)mv^2$.

Lemma:
The energy E of a particle in Special Relativity is given by $E^2=(PP^*)c^2$, where the actual momentum P is given by the complex conjugate vector pair (P,P^*), $P=(p\pm jmc)$, which indicates that an observer can derail a train. Since an observer cannot alter the momentum of an object on its path, Special Relativity cannot exist.

Lemma:
A moving particle of mass has nothing to do with

the speed of light c. Speed of light cannot limit the speed of motion of an object of mass m. There is no universal speed limit.

Lemma:

The product pc does not represent the energy E of a mass m with momentum p. The product pc is meaningless, $E \neq pc$. The energy of a mass m with momentum p is given by $E=p^2/2m$. Energy of a particle has nothing to do with the speed of light c.

Theorem:

Mass of an object is independent of its speed. Mass of an object is not governed by the Lorentz factor ɣ. For mass m moving at speed v, $m' \neq \gamma m$, $m'=m$. The mass of an object is absolute.

Lemma:

A beam of light as the absolute frame of reference for any moving object of mass is implicit in Special Relativity. A beam of light cannot be taken as a frame of reference since light has no standstill existence and hence light is not relative and has no momentum.

We cannot substitute any momentum p in place of (mc) in Einstein's E=(mc)c and make the false claim that E=pc. E=pc does not apply even for light since light has no momentum p. In Special Relativity, the energy E of a particle with relative momentum p is a vector **E**=pc+j(mc)c and hence energy E=pc and the rest energy E=(mc)c cannot exist. Although the energy of a particle must be real, unique, and non-negative, the energy of a particle in Special Relativity is a complex conjugate pair of vectors **E**=pc+j(mc)c and **E***=pc−j(mc)c, and hence Special Relativity cannot exist. The energy of a particle with relative momentum p cannot be given by E=pc. E=pc is meaningless and has no existence $E \neq pc$, $E \neq mc^2$.

The Lorentz Factor itself is inconsistent with the claim that the speed of light c is independent of the speed v of the frame of reference since the Lorentz Factor contains the terms (c−v) and (c+v), which cannot exist unless the speed of light is dependent of the frame of reference.

The term (c−v) indicates a light burst moving forward and (c+v) indicates a light burst moving backward. A single light burst cannot move both forward and backward simultaneously as the presence of (c−v) and (c+v) in the Lorentz Factor suggests. The Lorentz Factor derived for average forward and return time does not apply for one-way instantaneous time. The Lorentz Factor and the claim that the speed of light is frame independent are mutually contradictory and cannot coexist. It is not just the speed of light that must be frame independent, both the speed and the path of light must be frame

independent. No Special Relativity is required for light to propagate at constant speed relative to observers.

The derivation of energy in Special Relativity by integrating a quantity dependent on the Lorentz factor for the acceleration stage from standstill to speed v is invalid since the Lorentz factor is not applicable for accelerating bodies. The Lorentz factor is applicable only for motions at constant speeds from the start.

The Lorentz Factor is a self-contradiction. The Lorentz Factor is not unique. There are an infinite number of Lorentz Factors that are equally valid. Special Relativity and General Relativity that depend on the Lorentz Factor and run on the average forward and return time of a beam of light are self-contradictions; they are not applicable for real time systems that run on instantaneous one-way time. Real-time systems do not run on the average forward and return time of a beam of light. Clocks are incompatible with Special Relativity that runs on average forward and backward time of a beam of light.

Since **E**=jmc², mass cannot be converted to energy. Mass and energy are not equivalent. There is no energy in the absence of mass. There is no temperature in the absence of mass. Mass must be conserved since energy has no existence in the absence of mass. Nuclear energy is not mass converting to energy. Nuclear energy is a result of breaking the nuclear bonds. There is no mass loss in a nuclear reaction.

Lemma:

Mass is Conserved. Mass and energy are not equivalent. Energy/temperature has no existence in the absence of particles of mass. Light has no energy/temperature.

III. ENERGY IN SPECIAL RELATIVITY IS NOT SCALAR, NOT UNIQUE

The energy E in Special Relativity given by **E**=pc+jmc² has two components, the real energy E_R=pc and the imaginary energy E_I=jmc². This shows that Special Relativity has an implied absolute frame of reference. The inherent absolute frame of reference in Special Relativity is a hypothetical beam of light orthogonal to the motion of the particle. This is reminiscent of Einstein's vertical beam of light in a moving train thought experiment, the genesis of Special Relativity. The motion in Special relativity takes place orthogonal to a hypothetical beam of light. That means, Special Relativity has a hypothetical absolute frame of reference for any moving mass. It is this hidden hypothetical beam of light as the absolute frame of reference that has made the motion of an object of mass dependent on the speed of light c in Special Relativity. The effect of c on the motion of mass m in Special Relativity is imaginary, not real.

Lemma:

What is implicit and hidden in Special Relativity is a hypothetical beam of light orthogonal to the motion of a mass as the absolute frame.

Corollary:

Light is not relative since light has no standstill existence. A beam of light cannot be a frame of reference for a motion of an object of mass even hypothetically.

In Special Relativity, the hypothetical absolute frame varies with the direction of the motion of the mass since the hypothetical absolute frame in Special Relativity is a beam of light orthogonal to the direction of motion of the mass. In Special Relativity, a motion of an object takes place relative to an orthogonal beam of light. Under the false assumption that the light is relative in Special Relativity, it is relative to this hypothetical orthogonal reference beam of light that an object of mass m has speed c relative to light and hence imaginary kinetic energy vector $E_l=jmc^2$ with imaginary kinetic energy $E_l=mc^2$. This energy is imaginary since the mass m has no actual motion orthogonal to the direction of the motion of the mass given by the velocity **v**.

No mass can have speed c relative to light since light is not relative. Light is not relative since light has no standstill existence. A mass cannot have a speed c relative to a beam of light since light has no standstill existence and cannot be brought to a stop. Maxwell equations for propagation of light are not relative [6]. The velocity of the reference light beam **c** and the velocity **v** of the mass m are orthogonal; this velocity **c** on the mass m is hypothetical and has no real existence; energy and momentum associated with it are hypothetical, not real. Special Relativity is invalid from the very start since light is not relative and has no momentum [6]. Einstein's vertical light beam in a moving train thought experiment is ubiquitous in Special Relativity.

Lemma:

The false assumption in Special Relativity that the light is relative gives a mass the rest energy, and this rest energy of a mass m in Special Relativity is imaginary, $E=jmc^2$, $E \neq mc^2$.

In Special Relativity, the velocity of a particle, **v** is always orthogonal to a reference beam of light with velocity **c**. The γ**v** and **c** are 90º degrees out of phase. In special Relativity, velocity of a particle is assumed to be orthogonal to the velocity of a beam of light. Under this assumption, a particle also has the velocity **c** orthogonal to the velocity **v** of the particle relative to a beam of light, which is the absolute reference frame in Special Relativity. The energy of the particle in Special Relativity comes from these two orthogonal velocities **v** and **c**. The velocity **v** is real. The velocity **c** is imaginary.

The relative kinetic energy due to the speed c is imaginary, not real. Einstein's famous rest energy $E=mc^2$ is not real, $E=j(mc^2)$. Since light is not relative, a beam of light cannot be used as a reference frame. Without a beam of light as the reference frame, there would be no rest energy $E=mc^2$. The rest energy

$E=mc^2$ is simply meaningless, an oxymoron. A mass at rest cannot have real kinetic energy. Besides, in Special Relativity, the rest energy is imaginary and given by $E=\pm jmc^2$, $E \neq mc^2$. No mass can have real or imaginary kinetic energy $E=mc^2$ since no rest mass can start at speed c. A mass at rest cannot have kinetic energy $E=mc^2$. The rest energy $E=mc^2$ is an oxymoron. In Special Relativity $E=\pm jmc^2$, $E \neq mc^2$.

In Special Relativity, time is always measured as the average forward and return time of a beam of light. It is the definition of time in Special Relativity as the average forward and return time of a beam of light that lead to the relativity factor $\gamma=1/(1-v^2/c^2)^{1/2}$. This relativity factor γ does not appear without the average forward and return time of a beam of light in Special Relativity. Ordinary clocks do not provide the average forward and return time of a beam of light and hence ordinary clocks are incompatible and useless for Special Relativity experiments.

There are no clocks that give the average forward and return time of a beam of light. Clocks with the mechanism based on the average forward and return time of a beam of light that are required for the experimental validation of the Special Relativity have never been engineered. Testing of Special Relativity cannot be done using ordinary clocks. We cannot claim that the time is relative by carrying a clock on a plane around the world. We cannot claim the time depends on gravity by taking a clock on to a mountain. It is the mechanism of a clock that is affected by the speed and gravity, not the time itself. Clocks do not determine time. Clocks are engineered to break down the time that has already been defined into smaller intervals. What is displayed on a clock is useless unless the clock is synchronized for a day or a year for the environment the clock is in.

The $E=mc^2$ in Special Relativity is invalid. In Special Relativity the so-called rest energy $E=mc^2$ is not real. In Special Relativity the so-called rest energy is given by $E=\pm jmc^2$. There is no such entity called rest energy. A mass m at rest cannot have kinetic energy. The imaginary rest energy $E=\pm jmc^2$ stems from the imaginary assumption that the light behaves as golf balls and hence a stationary mass m has speed ±c relative to a beam of light.

Light does not behave as golf balls. Light cannot behave as golf balls since light has no standstill existence. Light has no momentum. If light has momentum, light must be able to be brought to a complete stop by applying equal and opposite momentum or applying an external force. Light cannot be brought to a stop. We cannot even apply momentum to light. We cannot apply a force on light. If an entity has momentum, we should be able to change the momentum; we should be able to apply a force and manipulate that entity, but we cannot do that with light. If an entity has momentum, we should be able to alter its momentum by applying an external force, but we cannot do that with light. The massless has no momentum, no temperature, no energy, no

entropy, and the massless is unaffected by gravity.

Light cannot be manipulated by applying a force simply because light has no momentum. Gravity has no effect on light simply because light has no mass, no momentum. Gravity has no effect on the massless. Light is not relative. Observers cannot bend light. Gravity cannot bend light. Observers cannot derail trains. Although it was assumed in Special Relativity that light is relative and behaves as golf balls, it was never proven and cannot be proven. Maxwell equations for propagation of light are not relative. Maxwell equations for propagation of light cannot be transformed onto an inertial frame. Light does not propagate relative to moving frames.

The energy of a particle in Special Relativity is given by $E^2=(pc)^2+(mc^2)^2$, which has solutions $\mathbf{E}=pc+jmc^2$ and $\mathbf{E}=pc-jmc^2$. This shows the mockery of Special Relativity and its energy relationship $E^2=(pc)^2+(mc^2)^2$. The energies pc and mc^2 are vectors that are orthogonal, the real energy $E_R=pc$ and the imaginary energy $E_I=mc^2$, where $\mathbf{E}=E_R\pm jE_I$. Energy of a particle must be real, must be unique, must be positive. Special Relativity and its energy relationship $E^2=(pc)^2+(mc^2)^2$ are meaningless, unreal, and cannot exist; it cannot describe the motion mechanics; it cannot describe the motion of a particle of mass m. Obviously, Special Relativity that is based on the false assumption that light is relative and behaves as golf balls cannot describe reality since light is not relative and does not behave as golf balls.

Special Relativity is not required for light to propagate at constant speed relative to observers. Propagation of light is naturally observer independent since light propagates at constant speed on a constant path that can only be altered by the change of the medium. Observers cannot bend light. Observers cannot derail trains. The speed of a train on its track is observer independent. Speed of light on its constant path that cannot be altered by observers is observer independent.

In Special Relativity, mass of an object is relative, $m'=\gamma m$, the energy is relative and given by $E=m'c^2$; the momentum is relative and given by $p=m'v$ or $p=\gamma mv$. Special Relativity obtained the relative energy $E=m'c^2$ by applying Lorentz factor $\gamma=1/(1-v^2/c^2)^{1/2}$ for the accelerating stage of an object to reach the speed v from the standstill. Work done for a mass m to reach speed v from standstill is obtained in Special Relativity by applying the Lorentz factor for the accelerating stage. The Lorentz factor cannot be a part of an integration for speed from initial speed v=0 to final speed v. The Lorentz Factor cannot be applied for accelerating objects; it only applies for constant speeds. The relationship $E=m'c^2$ or $E=\gamma mc^2$ is a result of this violation; a result of integrating $\gamma=1/(1-v^2/c^2)^{1/2}$ for all the speeds from v=0 to v. The derivation of $E=\gamma mc^2$ in Special Relativity is incorrect. We cannot integrate $\gamma=1/(1-v^2/c^2)^{1/2}$ for varying v from v=0 to v. The v in $\gamma=1/(1-v^2/c^2)^{1/2}$ is a constant speed v from the start, from t=0.

Since c is a constant, the relationship $E=m'c^2$ or $E=\gamma mc^2$ indicates that the mass m of an object is

relative or varies with speed v, $m'=\gamma m$. The mass m of an object cannot be relative. The mass of an object cannot vary with speed. It is the scale, the measuring instrument, that varies with the speed, not the mass m itself. It is the measuring device that is relative, not what is being measured. It is the observed time delay of an event that is relative or depends on the speed of the observer, not the time itself. It is the observed distance of an event that is relative or depends on observer speed, not the space itself. It is the mechanism of a clock that depends on the speed and gravity, not the time itself. The display of a clock does not represent the time unless the clock is synchronized for a defined time. We have defined time as a day or a year. We engineer clocks to break down the day or the year into smaller intervals. Clocks do not determine the time, a day or a year.

Mass of an object cannot depend on speed. Mass cannot be relative $m'\neq\gamma m$. If mass is relative, we have the relative momentum $p=m'v$ and the relative energy $E=m'c^2$ in Special Relativity. The energy and momentum of an object cannot be real and unique if the mass of the object is relative or if $m'=\gamma m$. The relative momentum $p=m'v$ and the relative energy $E=m'c^2$ cannot coexist. If they cannot coexist, Special Relativity cannot exist. If the relative momentum is $p=m'v$ and the relative energy is $E=m'c^2$, then the energy will be given by $E^2=(pc)^2+(mc^2)^2$, which leads to the energy vectors $\mathbf{E}=pc\pm jmc^2$ and the momentum vectors $\mathbf{P}=(p\pm jmc)$. Energy of a particle cannot be a complex vector.

Relationships $E=m'c^2$, $p=m'v$, and $E^2=(pc)^2+(mc^2)^2$ in Special Relativity are invalid since light is not relative. A mass cannot depend on its speed $m'=m$, $m'\neq\gamma m$. When we put together two equations based on relative mass, $E=m'c^2$ and $p=m'v$, where $m'=\gamma m$, what we get is $E^2=(pc)^2+(mc^2)^2$ that has no real solution. The derivation of the relationship $E=m'c^2$ in Special Relativity is invalid since the Lorentz factor cannot be used for the accelerating stage of a mass to reach the speed v from standstill. The mass of an object cannot depend on speed v, mass cannot be relative, $m'\neq\gamma m$. The mass of an object is independent of its speed.

In addition, the relationship $E^2=(pc)^2+(mc^2)^2$ also indicates that the momentum in Special Relativity is given by $\mathbf{P}=p\pm j(mc)$ and a mass m has a momentum $j(mc)$ that is orthogonal to the momentum $\mathbf{p}$, where $\mathbf{p}=\gamma m\mathbf{v}$. For a mass m at standstill (p=0), the mass m

in Special Relativity has an imaginary momentum $P=\pm j(mc)$; this is not real. There is nothing more nonsensical than a mass m at standstill having a rest momentum $j(mc)$ orthogonal to the relative momentum $p=m'v$, and rest relative energy $j(mc^2)$ orthogonal to the relative energy pc as the equation $E^2=(pc)^2+(mc^2)^2$ suggests. This equation that stems from Special Relativity, $E^2=(pc)^2+(mc^2)^2$ shows a mass having energy given by two orthogonal vectors, where one is real and the other imaginary. The total energy is given by the Pythagoras relationship.

The energy E of a particle in Special Relativity is given by the solutions to the equation $E^2=(mc^2)^2+(pc)^2$, and as a result we have, $E=pc+jmc^2$ and $E=pc-jmc^2$. The energy is no longer real. According to the equation $E^2=(mc^2)^2+(pc)^2$ originated from Special Relativity, a mass has two orthogonal energies, imaginary energy $\pm jmc^2$ and real energy pc. Why should a mass m moving at velocity v have two energies that are orthogonal? How can the energy be directional? Yet, in Special Relativity, what you get is directional energies that are not unique.

A mass has nothing to do with the speed of light c unless the mass is moving at the speed of light c. A mass at standstill does not have speed c relative to light. Even if the mass is moving at speed c, the energy of the mass moving at the speed of light is $E=(1/2)mc^2$, $E \neq mc^2$. No mass can have speed c relative to light giving it rest energy $E=mc^2$ since light is not relative. Beside, the rest energy of an object of mass m relative to light is imaginary, $E=\pm jmc^2$. The false relationship $E=mc^2$ is a result of the false assumption in Special Relativity that light is relative and behaves as golf balls. It is clear that the so-called rest energy of a mass is not real since it is given by $E=\pm jmc^2$, $E \neq mc^2$.

Theorem:
If $E=m'c^2$ under the constraint that $p=m'v$, where, $m'=\gamma m$, and $\gamma=1/(1-v^2/c^2)^{1/2}$, then E cannot represent real energy and the momentum p cannot represent real momentum.

Although the equation, $E^2=(pc)^2+(mc^2)^2$, is simply nonsensical, it is widely used in particle accelerators. In fact, they might have nothing to do with particle accelerators without this incorrectly derived nonsensical equation $E^2=(pc)^2+(mc^2)^2$. You can prove anything you want using this equation in particle accelerators. A Particle accelerator is like a fortuneteller's 8th ball. You go on colliding particles until you get a data set that proves what you want to prove. If you can obtain fundamental particles by colliding charge particles, all you need is a single collision [7]. You cannot determine the fundamental

particles of nature by colliding charge particles. The energy equation $E^2=(pc)^2+(mc^2)^2$ in Special Relativity that is used in particle accelerators is invalid.

The fact is that it is not possible to obtain the fundamental particles of nature by colliding charge particles. When moving charge particles collide, it generates electromagnetic radiation bursts that are contaminants extraneous to the collision of the particles. These contaminating electromagnetic bursts must be removed for the proper analysis of collisions. It is the misinterpretation of these contaminating electromagnetic radiation bursts as new particles that led to a particle zoo.

Light is not particles. Light does not come as photons or light quanta [2]. If light consists of particles of energy $E=hf$, light has no existence [9]. The equation $E^2=(pc)^2+(mc^2)^2$ is invalid since it is a result of a wrong foundational assumption that the mass of an object is relative and depends on its speed, $m'=\gamma m$. The mass m of an object cannot be speed dependent. The mass m of an object cannot be relative. Mass is absolute. Time is absolute. Time delay of an event is relative. The distance to an event and time delay taken to travel the distance are relative. The distance-delay in Special Relativity is not space-time.

Mass is not energy. There is no energy without mass. Energy has no independent existence without the association of particles of mass. Mass cannot be converted to energy since energy has no existence without mass. Energy means the kinetic energies of particles of mass. Any other energies are potential energies. Potential energy is not energy unless they are converted into kinetic energy by particles of mass or charge particles of mass. Mass and energy are not equivalent. If light has energy, why is space cold?

Light has no energy. Electromagnetic waves have no energy. Light has no temperature. Light has no entropy. It does not matter how much light a vacuum contains, vacuum has no temperature. Light has potential energy that can be converted into kinetic energy in the presence of charge particles. Light has no existence without matter.

The claim that the light consists of photons of energy $E=hf$ is false [2]. Frequency of light has no energy. Frequency, $f=1/T$, has no energy, where T is the time period. Frequencies of electromagnetic waves have no energy, $E \neq hf$. Light has no energy. Electromagnetic waves have no energy. What light has is electromagnetic potential energy. Potential energy of light waves does not depend on the frequency. If light has energy, why is it that the space is cold although space has as much or more light as we have here on earth. It is only that light can generate kinetic energy or temperature in the presence of charge particles of mass. The generated

energy by light in the presence of charge particles is proportional to frequency as well as the amplitude of light. The claim that light consists of photons or particles of energy E=hf is meaningless.

Light has no momentum. If light has momentum, light must be able to be brought to a stop, but Light cannot be stopped. The claim in Special Relativity that light has a momentum is false. The potential energy of light cannot be represented as the product of pc, E≠pc. If all I have is my house and do not have any cash, all I have is a cash potential, no cash. I do not have cash unless I find a buyer to sell the house. Light has electromagnetic energy potential. That energy potential can be converted to energy in the presence of charge particles. In the absence of charge particles, light has no energy. The relationship E=pc does not hold for light.

The invalid representation of energy of a particle as E=pc is one of the major mistakes in Modern Physics. A particle cannot have a momentum p with speed v while the momentum p generates energy with speed c. The speed that gives a particle momentum cannot be different from the speed that converts the momentum to energy. Speed of a particle must be unique.

"The energy relationship that stems from Special Relativity is $E^2=(pc)^2+(mc^2)^2$ or $E^2=(\mathbf{PP}^*)c^2$, where $\mathbf{P}=(p\pm jmc)$."

In Special Relativity, a particle of mass m has two momentums, momentum p and momentum ±j(mc), that are orthogonal to each other, where p=m′v. It indicates that the imaginary momentum ±j(mc) and relative momentum p=m′v are orthogonal. Here, the rest mass m is given an imaginary momentum ±j(mc) relative to light; this cannot be done since light is not relative.

So, in Special Relativity, a mass has two momentums, one is real p and the other is the imaginary ±j(mc); p and ±j(mc) are mutually orthogonal. Imaginary momentum ±j(mc) has no real existence. The product of real momentum p and the speed of light, pc, does not represent anything meaningful. The product pc does not represent the energy of a particle. Neither does the pc represent light energy. The product pc is simply meaningless.

If a particle of energy E is given by E=pc and also E=ɣmc², then the velocity of the particle v must be equal to speed of light, v=c; otherwise, they are not compatible. They can only coexist only when v=c, but

when v=c, the Lorentz factor has no existence. When v=c, both Special Relativity and the Lorentz factor have no existence. Energy of a particle in Special Relativity cannot be given by E=pc and E=ɣmc². E≠pc. E≠ɣmc².

The energy relationship E=pc does not apply for light since light has no momentum. There is no momentum without kinetic energy. Light has no kinetic energy. There is no massless kinetic energy. There is no massless momentum. If E=pc applies to a mass, the speed of the mass v must be equal to the speed of light, v=c. But, when v=c, Special Relativity has no existence since v=c is a singularity in Special Relativity. E=pc in Special Relativity is simply meaningless. E=pc and E=ɣmc² cannot coexist. If mass itself depends on speed, m′=ɣm, energy cannot be real and unique. The motion of a particle of mass m has nothing to do with the speed of light c.

Further, in the equation $E^2=(pc)^2+(mc^2)^2$, there is also a hidden assumption that the imaginary momentum j(mc) of the mass m moving at the velocity of light **c** and the relative momentum p=m′v of the mass m′ moving at velocity **v** are orthogonal indicating that velocity of a beam of light, **c** and the relative velocity of a mass ɣ**v** are orthogonal. There is no reason for the velocity of light **c** and the relative velocity ɣ**v** of a mass m to be orthogonal. There is no reason for a rest mass to have a momentum j(mc); well, that is why it is imaginary. There is no reason for a particle of mass m moving at speed v to have energy given by $E^2=(pc)^2+(mc^2)^2$ or $E^2=(\mathbf{PP}^*)c^2$, where **P**=(p±jmc). In Special Relativity a particle has an overall speed **V**=ɣv±jc. There is no reason for a particle moving at speed v to have an overall speed **V**=ɣv±jc.

Lemma:
The energy E of a particle of mass m in Special Relativity is given by E=Pc or E=P*c, where **P**=(p±jmc).

If the momentum of a particle is p=mv, the energy of the particle must be given by $E=p^2/2m$, not by E=ɣpc, E≠ɣpc, not by E=ɣmc², E≠ɣmc². Speed of light c has nothing to do with the energy of a mass m unless the mass is moving at the speed of light c. There is nothing that prevents a mass from moving at speed greater than or equal to speed of light. If a mass m is moving at speed c, the energy of the mass is E=(1/2)mc² since no mass can start at constant speed. Einstein's E=mc² not real, E=j(mc²). Special Relativity has no existence.

In Special Relativity, the relative momentum of a particle has two orthogonal components **p**=ɣm**v** and

j(m**c**). If a particle has two orthogonal momentum components, then the relative direction is no longer the direction of the particle given by its real velocity **v**. This is a result of the false assumption that observers can bend light. Observers cannot bend light.

Observers cannot change the direction of an object. Observers cannot derail trains. Observers cannot derail light. Observers cannot deorbit planets. Galileo-Newton Relativity that alters the direction of a moving object relative to an observer cannot exist. Special Relativity that alters the direction of a beam of light relative to an observer cannot exist. Special Relativity that alters the path of light relative to an observer cannot exist. Einstein made the mistake of forcing the light to bend relative to observers; this forcing also puts Special Relativity in contradiction with the Lorentz Transform. We cannot force light to be relative, because the massless are not relative.

A vertically released burst of light from the bottom of a train moving at constant speed cannot take a vertical path relative to passengers inside the train. A vertical light burst in a moving train cannot take an angular path relative to observers outside the train. A vertical light burst from the bottom of a train propagates vertically while it lags behind relative to passengers inside the train. As a result, the vertical light burst shifts in a reverse angular path while propagating vertically at speed c relative to passengers inside. The vertical light burst travels vertically at speed c relative to observers outside the train. A vertical burst of light propagates vertically relative to passengers inside the train as well as relative to outside observers. The time taken for a light burst to travel a given distance is the same for observers inside the train as well as outside the train. There is no time dilation or contraction relative to observers. There is no distance dilation of contraction relative to observers.

It is the path of a light burst that shifts relative to passengers inside the train, not the propagation of light on the path. Forcing a hypothetical momentum on light where there cannot be a momentum is the fundamental mistake in Special Relativity. Special Relativity cannot exist. A train cannot be derailed relative to observers; that is the fundamental mistake in Galileo-Newton Relativity. A train cannot be off the track relative to observers. A passenger on an inertial frame cannot determine the speed of the inertial frame by throwing golf balls does not mean it has to apply for other means; we do not have to force that on light as Einstein did. A passenger on an inertial frame can determine the speed of the inertial frame using a burst of light since a burst of light has no momentum and does not behave as golf balls.

No Special Relativity is required for light to have constant speed c since light propagates on a constant path that can only be altered by a medium [4]. In Special Relativity as well as in the relationship $E^2=(pc^2)^2+(mc^2)^2$, time is not the time given by clocks. In the relationships in Special Relativity and in General Relativity, in Einstein's Relativities in general, the time is the average forward and return time of a beam of light, which is not given by clocks. The time that is defined as a day or a year, cannot be relative. The time, a day or a year, cannot depend on clocks. Clocks are engineered devices to break down the time, a day or a year, into smaller intervals. Clocks cannot determine the time, a day or a year. We do not grow old by the clocks we design. We cannot engineer how fast we age. An earth year is not determined by clocks.

"Time is a definition. There is no flow of time until we define a time width. We define the time in earth days or earth years. Clocks are engineered to break down the time, a day or a year, into smaller intervals. If clocks run slow or fast, it is a problem of clocks, not time itself; those clocks do not represent time. If we want a clock to represent time, the clock must be in synchrony with the definition of time for the environment the clock is in, for the frame of reference the clock is in. The observed time delay of an event is not the time itself. The observed time delay of an event depends on the motion of observers. Time itself is independent of observers. Time is not relative, $t'=t$, $t'\neq\gamma t$."

The mass of an object must be observer independent $m'=m$, $m'\neq\gamma m$. The mass of an object cannot depend on the speed of the object, or on the Lorentz factor. An object at rest cannot have rest kinetic energy. If the light is relative, a mass at rest has kinetic energy $E=mc^2$ relative to a beam of light. Since light is not relative, the relationship $E=mc^2$ is invalid, $E\neq mc^2$. Light is not relative. The mass of an object is not relative. Time is not relative. The energy of an object of mass has nothing to do with the speed of light unless the mass is moving at the speed of light, which is possible. There is nothing that can prevent an object of mass traveling faster than the speed of light.

A mass at rest has no kinetic energy. A mass has no rest kinetic energy, $E\neq mc^2$. If light propagates at constant speed c, it is just that. If mass is moving at speed v, it is just that. Light does not have to zip up the space and time to propagate at constant speed. The relationship $x/t=c$ is meaningless and does not

exist unless x is the distance traveled at time delay t. The relationship space/time=c is meaningless and does not exist. The distance x traveled is not the space. The time delay t taken to travel the distance x is not the time itself. It is $\Delta x/\Delta t$ that is the speed c, $\Delta x/\Delta t = c$, where Δx is the distance light travels for the time interval Δt. The ratio $\Delta x/\Delta t$ is independent of space and time coordinates. Special Relativity does not deal with space and time. Special Relativity only deals with distance traveled and time delay taken to travel the distance.

Lemma:
　　Space divided by time does not have to be a constant c for light to travel at constant speed c. Space x divided by time t has no meaning. The x/t has no meaning. Space coordinates do not have coordinate dependent time.

　　There is space. There is the time width we define. There is no spacetime as a single entity. What is there in Special Relativity, the Lorentz Transform, and General Relativity is the distance-delay, not space-time. Distance and time delay are mutually dependent. There is no distance traveled without a time delay. Space and time are mutually independent. There is no coordinate dependent time in space. Space does not know time exists. Time does not know space exists. Time does not come to existence until we define a time width, a day or a year. Spacetime as defined in General Relativity does not exist. The distance-delay function, which is erroneously referred to as space-time, in Relativity is not unique.
　　Mass cannot warp space even if the space is warpable. If space is warpable, it is the volume of an object that warps space, not the mass of an object. The claim in General Relativity that the mass warps space is false. Gravity is not acceleration. An apple on a tree has no acceleration. A falling apple has acceleration. A stationary object on the ground has no acceleration. Einstein's equivalence principle is incorrect. The foundation of General Relativity is false. The foundation of Special Relativity is also false since light is not relative.
　　Light is not anchored to space. Expanding space cannot change the wavelength. Space cannot expand [9]. Space is not warpable. The speed of light is determined by the Coulomb and Ampere parameters of vacuum, which are constants. No medium is required for the existence of Coulomb and Ampere parameters. No medium is required for the propagation of light.

Theorem:
　　In Special Relativity, the energy E of a particle is a vector. The energy E in Special Relativity is not real

and not unique. The energy E of a particle of mass m with speed v in Special Relativity is given by the vector **E**,
　　$\mathbf{E}=pc\pm jmc^2$,
where $p=m'v$, $m'=\gamma m$, $\gamma=1/(1-v^2/c^2)^{1/2}$, and c is the speed of light.

Corollary:
　　The energy of a particle in Special Relativity is not scalar. The energy of a particle in Special Relativity is a complex conjugate pair of vectors **E** and **E***. The energy must be scalar and hence Special Relativity cannot exist.

Lemma:
　　The energy **E** of a particle in Modern Physics is not unique since the energy **E** in Special Relativity can be given by both **E** and its conjugate, **E***. The energy of a particle of mass m must be unique and hence the foundation of Modern Physics is invalid.

Corollary:
　　In Special Relativity, the energies $\mathbf{E}_R=pc$ and $\mathbf{E}_I=j(mc^2)$ are orthogonal vectors. The real energy $\mathbf{E}_R=pc$ and the so-called rest energy $\mathbf{E}_I=j(mc^2)$ are 90º degrees out of phase.

　　This is reminiscent of Einstein's vertical light burst in a moving train thought experiment under the false assumption that light is relative and behaves as golf balls, the foundation of Special Relativity. Special Relativity, in hindsight, uses a beam of light orthogonal to the motion of an object as the absolute frame. Every motion in Special Relativity is relative to a beam of light orthogonal to it; it is this choice of an orthogonal beam of light as the absolute frame that has given a mass the rest energy under the assumption an object of mass can have speed c relative to light, a false conjecture. Light is not relative and does not behave as golf balls and hence a stationary object of mass cannot have speed c relative to a beam of light. Special Relativity is false in its foundation.

Property:
　　Although Special Relativity proclaims that there is no absolute frame, in hindsight, Special Relativity is based on a beam of light orthogonal to the motion of an object as the absolute frame. Inherent in Special Relativity is a hidden orthogonal beam of light as absolute frame. Light is not relative and hence a beam of light cannot be taken as a reference frame for a motion of an object of matter.

Lemma:
　　In Special Relativity, the conjugate pair of vectors **E**=pc+jmc² and **E***=pc-jmc² that represent the energy of a particle of mass m moving at speed v satisfy the relationships,
　　$\mathbf{E}=pc+jmc^2$
　　$\mathbf{E}^*=pc-jmc^2$
　　$\mathbf{E}=\mathbf{E}_R+j\mathbf{E}_I$, $\mathbf{E}^*=\mathbf{E}_R-j\mathbf{E}_I$

where, E_R=pc and E_I=mc², p=γmv, γ=1/(1-v²/c²)$^{1/2}$
(1/2)(**E**+**E***)=pc
(1/2)(**E**-**E***)=jmc²
E²=**EE***=(pc)²+(mc²)².
E^2=(**PP***)c^2
P=p+j(mc),
P=m**V**, where **V**=γv±jc.
E=mc(γv±jc)
E=pc±jmc², where p=γmv.

Theorem:

The actual momentum P in Special Relativity is not real and not unique, **P**=(p±jmc). The energy E in Special Relativity is not real and not unique, **E**=pc±jmc², **E**=**P**c.

Lemma:

The momentum in Special Relativity **P**=p±j(mc) is equivalent to **P**=m**V**, where **V**=γv±jc. In Special Relativity, the absolute velocity **V** of an object is the velocity of the object relative to a beam of light that is orthogonal to the direction of motion of the object traveling at speed v and it is given by, **V**=γv±jc.

Einstein used a vertical beam of light in a moving train under the assumption that light is relative and behave as golf balls in deriving the time dilation factor γ=1/(1-v²/c²)$^{1/2}$ and forced it to be the same at every angle and in every direction. The time dilation factor derived for the lateral plane does not apply for any other direction. Time dilation factor is directional. If time is relative, relative time cannot be non-directional. The time dilation factor γ=1/(1-v²/c²)$^{1/2}$ derived for the lateral plane (y,z) does not hold for any other direction. The Proper Lorentz Factor for transforming the Maxwell equations onto an inertial frame should be γ², not γ. Maxwell equations for propagation of light cannot be transformed onto an inertial frame and hence Special Relativity, General Relativity and the Lorentz Transform have no existence.

The Lorentz Factor cannot be equal to γ in the Lorentz Transform. The relative electromagnetic fields must be independent of the Lorentz Factor γ. In Special Relativity relative electromagnetic fields are dependent on the Lorentz Factor γ. When the Lorentz Factor is γ² as it should be, the relative electromagnetic fields are independent of the Lorentz Factor. When the Lorentz Factor is γ² as it should be, the relative distance axis and the relative time axis in the moving frame are frame independent and hence there is no clocks ticking at different rates and meter sticks getting shorter in moving frames. Clocks and meter sticks are universal when the Lorentz Factor is γ² as it should be.

Special Relativity is mathematical manipulations in the blind. Maxwell equations are not transformable onto inertial frames. Time cannot be relative. Light does not propagate relative to moving frames. No Special Relativity is required. Galileo-Newton Relativity is incorrect since trains cannot derail relative to observers. Taking Galileo-Newton Relativity as correct is one of the major mistakes in Special Relativity. Galileo-Newton Relativity is incorrect.

IV. THERE IS A HIDDEN ABSOLUTE FRAME IN SPECIAL RELATIVITY

As we have seen, since the mass of an object in Special Relativity depends on its speed by the Lorentz factor γ=1/(1-v²/c²)$^{1/2}$, the actual momentum P and the energy E of a particle are complex quantities. As a result, the overall speed of a particle in Special Relativity is also a complex quantity, where the imaginary quantity is the speed of a beam of light. This indicates that the Special Relativity is founded upon the choice of a beam of light as an imaginary absolute frame of reference. This is not a surprise since Special Relativity is founded upon Einstein's vertical light burst in a moving train thought experiment. The choice of a beam of light orthogonal to the motion of an object as the absolute frame in Special Relativity is an open secret everyone prefers to turn a blind eye to. Special Relativity has become a religious scripture, questioning its validity becomes a heresy. Blind acceptance and belief is the norm. Interpretation of the scripture can be twisted to silence the critics.

A beam of light as the absolute reference frame is implicit in Special Relativity; it is hidden there; we cannot escape it. Although in Special Relativity it has always been proclaimed that there is no absolute frame of reference, what is inherent in Special Relativity is a beam of light as the absolute frame of reference under the false assumption that light is relative and behaves as golf balls. Light is not relative. Light, the massless, cannot behave as golf balls. Light, whose speed and path are constants that can only be altered by the change of the medium, cannot be relative and behave as golf balls. A vertically released beam of light from the bottom of a moving train cannot take a vertical path relative to an observer in the train. In the case of light, there is only one stationary frame; it is the natural frame in space where light naturally propagates. Light does not propagate relative to moving frames.

"Every inertial frame is not a stationary frame for the propagation of light."

Unlike the motion of objects of mass where every inertial frame is a stationary frame, for the propagation of light every inertial frame is not a stationary frame. Anybody who has tried to transform Maxwell equations for the propagation of light from the frame where light naturally propagates onto an inertial frame consciously should have realized this. Once x and t are transformed onto an inertial frame as x′ and t′, they are the inertial frame. They are what passengers on the frame find there. The relative distance x′ and relative time t′ in the Lorentz Transform are real and they are what passengers on an inertial frame measure; they are not external observer perceptions. On the other hand, the relative distance x′ and relative time t′ in Special Relativity are perceptions of external

observers, they are not real. That is the key difference of the Lorentz Transform from the Special Relativity. The equation that represents the x′ in Special Relativity (x′=x/ɣ+vt′) under the assumption that length in the direction of motion contracts is not the same as the equivalent equation that represents the x′ in the Lorentz Transform (x′=x/ɣ-vt′), which is an indication that they represent different things.

a.) **The Actual Speed of a Particle in Special Relativity is a Complex Vector:**

In Special Relativity, the energy E of a particle with momentum p is given by,

$$E=E_r\pm jE_i \qquad (4.1.1)$$
$$E=pc\pm jmc^2 \qquad (4.1.2)$$
$$p=m'v \qquad (4.1.3)$$

where, $m'=\gamma m$, $E_r=pc$, and $E_i=mc^2$.

Special Relativity uses a beam of light orthogonal to the motion of an object as the absolute frame. Since the energy E of a particle in Special Relativity is given by the conjugate vector pair (**E**,**E***), where, **E**=pc±jmc², Special Relativity has the implicit assumption that the motion of a mass is always relative to an orthogonal beam of light. Special Relativity assumes that the propagation of light is relative and a moving object has speed jc relative to a beam of light orthogonal to the velocity **v** of the object. Although Special Relativity explicitly denies the existence of an absolute frame of reference, what is hidden in Special Relativity implicitly is an implicit hypothetical beam of light orthogonal to the motion of an object as the absolute frame giving the mass relative speed jc orthogonal to the speed v.

b). **Absolute Frame in Special Relativity:**

Special Relativity claims that there is no absolute frame. But, the claim in Special Relativity that there is no absolute frame is indicative of the desire to turn a blind eye to the real truth, an open secret of Special Relativity. Special Relativity cannot exist without an absolute frame. Special Relativity not only has an absolute frame, it also has an absolute direction. Absolute direction in Special Relativity is a running bi-direction, since it varies with the direction of motion of an object. It is a bi-direction since the direction can be both positive and negative.

Absolute frame in Special Relativity is a beam of light. The reference frame for a motion of an object of mass m in Special Relativity is a beam of light that is orthogonal to the direction of motion of the moving object. In Special Relativity, a moving object of mass m has an imaginary velocity j**c** relative to a beam of light that is orthogonal to the direction motion of the object of mass m. The real speed **v** of the object in Special Relativity is always orthogonal to the velocity **c** of a beam of light that is orthogonal to the motion of the object. The object of mass has its real speed **v** in addition to the imaginary speed ±j**c** relative to a beam of light orthogonal to the direction of motion of the object given by vector **v**. As a result, in Special relativity, the overall velocity **V** of an object of mass m relative to an orthogonal beam of light is a complex vector,

$$\mathbf{V}=\gamma v\pm jc. \qquad (4.2.1)$$

c). **What the Energy Should be in the Presence of Light as Absolute Frame:**

The imaginary component of the speed is **c** from the start and hence the imaginary component of the energy E_i of the object of mass m is given by,

$$E_i=jmc^2 \qquad (4.3.1)$$

The real component of the speed is v. No stationary mass can have a real motion starting from a constant speed, and hence the real energy E_r of an object of mass m moving at speed v must be given by,

$$E_r=(1/2)mv^2 \qquad (4.3.2)$$

As a result, the relative energy of an object of mass m must be,

$$\mathbf{E}=E_r+E_i \qquad (4.3.4)$$
$$\mathbf{E}=(1/2)mv^2+jmc^2 \qquad (4.3.5)$$

This holds for any v. The speed v does not have to be small compared to the speed of light c for this to hold; no such requirement is necessary. It holds for v>c, v<c, or v=c, no restriction for it to hold.

The speed limit of an object is a result of a mistake in Special Relativity in calculating the energy of an object of mass m. Special Relativity calculates the energy of an object of mass by integrating an equation consisting of the Lorentz Factor ɣ; that is where the mistake lies.

The Lorentz Factor or Einstein time dilation factor ɣ plays no role in energy of an object in Special Relativity. The Lorentz Factor invalidly entered into the energy equation when the Lorentz Factor was used in Special Relativity in the accelerating stage of the object to reach the speed v from the rest v=0. The Lorentz Factor applies only for constant speed v; it does not apply for accelerating frames or objects. The derivation of E=ɣmc² in Special Relativity is invalid since an expression that include the Lorentz Factor ɣ, which applies only for constant speed v, cannot be integrated for the accelerating stage from v=0 to v in deriving the energy E=ɣmc² in Special Relativity; a textbook mistake, E≠ɣmc².

In Special Relativity, if you assume that the light is relative, which is not true, the energy of a particle must be given by **E**=(1/2)mv²+jmc², E≠ɣmc². Light is not relative and hence light cannot be a reference frame. The rest energy E=jmc² does not exist.

In Special Relativity, one relationship says that the energy of a particle is given by E=pc, where p=ɣmv, and another relationship says that the energy is given by E=ɣmc². These two equations are not compatible

unless the speed of the mass approaches the speed of light, v→c. But as v→c, ɣ becomes unbound. Equations E=pc is meaningless and does not apply for particles of mass. The derivation of E=ɣmc² is invalid since the existence of ɣ requires the speed v to be a constant. The ɣ does not apply for accelerating stage of an object of mass.

The mass of an object cannot depend on its speed. The mass of an object cannot depend on the Lorentz Factor ɣ. If the mass of an object depends on the speed, the energy of that object cannot be scalar. Energy must be scalar and hence the mass of an object cannot depend on its speed. The mass of an object cannot depend on the Lorentz Factor ɣ. Einstein time dilation factor ɣ from Special Relativity does not belong in the Lorentz Transform. The Lorentz Transform and Special Relativity are conceptually opposite of each other.

d). **The Actual Energy of a Particle of mass** m **moving at Speed** v:

The energy of a particle moving at speed v is just the simple vanilla flavor we have known and accustomed to for many centuries E=(1/2)mv². Speed of light is naturally observer independent since light propagates on a fixed path that can only be altered by the medium. The motion of any entity on its fixed path is observer independent. The speed of a train on its track is observer independent. Galileo-Newton Relativity is incorrect, it is the train track that moves against the motion of observers, not the train. External observers cannot bend light. External observers cannot derail trains. Special Relativity is unnecessary and has no existence. The assumptions that the Special Relativity is founded upon are false [6,4,8]. Special Relativity is conceptually false in its genesis.

Lemma:
Light is not relative and does not behave as golf balls. Special Relativity that is based on the false assumption that light is relative and behaves as golf balls is both theoretically and conceptually invalid.

Contrary to the claim in physics, Lorentz did not transform the Maxwell equations onto an inertial frame. Einstein did not transform the Maxwell equations onto an inertial frame. Their transformations are incorrect and invalid. Mathematical mistakes in their transformation are hidden, not visible unless the derivation is subjected to proper scrutiny, and as a result, it superficially appears as if they did transform Maxwell equation onto an inertial frame. Both Lorentz and Einstein disregarded the necessary conditions that emerged from the transformation of Maxwell equations onto an inertial frame. When the necessary conditions that emerge from the transformation of Maxwell equations onto an inertial frame are taken into account, it is perfectly clear that Maxwell equations are not transformable onto inertial frames

and hence Maxwell equations for propagation of light are not relative. Special Relativity, General Relativity, and the Lorentz Transform have no existence. Lorentz Transform with time dilation factor ɣ as the Lorentz Factor is not unique.

Theorem:
Light propagates on a fixed path at a fixed speed that can only be altered by the change of the medium, and hence propagation of light is naturally observer independent. No Special Relativity is required.

e). **Energy of a Particle in Special Relativity:**

In Special Relativity, light is falsely assumed to consist of particles of momentum p and energy E=pc. Special relativity extends this energy relationship E=pc that only applies for hypothetical light particles to objects of masses and claims that an object of mass m with relative momentum p also has the energy E=pc.

Light does not have a momentum and hence the relationship E=pc does not even hold for light. The relationship E=pc cannot apply for an object of mass since it is equivalent to a mass having two separate speeds v and c. The relationship E=pc is equivalent to a mass having momentum due to the speed ɣv since p=ɣmv and the momentum p having speed c, which is meaningless. The velocity of a mass must be unique.

Special Relativity is meaningless. Special Relativity switches from light to objects of mass as if motion mechanics and propagation mechanics are equivalent. Motion mechanics and propagation mechanics are not equivalent. Motion mechanics deals with the motion of masses with momentum. Wave mechanics deal with the waves that have no mass, no momentum. We cannot force a momentum on light by proclamation. Einstein forced a momentum on light by proclamation. Any entity that has no standstill existence cannot have momentum. We cannot force a hypothetical momentum on an entity that we cannot stop. Light cannot propagate relative to moving frames. Propagation of light is absolute, not relative. Maxwell equations for propagation of light cannot be transformed onto moving frames.

f). **Particles Cannot Behave as Waves:**

Fallacy of E=pc did not stop there in Special Relativity. De Broglie went one step further. He picked E=pc in Special Relativity and Plank's E=hf and equated them, pc=hf. Substituting c=f□ in pc=hf, de Broglie obtained □=h/p and claimed that a particle with momentum p behaves as a wave of wavelength □. The equation E=pc does not apply to a particle of mass; it was derived for light, the massless, under the false assumption that light is relative. First, light is not relative and does not behave as golf balls. Light has no momentum. Second, Plank's E=hf is cavity dependent and the derivation is invalid [2].

The relationship E=hf is meaningless since the frequency of a wave has no energy. Frequency is not energy. Electromagnetic frequency has no energy unless frequency is transformed into energy using

charge particles. If light consists of photons of energy E=hf, light itself has no existence [9]. Particles cannot behave as waves. Objects of mass cannot behave as waves. Objects of mass cannot propagate. Quantum Mechanics cannot exist since the eigenspace of the position operator in Quantum Mechanics is not unique. The Heisenberg Uncertainty Principle cannot exist since the wavefunction is not unique. Position and momentum operators in Quantum Mechanics have a shared eigenspace and the position and momentum of a particle are simultaneously measurable to any achievable precision [9]. Both Special Relativity and Quantum Mechanics are in an existential crisis; they have no real existence; they are invalid.

V. **THERE IS NO NEGATIVE ENERGY**

Energy is temperature. Temperature is energy. Energy is the motion of particles of mass, the kinetic energy. There is no entropy without the kinetic energy of particles of mass, the temperature. Light has no temperature. Light has no entropy. Temperature is the motion of the particles of mass, the kinetic energy. There is no temperature without the motion of particles. There is no energy without the motion of particles. It does not matter how much light is there in a vacuum, there is no temperature, there is no energy.

Light has no temperature. Light has no momentum. Light has no entropy. If light consists of particles of momentum, space would not have been cold. What light has is the electromagnetic potential energy. Electromagnetic potential energy is not energy unless potential energy is converted into kinetic energy of charge particles of mass. Kinetic energy of particles of mass is positive and cannot be negative. Energy cannot be negative.

A single mass has no gravity. A single mass has no gravitational potential. A single mass has no gravitational field. It is a mass in the vicinity of another mass that has a gravitational potential, a gravitational field, gravitational force. Gravity is a result of mass to mass interaction.

Although Newton could not say why and how such interactions between masses at distance exist, he was able to quantify the interaction between masses and explain how orbiting systems work, and presented a unified framework that seems to exist in orbiting systems. A single mass has no gravity. There is no gravitational field around an object of mass. Gravitational field is between the object and a unit mass. Without a unit mass present, there is no field. Gravity is interaction between masses. Gravity has no effect on the massless. Gravity has no direct effect on light. Gravity cannot detect the presence of light. Light doesn't know if a gravitational object exists until light bumps into a gravitational object.

In an orbiting system, eccentricity is a vector. Eccentricity vector of a planet describes the orbit [5,7]. Eccentricity vector rotates with the variation of the mass of the sun or the mass of the gravitational object that is central to the orbiting system. Perihelion precession of an orbiting planet is a result of the rotation of the eccentricity vector [5]. A circular or near circular orbits do not have perihelion precession since the eccentricity vector is a null vector for a circular orbit. Perihelion precession is only visible for eccentricity vectors with magnitude close to unity as in the case of planet mercury.

The claim that there is a negative gravitational potential around a gravitational object is incorrect. It is we who define a reference for gravitational potential. We can define any way we like. There is no such thing as negative gravitational potential around a gravitational object. There is no gravitational potential or a gravitational field around a gravitational object. For gravitational potential to materialize at a point around a gravitational object, there must be another mass at that point. Gravitational potential exists between masses. Gravity exists between masses.

It is the potential difference that matters. The Potential difference can be both positive and negative. Potential energy can be negative. However, energy cannot be negative. It is the potential difference that matters in an orbiting system. Even though the potential energy difference can be positive or negative depending on the reference we have chosen, the energy, the kinetic energy, is always positive. When we refer to energy, it is the kinetic energy of a particle we refer to. When we refer to temperature, it is the kinetic energy of particles that we refer to. Kinetic energy of particles of mass is always positive and hence the energy cannot be negative.

Light has no energy. What light has is energy potential. Light has no energy until electromagnetic potential is converted into kinetic energy using charge particles. The energy must be positive. There is no negative energy since energy refers to kinetic energy. Energy has no independent existence without masses. There is no massless energy. There is no massless temperature. Mass cannot be converted to energy since energy has no existence without masses, $E \neq mc^2$. In Special Relativity $E = jmc^2$, $E \neq mc^2$. $E = jmc^2$ is imaginary and does not exist.

The false concept of negative energy comes from the false relationship $E = mc^2$ in Special Relativity. $E = mc^2$ is simply the kinetic energy of a mass at rest relative to the propagation of light under the assumption light is relative. In Special Relativity, a rest mass has a speed c relative to light and hence rest energy $E = mc^2$ if light is relative. Light has no standstill existence and hence cannot be relative. Since light is not relative, a rest mass does not have speed c relative to light. As a result, a mass does not have

such a thing called rest kinetic energy, $E \neq mc^2$. A rest kinetic energy is an oxymoron.

Special Relativity has given the light an artificial momentum p, and as a result, when light with momentum p is traveling at speed c, the energy of light is given by E=pc; this does not apply for the momentum of a particle of mass m, $p=m'v$, where $m'=ɣm$. There is no massless momentum. Light has no mass, no momentum. E=pc is a result of mixing up light as particles with momentum. E=pc derived for light cannot apply to a mass m since no mass can travel at speed c from the start. Even though the massless have no momentum, Modern Physics arbitrarily and incorrectly jumps from momentum of an object of mass to momentum of massless light, and the momentum of massless light to mass freely; this is not possible since, unlike light, a mass cannot travel from the start at the speed of light. You cannot give light a momentum by proclamation.

After claiming light has momentum p and energy E=pc, for no valid reason, it has been proclaimed in physics that for a particle of mass m with relative momentum $p=m'v$, the energy E is also given by E=pc, where c is the speed of light. It is the light with presumed momentum p that travels at speed c; a mass m with relative momentum $p=m'v$ does not travel at speed c. We cannot substitute $p=m'v$ in E=pc that is derived for light under an artificial momentum of light. E=pc does not apply for momentum $p=m'v$ of a mass m traveling at speed v.

Even though E=pc relationship does not apply for a mass m moving at any speed v having relative momentum $p=m'v$; it applies for a mass m traveling at speed c from the beginning, which is impossible; not because a mass is not able to travel at the speed of light c, but because no mass can start at constant speed from the beginning. Any object of mass can travel at the speed of light c, except that it has to accelerate from standstill to reach the speed c, and hence the kinetic energy of a mass m traveling at speed c is given by $E=(1/2)mc^2$, not by $E=mc^2$. In Special Relativity the rest energy is $E=j(mc^2)$, $E \neq mc^2$. Even the $E=j(mc^2)$ in Special Relativity cannot hold since light is not relative.

In the invalid E=pc relationship for a particle of mass with relative momentum $p=m'v$, they also disregarded the fact that the speed of light c has a direction. Since the momentum can be both positive and negative, if you disregard the fact that the speed of light c has a direction, E can be both positive and negative since p can be both positive and negative in E=pc. It is this invalid derivation and invalid interpretation of E=pc that has given an invalid concept of negative energy.

The relationship E=pc or $E=mc^2$ does not apply for a mass that travels at the speed of light c. Although there is nothing that can prevent a mass traveling at speed of light c, a mass cannot travel at a constant speed c from the start. So, E=pc or $E=mc^2$ is not a result of an actual mass traveling at speed c; it is a result of the false assumption that the light is relative and hence a stationary mass has a speed c relative to light. If light is relative, a stationary mass m has a speed c relative to light from the start and hence the rest kinetic energy $E=mc^2$. The problem is that light is not relative, and hence a stationary mass has no speed c relative to light. As a result $E \neq mc^2$. Light is not relative and hence a stationary mass has no speed c relative to light.

"Energy must be positive. There is no negative energy. E=pc cannot be negative since it is equivalent to $E=(mc)c=mc^2$. If the momentum p is negative the velocity of light **c** is also negative. Light has not just a speed c, light also has a direction. Wherever the speed of light c is involved, the direction of light is also involved. It is the velocity of light that is constant. Equation E=pc does not apply for a mass with momentum $p=m'v$. E=pc does not apply for light either since light has no momentum. Light has no mechanical energy. Light has no temperature. Light has no energy. Light has no entropy. Light has electromagnetic potential energy. Potential energy is not energy unless it is converted to energy by charge particles."

"Einstein energy relationship $E=mc^2$ is simply the kinetic energy of a restmass relative to light provided light is relative; it is imaginary, not real. A rest mass cannot have speed c relative to light since light has no standstill existence. The equation $E=mc^2$ is false since light is not relative, $E \neq mc^2$. In Special Relativity it is $E=jmc^2$, it is no-existent. Mass and energy are not equivalent. Mass cannot be converted to energy since energy has no existence in the absence of masses."

In General Relativity, the claim that mass warps space is false. If the space is warpable, it must be an entity that occupies the space that must warp the space. Mass does not occupy the space. It is the volume that occupies space. If the space is warpable, it must be the volume that warps the space, not the mass. General Relativity cannot exist since the mass of an object has nothing to do with the space even if

the space is falsely assumed to be warpable. Space is not warpable. Warping of a space is meaningless. What mass warps is the medium surrounding the mass by the effect of its gravity.

Light Does not follow geodesics. In a vacuum, light can propagate in any direction irrespective of the presence of a gravitational object. Light follows the density gradient of the medium in the presence of a medium. Density gradient of the medium is not the geodesic. Light takes a straight path in a vacuum irrespective of whether gravitational objects are present or not. Light is insensitive to gravity in a vacuum. It is the medium that mediates an interaction between gravity and light. The effect of gravity on light is a secondary effect through the medium. There is no direct effect of gravity on light. Gravity cannot exert a direct effect on the massless, on light. The refraction of light from a distant star at the sun has nothing to do with General Relativity. It is the density gradient of the medium surrounding the sun that refracts light near the sun.

If the light is falsely assumed to be relative, then any stationary object of mass m has the speed c against the direction of light from the start, and as a result the mass m has relative rest energy $E=mc^2$ relative to light. The assumption that the light is relative is the genesis of the equation $E=mc^2$, which is the genesis of $E=pc$ since $E=(mc)c$ and $p=mc$. We cannot plug in $p=mv$ (or $p=m'v$, where $m'=\gamma m$.) in $E=pc$; that is a crucial mistake in Modern Physics.

The problem is that the light is not relative. No mass can start at speed c. For a stationary mass to have a speed relative to another moving entity, that moving entity must be able to be brought to a halt, and that is where all the problems with relativity lie.

Light has no standstill existence and hence cannot be brought to a halt. No mass can have speed c relative to light, $E \neq mc^2$. Kinetic energy of a mass has nothing to do with the speed of light c unless the mass is moving at the speed of light c. A mass moving at constant speed from the start originated from the Lorentz transform. Lorentz transform does not apply to masses in motion. The Lorentz transform is not unique. The frame in the Lorentz transform cannot be a moving object of mass starting at rest since the Lorentz transform requires an inertial frame to have a constant speed from the start, and no mass at stand still can travel at constant speed from the start.

The relationship $E=pc$ had been obtained from $E=mc^2$ by substituting $p=mc$. The speed of light also has a direction. If the momentum p is negative (-p), the c will also be negative (-c) and hence E is positive. If the momentum p is positive (+p), the speed of light is also positive (+c) and hence E is positive. The negative energy E comes from the misinterpretation of

$E=pc$. In $E=pc$, $p=mc$. $E=pc$ does not apply for any momentum p. They disregarded the fact that the speed of light c has a direction, and since p can be both positive and negative, it was falsely claimed that E can be positive and negative; this is a recurrent mistake in physics textbooks. If p is negative, c is also negative and hence E is always positive.

Energy cannot be negative. $E=pc$ in Special Relativity cannot be used to claim that E can be negative. It is the velocity of light that is observer independent, not just the speed of light. The direction of light and the speed of light are observer independent. Special Relativity disregards the fact that the direction of light is observer independent. The direction of light is a constant that can only be altered by the change of medium and hence must be observer independent. Special Relativity sacrificed the constancy of the direction of light in order to maintain the constancy of speed of light. The velocity of light is naturally observer independent. Velocity of a train on its track is naturally observer independent.

Kinetic energy of a mass traveling at speed v is always given by $E=(1/2)mv^2$. If the mass is traveling at speed c, the energy $E=(1/2)mc^2$. No mass can start at constant speed. No stationary mass can have speed c relative to the propagation of light since light is not relative and light has no standstill existence. As a result, a mass has no rest energy, $E \neq mc^2$. In Special Relativity the rest energy is imaginary, $E=jmc^2$.

Light has no momentum. The Massless has no momentum. Einstein gave light a momentum by assumption in order to fit laws of propagation of light into Galileo's claim that "the laws of motion are frame independent". Einstein forced the light to behave as golf balls by proclamation so that the laws of propagation of light are not an exception to Galileo's claim that a passenger in a closed cabin cannot determine if the cabin is stationary or moving at constant speed. The claim that light is relative is not going to make light relative. Neither Einstein nor anybody else could prove that light is relative. It is not possible to prove that light is relative. Without light being relative, it is not possible to treat light as golf balls.

Light is not relative. Special Relativity and General Relativity are invalid. No special Relativity is required since it is both the speed and the path of light that are constant in Maxwell equations, not just the speed of light alone [6,4]. Both the speed and the path of light are observer independent in the Lorentz Transform. In Special Relativity, only the speed of light is observer independent and the path of light is observer dependent. Special Relativity and the Lorentz Transform are not the same. The Lorentz Transform does not force a momentum on light. Special Relativity forces an artificial momentum on light.

In Special Relativity, $x'=x/\gamma+vt'$ in the direction of motion of the frame under the assumption that length

contracts with the motion, and for any other direction d′=d+vt′, where d is the distance traveled at time t. In the Lorentz Transform, x′=x/ɣ-vt′ in the direction of motion of the frame. The two equations in the Lorentz Transform are equivalent to x′=x/ɣ-vt′. The Lorentz Transform does not apply if the path of motion does not overlap with the direction of motion of the frame. The path of light must be observer independent for the Lorentz Transform. The path of light must be observer dependent for Special Relativity. Special Relativity and the Lorentz Transform are polar opposites. Special Relativity is not Lorentz Transform compliance.

The Lorentz Transform transforms Maxwell equations from a frame where light naturally propagates onto an inertial frame. The transformation of Maxwell equations onto an inertial frame is not an observer perception; it is real. Light is not assumed to have momentum in the Lorentz Transform. Any inertial frame is not a stationary frame for propagation of light. Only a frame in space where light physically propagates is the stationary frame for light.

On the other hand, Special Relativity is an observer's perception under the assumption that light is relative and behaves as golf balls. Any inertial frame is a stationary frame for Special Relativity. The x′ and t′ in the Lorentz Transform are on the moving frame relative to passengers on the moving frame, not relative to outside observers. In Special Relativity, x′ and t′ are relative to observers outside the moving frame. Special Relativity and the Lorentz Transform are polar opposites.

"Light cannot have momentum since light has no standstill existence. Light cannot be brought to a halt by applying a force, by applying an equal and opposite momentum."

The rest energy of a particle in Special Relativity is imaginary, E=j(mc)c, and has no real existence. A stationary mass cannot have rest kinetic energy E=(mc)c relative to light since light is not relative and does not behave as golf balls. The claim in Special Relativity that a mass at rest has the rest energy E=(mc)c is invalid and meaningless. In Special Relativity, the rest energy is imaginary E=j(mc)c. The claim in Special Relativity that a mass with relative momentum p dependent on the Lorentz factor has energy E=pc is invalid, and the use of E=pc to claim that E can be negative is false and deceitful. Energy must be positive. The energy cannot be negative. There is no negative energy. In Special Relativity, the rest energy is E=j(mc)c, and E=j(pc) applies only for p=mc, not for any momentum p dependent on the Lorentz factor. The (mc) is the momentum of a stationary mass relative to a beam of light if light is falsely assumed to be relative. Hence, both E=(mc)c and E=pc cannot exist.

In Special Relativity, the Lorentz Factor is used to show that the speed of light is frame independent, yet the Lorentz Factor contains the relative light speeds (c+v) and (c-v). Speed of light cannot depend on the speed v of the frame of reference unless it is the motion of light burst that is considered. Motion of light bursts is relative. The motion of light bursts is not governed by Maxwell equations. In Special Relativity, it is not the motion of the light bursts that is considered, it is the propagation of light that is considered. Propagation of light is bound by the Maxwell equations. For propagation of light, speed of light is a constant and hence the relative light speeds (c-v) and (c+v) do not exist. The Lorentz Factor that depends on hypothetical relative light speeds (c-v) and (c+v) cannot exist.

The presence of the relative light speeds (c+v) and (c-v) is also an indication that it is based on the average forward and return time of a beam of light, not the instantaneous one-directional time given by clocks. A theory that contains (c-v) and (c+v) is invalid since light is not relative and the relative speeds (c-v) and (c+v) cannot exist. The Lorentz Transform containing the Lorentz Factor cannot exist unless the Lorentz Transform deals with the motion of light bursts, not the propagation of light. The motion of light bursts is relative, propagation of light is not relative. The relative speed of the motion of light bursts can exceed the speed of light relative to observers even though the propagation of light within the burst is constant. It is the path of a light burst that shifts against the motion of the observers while the propagation of light on the path is unaltered [4]. It is the distance to a light burst that varies with the motion of the observer.

VI. **THE DUTY OF THE LORENTZ FACTOR IN THE LORENTZ TRANSFORM**

The purpose of the Lorentz Transform is to transform Maxwell equations for propagation of light onto inertial frames. For the Maxwell equations to hold their forms after the transformation, there should not be any contraction or dilation of the relative axes **t′** and the relative distance axis **x′**. The Lorentz Transform without the Lorentz Factor is given by,

$$x'=(x-vt) \tag{6.1}$$
$$t'=(t-vx/c^2) \tag{6.2}$$

The average forward and reverse relative contraction factor here is $1/\gamma^2$. This transform cannot retain the form of the Maxwell equations on the inertial frame after the transformation. So this transform has to be modified so that the average contraction is canceled out. We can cancel out the average contraction by introducing the transformation factor η,

$$x'=\eta(x-vt) \tag{6.3}$$
$$t'=\eta(t-vx/c^2) \tag{6.4}$$

When $\eta=\gamma^2$, we have proper unique transformation of the Maxwell equations onto an inertial frame. The relative distance axis **x′** and the relative time axis **t′** are unaltered with this transform, **x′=x** and **x′=t**. This is the Proper Universal Transform. Proper Universal Transform is unique and frame independent. The meter sticks and clocks are universal in this transform. There is no average relative time dilation or contraction in this transform. There is no average relative distance contraction or dilation in this

transform. This transform transforms Maxwell equations uniquely while maintaining the form of Maxwell equations unaltered.

On the other hand, we have the Lorentz Transform,

$$x'=\eta(x-vt) \qquad (6.5)$$
$$t'=\eta(t-vx/c^2) \qquad (6.6)$$

where, $\eta=\gamma$. This is the transform we get if we make the transformation factor to be Einstein's relativity factor for no reason or justification, just because Einstein Could. Einstein steam-rolled his time dilation factor from the vertical light beam in a moving train thought experiment in Special Relativity onto the Lorentz Transform where it does not belong. A vertical light beam in a moving train is a completely different scenario from the Lorentz Transform where a beam of light is along the direction motion of the frame. The path of light is altered in Special Relativity whereas the path of light is unaltered in the Lorentz Transform. Light is not assumed to behave as golf balls in the Lorentz Transform whereas in Special Relativity light is forced to behave as golf balls. The relative axes in the Lorentz Transform with Einstein's Relativity Factor as the Transformation factor are frame dependent.

When we force the Lorentz Factor to be γ, the transformation is not unique since the relative axes are no longer frame independent. Further, when the Lorentz Factor is forced to be γ, the relative electromagnetic fields become dependent on γ. As a result, the relative electromagnetic fields become infinite when the speed of the frame approaches the speed of light. Relative electromagnetic fields cannot be unbound. Einstein's forcing of his time dilation factor derived for the lateral plane on the Lorentz Transform as the Lorentz Factor is invalid. Einstein's relativity factor γ that is only valid for the lateral plane does not belong in the Lorentz Transform where the motion is in the direction of the frame.

The Lorentz Transform with Einstein's Relativity Factor as the transformation factor cannot transform the Maxwell equations uniquely onto an inertial frame. Einstein's Relativity Factor γ does not belong in the Lorentz Transform that transforms the Maxwell equations onto an inertial frame. The invalidity of Einstein's Relativity Factor γ in the Lorentz Transform went unnoticed because the proper transformation factor is γ^2. If you do not know that γ^2 is the proper transformation factor, you can pretentiously fake it as γ by multiplying all the field equations by extra redundant factor γ as Einstein did. The problem is that the redundant multiplication factor made the Lorentz Transform not unique. Einstein performed a mathematical magic trick and everyone fell for it. Einstein's mathematical deception outlasted him and lasted more than a century. Scientific community was duped in 1905; they fell for it. They should have realized the mockery of it when Einstein claimed $m=E/c^2$; this is silly.

The undeniable and provable fact is that Maxwell equations cannot be transformed onto inertial frames [6]. No Special Relativity is required [4]. Light does not propagate relative to moving frames. It is the

disregarding of the necessary conditions of the transformation that gave the false impression that the Maxwell equations are transformable. Maxwell equations for propagation of light are absolute. Not relative. Every inertial frame is not a stationary frame for propagation of light. There is only one stationary frame for the propagation of light, space.

VII. **MOTION OF OBJECTS OF MASS AND THE PROPAGATION OF LIGHT ARE NATURALLY OBSERVER INDEPENDENT, NO SPECIAL RELATIVITY IS REQUIRED**

We do not need to give light a fake momentum to claim that the laws of physics are observer independent. We do not have to force the light to be independent of inertial frames. We do not need Special Relativity to make the propagation of light independent of an inertial frame. Laws of physics are naturally frame independent.

The laws of physics for the motion of masses are independent of the frame of reference for the fact that the motion of masses is relative. The laws of physics for the propagation of light (the massless) are independent of the frame of reference due to the fact that the propagation of light is not relative, for the fact that light does not propagate relative to inertial frames, for the fact that the light propagates in space. Light does not propagate relative to inertial frames. Even though inside a cabin in a moving train at constant speed is a stationary frame for an object of mass, a cabin in a moving train at constant speed is not a stationary frame for the propagation of light. No Special Relativity is required for the laws of physics to be frame independent.

There is no potential until a mass is placed at any point in space surrounding a gravitational object of mass. A gravitational object does not recognize a unit mass from any other mass. There is no negative potential energy density around a gravitational object. There is no negative energy. When we refer to energy, it is the kinetic energy of masses we refer to. There is no independent entity called energy since energy has no existence without particles of mass. When we refer to potential, it is the potential difference we refer to. There is no gravitational field around a gravitational object. A gravitational field exists between masses. A single mass has no gravity.

Energy has no existence without an association with masses. A mass cannot be converted to energy since energy has no independent existence without an association with mass. Mass and energy are not equivalent. The total mass of a closed system must be conserved. Mass and energy are conserved. Light has no energy. The massless has no energy. The massless has no temperature. Light has no temperature. Energy and temperature do not exist without particles of mass. The Cosmic Microwave Background (CMB) is a result of the motion of charged particles. The presence of Cosmic Background Temperature is a justification for that. There is no temperature without particles of mass. Microwaves do not have temperature. Cosmic

Microwave Background temperature is an oxymoron.

"The observed Cosmic Microwave Background in space at any direction is a result of the motion of charged particles, not a remnant from a bigbang."

Light has electromagnetic potential, but electromagnetic potential is not energy until the electromagnetic potential is converted to kinetic energy of charged particles of mass, kinetic energy of electrons. Gravitational potential is not energy until the change in gravitational potential is converted to kinetic energy of a mass. There is no negative gravitational potential around a gravitational object. Gravitational potential is a result of mass to mass interaction. Space does not have a gravitational potential. Only a mass can have a gravitational potential in the presence of another mass. The change in gravitational potential between two masses can be both positive and negative. Light has no temperature, no entropy. Gravitational potential has no temperature, no entropy. Only the kinetic energy of masses has temperature and entropy. Energy cannot be quantized [2]. Energy cannot come in quanta. Light cannot consist of photons of energy E=hf. Any entity with belonging cannot come in quanta without a mechanism to carry the identity information with the quanta. What would the internet be if a data quantum did not carry a header. A quantum is meaningless without an identification header.

Light in a vacuum has no temperature. Light in a vacuum has no entropy. It does not matter how much light is propagating in space, there is no energy in a vacuum space. There is no energy without particles of mass. Light has no energy. What light has is the electromagnetic potential energy. Electromagnetic potential energy cannot be converted into energy without electrons or charge particles. There is no charge without mass. A vacuum cannot convert light into energy. A vacuum with light has no energy. Vacuum has no temperature. There is no vacuum energy. If a vacuum has energy, it is not a vacuum because there is no energy without particles of mass.

A vacuum is a vacuum because there is nothing there and there is nothing happening there, no particles of mass there. The presence of light in a vacuum cannot give the vacuum a temperature. If there is a place where virtual particles of opposite charges popping up, then it is not a vacuum. Nothing can pop up out of nothing. If vacuum is a place where virtual particles of opposite charges randomly popping up, why do we have an energy crisis? We could easily separate those virtual particles using two positively and negatively charged plates. Those so-called virtual particles are not neutral and hence if they pop up, they will be in pairs of positive and negative particles, and hence they can be separated using two electrodes.

If there are such entities as virtual particles, we can harness it and charge batteries for everything from nothing. An endless power source from nothing. Only one problem, there are no virtual particles in

reality; they exist only in physicist's minds and in their notebooks, in the virtual world. Vacuum has no temperature. Vacuum has no energy. Vacuum energy, vacuum temperature are oxymorons. The only place where virtual particles are popping up randomly is in physicists' heads, not in vacuum.

Nothing can expand without temperature. There is no massless energy. There is no massless temperature. Space cannot expand since massless space has no temperature, no energy, no entropy. Space cannot expand. Space cannot be warped by objects. Mass of an object cannot warp space. How can a mass warp space when the mass of an object does not even occupy space? Space is not warpable. Space does not react to energy. Space, which is nothing, reacts to tithing. No particles can pop up randomly in space. There are no such things called virtual particles in a vacuum. If there are virtual particles we should have separated them using electrodes.

A symmetry of a mathematical equation not necessary to be real. In an equation time can run forward as well as backward due to mathematical symmetry, but backward time is not real. Time cannot run backward, because our definition of time is based on planetary motion; we cannot reverse the planetary motion. An equation applies for both electrons as well as its mirror image particles due to mathematical symmetry, but the mirror image of an electron, so called positron, does not exist, it is not real. If an experiment confirms the existence of a mirror image electron or positron, then, it must be a result of an experimental misinterpretation as it was the case with Anderson cloud chamber experiment.

There are many experimental misinterpretations in physics. Some of the experimental misinterpretations include Arthur Eddington's use of solar eclipse data to verify General Relativity, the use of Double-Slit experiment with a beam of electrons to verify de Broglie's particle waves, Stern-Gerlach experiment to make the false claim that spin is quantized and two dimensional, Anderson's cloud chamber experiment for anti-particles or positrons, Hubble's use of star redshift to claim galaxies are moving away and universe is expanding, and many others [2,3].

Space cannot be warped since a mass cannot interact with space. A mass cannot exert a force on space. A mass only interacts with another mass, not the space. A single mass has no gravitational force. A mass in itself has no gravitational potential energy. A gravitational potential exists between masses. There is no gravitational potential at any position in space in the vicinity of a mass until a mass is placed in that position. There is no lingering negative gravitational potential density around a mass. A single mass has no gravity.

Mass is not energy. Energy is not mass. There is no energy without masses. There is no independent entity called energy. Energy is an interaction between masses. Energy is the kinetic energy of masses, the

rest are potential energies. Potential energy is not energy until it is converted into energy. A mass m has energy E=mc² if and only if the mass m is moving at speed c from the start, which is not possible, E≠mc². In Special Relativity, Einstein's rest energy of a particle of mass m is imaginary, E=jmc², not real; it does not exist. E=jmc² stems from the false assumption that the light is relative. Light is not relative. A stationary mass does not have speed c relative to light and hence E≠mc². A mass cannot be converted to energy. The rest energy in Special Relativity is nonexistent, E=jmc². Mass in a closed system is conserved. Energy in a closed system is conserved. No Special Relativity is required [4]. Light does not behave as golf balls. Mass cannot be converted to energy since energy has no existence without mass. There is no kinetic energy or temperature without mass. Energy has no independent existence. Mass and energy are not equivalent. The fact that Einstein's rest energy of a mass is imaginary, E=±jmc², shows that mass and energy are not equivalent and mass cannot be converted to energy.

"Negative energy is a result of disregarding the direction of c in the false relationship E=pc. E=pc does not exist since the energy in Special Relativity is a complex vector **E**=pc±jmc². Energy must be scalar and unique. In Special Relativity, energy is not scalar, not unique. Special Relativity has no existence"

"It is the velocity of light, both the speed and the direction, that is observer independent, not the speed of light itself. Velocity of light is naturally observer independent since no observer can bend the path. The path of light is a constant and can only be altered by the change of medium. The path of light is observer independent. It is the path as a whole that moves relative to observers, not what is traveling on the path. The speed of light on its fixed path is naturally observer independent. No Special Relativity is required."

Maxwell equations apply for the propagation of light. Motion of light bursts are not governed by the Maxwell equations. The motion of light bursts are relative. Propagation of waves is not relative. A moving light burst shifts against the motion of an observer while light propagates unaltered on its path. Propagation of light on its fixed path is observer independent naturally [4].

VIII. EINSTEIN RELATIVITY (SPECIAL RELATIVITY AND GENERAL RELATIVITY) ARE INCOMPATIBLE WITH CLOCKS

Lemma:

Space and time are absolute in the Lorentz Transform when the Lorentz Factor is equal to the Proper Universal Transformation Factor γ^2. When when the Lorentz Factor is γ^2, the relative distance axis **x′** and the relative time axis **t′** are frame independent, **x′=x** and **t′=t**, clocks and meter sticks are universal.

Time does not exist. The time is a definition. We define time width, a day or a year. What is fundamental in the universe is the triplet (space, mass, motion). We use motion to define a time width. On earth we define the time width in earth-days or earth-years. One orbit of the earth or a year is independent of observers. An earth-year is an earth-year whether you are on earth or on a spaceship traveling at the speed of light. There is nothing to prevent from traveling at the speed of light. If we are on mars, we may define time in mars years. There is no time until we define it. There is no flow of time. What is there is motion of objects.

Clocks do not determine the time, a day or a year. We engineer clocks to break down a day into smaller intervals. If a clock runs faster or slower out of synchrony with the day or the year, then that clock does not represent time, and the clock is simply useless until it is re-synchronized with the day or the year. Clocks do not represent time. Clocks only represent the passing of time, time delay.

The Lorentz factor, Special Relativity, and General Relativity deal with the average forward and return time of a beam of light. Average forward and return time of a beam of light only available after the fact, off-line, not on-line. Special Relativity and General Relativity that depend on the average return time of a beam of light cannot describe the motion dynamics, the instantaneous one-way time. Special Relativity and General Relativity are incompatible with the one-way ticking time given by clocks. Mechanisms of Clocks are not based on the average return time of a beam of light. Clocks do not provide the average return time of a beam of light.

The Lorentz-Einstein factor $\gamma=1/(1-v^2/c^2)^{1/2}$ is a result of using average return time of a light beam as the time in Special Relativity. In Special Relativity the time $t=t_{ave}$, where $t_{ave}=(t_a+t_b)/2$, t_a is the forward travel time and t_b is the backward travel time of a beam of light to travel a given distance forward and backward. Clocks do not give the average return time of a beam of light. The Lorentz factor $\gamma=1/(1-v^2/c^2)^{1/2}$ and Special Relativity based on the average return time of a beam of light do not hold for one-way time given by clocks.

Average return time cannot be obtained online. Average return time has to be obtained off-line and hence the Lorentz factor and Special Relativity are not applicable in real time on-line dynamic systems.

Clocks are engineered to give one-way linear time and hence clocks are incompatible with Special Relativity and General Relativity [8].

Lemma:

Time in Special Relativity is defined as the average return time of a beam of light. Average return time of a beam of light has to be calculated off-line and it is not given by clocks. Clocks are incompatible with the Special Relativity. Special Relativity cannot be used to model dynamic systems and the universe.

Clocks cannot be used in Special Relativity experiments unless the clocks are designed to give the average return time of a beam of light; none of the clocks available gives the average return time of a beam of light. Average return time is not the instantaneous time.

Special Relativity derailed the train relative to observers, which is not physically possible; it is not real. Observers cannot derail a train by running away or towards a train obliquely. No observer can derail a train. Observers cannot bend light. Special Relativity is false in its foundation. Special Relativity cannot exist.

Clocks do not tick the average forward and return time of a beam of light. Average forward and return time cannot be given by clocks on a dial. Average return time has to be obtained off-line. Clocks neither define nor determine the time. Clocks are engineered to break down the time we have already defined as a day or a year into smaller intervals. We define the time, the day or the year. Clocks break down the time, the day or the year, we have already defined into smaller intervals. Clocks do not give the time unless the clocks are in synchrony with the day or the year. If a clock runs faster or slower, the clock is out of synchrony and hence the clock does not give the time and the display of the clock is useless.

Observers cannot change the path of light. Gravity cannot change the path of light in a vacuum. What is displayed on a clock cannot change relative to observers. Clocks cannot tick slower or faster relative to observers. Gravity affects the mechanism of clocks and hence the display on clocks. Display on a clock does not represent time unless the display is in synchrony with the day or the year. If a clock displays 12:00, observers at the same distance at any instant will see it as 12:00 irrespective of the speeds of the observers. If an observer is at a distance from the clock, it takes time for the observer to see that the clock displays 12:00 on its dial since the light has to travel the distance for the observer to see. This delay does not alter the time itself. This delay is independent of the speed of the observers if all the observers are at the same distance from the clock at any given instance. If the observers are at different distances from the clock tower, they see the time at different times on their clocks. It is the time delay of an event that depends on observer motion, not the time itself. These differences do not change how the clocks are ticking.

The path of a beam of light does not change relative to observers. The distance a beam of light travels on its path at a given time delay is independent of the observer motion. It is the path that shifts against the motion of the observers. The distance light propagates on its own path is independent of observers [4].

Consider a clock tower that displays 12:00:00. Observer-A travel at velocity **u**. Observer-B travels at velocity **v**. Observer-D travels at velocity **w**. Consider, at any given instant, all the observers happen to be at the same distance x from the clock tower. Assume it takes 1 second for light to travel distance x. Then, irrespective of the velocity of observers, observers notice that the clock tower displays 12:00:00 when their clocks display 12:00:01. Time is not relative. Time does not depend on speed. It is the observed time delay of an event that depends on the velocity of the observer. The time delay of an event is not the time itself. Clocks do not give the time. Clocks give the time delay. The reading on a clock is meaningless without a reference.

If we see a distant clock displaying 12:00:00 when our wristwatch displays 12:00:01, it does not mean that the distant clock is running slow. It is only that it took 1 second for light to bring the picture of 12:00:00 to our eyes from the distant clock. What we observe does not determine what it is. It takes time for us to see distant events does not mean distant events run slow relative to us. It is the time delay of an event that is relative, not the time itself, not the ticking of the clock. Time on a clock is independent of the observers. The ticking of a clock is independent of observers. Observers cannot alter the ticking of clocks. It doesn't matter at what velocity observers are moving, at any instant, if all the observers are at the same distance to an event, they all observe the event simultaneously.

"It is the time delay of an event that is relative, not the time itself."

The Doppler effect is not real. The Doppler effect is for observers' eyes and ears only. The Doppler effect does not change the event itself. The Doppler effect cannot change the actual frequency of a wave. The Doppler effect is an observer phenomenon, not a phenomenon of the wave itself or the observed event itself. There is no approaching or receding light without an observer. Observer motion does not determine the frequency and wavelength of waves that propagate.

Our motion towards or away from a light source does not alter the frequency of a wave even though we observe a shift in frequency. The observed redshift of light from a star cannot be attributed to the Doppler effect. Expanding universe cannot generate a Doppler shift. Expanding or contracting universe cannot change the wavelength of light since light is not anchored to space. Universe is not expanding [8]. Space cannot expand or contract. It is the matter that expands or contracts. The red shift of a star from a

galaxy cannot be used to claim that the galaxy is moving away unless all the billions and billions of stars in the galaxy are having the same redshift. The redshifts of stars in a galaxy are not the same. The red shift of a star from a galaxy cannot be used to claim galaxies are moving away from us.

Gravity cannot alter the speed of a clock unless the mechanism of the clock is affected by gravity. Observers cannot alter the speed of a clock. Clocks cannot run slower or faster relative to observers. Observer speed determines the time delay to reach a destination. Time delay for an event is not the time itself. The observed time delay of an event varies with the distance to the event and cannot be attributed to the event itself. Distant clocks do not run slower. Speed of a clock is not determined by observers.

Clocks do not run slower relative to a runner. If we disregard the effect of the motion on the mechanism of clocks, moving clocks do not run slower, it is only that it takes longer for us to see the display of the clock if the clock is moving away from us. If it takes 1 second for the light carrying the picture of 12:00:00 on a distant clock to reach us, our clock will display 12:00:01. Both clocks tick at the same rate independent of the motion if we disregard the environment difference on the mechanisms of the clocks. Time is independent of motion. Time delay of an event depends on observer motion.

If you run around a clock tower in a circle, it does not matter what your speed is, the time difference between reading on the clock tower and on your wristwatch would be the same provided that the mechanism of your wristwatch is unaffected by the motion.

Passive observation of an event has no effect on the event itself. The frequency of light emitted by a source is unaltered relative to a moving observer even though the observer observes a frequency shift. The observed time or frequency shifts of an event cannot be attributed to the event itself.

If the time is t, $t \neq space/c$, $t \neq x/c$. Time-delay t_d is given by $t_d = $(distance light travels)$/c$. $t \neq t_d$. $c \neq x/t$. $c = \Delta x/\Delta t$, where Δx is the distance light travels and Δt is the time taken to travel the distance Δx. Light does not have to join space and time into a single entity by the relationship $x = ct$ to travel at constant speed. It is $\Delta x = c\Delta t$. There is no dimension of time or time axis. There is no unified entity called spacetime. Space and time are independent. Space exists. Time does not exist until we define it. We define a time interval, not the time itself. Time delay of an event is relative. Time delay of an event is independent of the instances of time. The distance traveled depends on the observer's speed. The distance traveled is independent of the

space coordinates. Distance traveled and time delay taken to travel the distance are independent of spacetime. Space and time cannot be brought to the equation. Space and time are mutually independent. There is no energy without matter. Vacuum by definition has no matter. There is no vacuum energy.

"The ticking of a clock is not relative. Ticking of a clock is observer independent. Time is not relative. Time is observer independent. It is the time-delay of an observed event that is relative. Time-delay of an observed event is observer dependent. Observed time-delay is independent of time itself. Time-delay and time are not the same."

"Space and time do not have to be stitched together into a single entity called spacetime for light to propagate at constant speed."

Lemma:
Special Relativity and General Relativity do not deal with space and time. They deal with distance traveled and the time delay taken to travel the distance. The distance traveled and time delay taken to travel the distance are independent of spacetime coordinates. Observed time delays of events are relative, time itself is not relative. Special Relativity deals with distance-delay. Distance-delay is not space-time. Space and time cannot be brought to the equation.

IX. SPECIAL RELATIVITY AND GENERAL RELATIVITY CANNOT EXIST
Lemma:
Although every inertial frame is a stationary frame for the motion of objects of mass, every inertial frame is not a stationary frame for propagation of light.

It is not just Einstein's Special Relativity that is fundamentally flawed [4], Einstein's General Relativity is also fundamentally flawed. Mistakes in the conception of General Relativity are many. General Relativity is based on the hypothetical assumptions that are false:
1. Light is not relative (Fundamental Mistake in Einstein's Relativity is the assumption that light is relative and behaves as golf balls. Without this false assertion, there would be no Special Relativity, no General Relativity, and no Modern Physics in general. There is no proof for this assertion.). Light does not have to comply with Galileo's assertion that observers in a closed cabin cannot determine if the cabin is moving or stationary. When Galileo made this assertion he was referring specifically to by throwing objects of mass or motion mechanics. Light does not have to comply with motion mechanics. We cannot force light to comply with Galileo's claim since light has no mass, no momentum.

2. Gravity and acceleration are not equivalent (Einstein's equivalence principle is invalid). There is no acceleration without a change of position, $a=d^2x/dt^2$.
3. Gravity cannot bend light.
4. Gravity cannot affect light.
5. Gravity cannot accelerate incoming light and decelerate outgoing light, the massless.
6. Space is not warpable. Objects cannot interact with space, the massless.
7. Light cannot propagate on geodesics. Light cannot sense the geodesic.
8. Mass cannot warp space even if space is warpable.
9. If space is warpable, it is the volume of an object that warps space.
10. If space is warpable, planetary motion is not possible; planetary systems will collapse. If space is warpable by an object of mass, the motion of an object generates a change in the curvature of the warp that resists the motion.
11. Special Relativity is not the same as the Lorentz Transform. They are polar opposites.
12. The Lorentz Transform cannot transform Maxwell equations for propagation of light onto an inertial frame.
13. The curvature of the space cannot be determined by the mass of an object since the mass of an object does not occupy the space.
14. Time is not relative. It is the time delay of an event that is relative. Time delay of an event is not the time.
15. Gravity cannot slow time itself. Gravity has no effect on the massless.
16. Light has no momentum. The massless has no momentum. An entity that has no standstill existence has no momentum.
17. Maxwell equations for propagation of light are not relative. Light does not propagate relative to inertial frames.
18. Although every inertial frame is a stationary frame for an object of mass, every inertial frame is not a stationary frame for light. We cannot force the light to behave as an object of mass since light has no mass.
19. A frame in space where light naturally propagates is the only stationary frame for light. A beam of light is not on a stationary frame relative to passengers in a moving train. For an observer outside the train in space where light naturally propagates, a beam of light is in a stationary frame. This is a direct contrast to the motion of an object of mass.
20. Time delay of an event is not time itself.
21. The distance traveled by an entity for a given time delay is not space.
22. There is no coordinate dependent time. It is the distance traveled that is associated with a time delay. The distance traveled and time taken to travel the distance is independent of spacetime coordinates.
23. Distance-delay is not space-time.
24. Space and time are mutually independent.
25. Spacetime function is not unique.
26. Time is not an axis.
27. Relative time is not unique. Relative time is directional.
28. Spacetime function is not unique.
29. Galileo-Newton relativity is incorrect.
30. Galileo's claim that it is not possible to determine if you are stationary or moving at constant speed applies only for motion of objects of mass, not for the massless, not for the light.
31. Light does not have to comply with Galileo's claim made that refers to the motion of masses.
32. Newton mechanics that hold for objects of mass cannot hold for light, the massless
33. Motion mechanics of objects of mass cannot be unified with the propagation of electromagnetic waves, the massless.

No external observer can bend light, derail a train, or ditch a vehicle. Light is not relative and cannot behave as golf balls. The massless cannot be relative and cannot have momentum. When light cannot be relative, Special Relativity and General Relativity face an abrupt end irrespective of how beautiful mathematics they entail.

Special Relativity and General Relativity do not deal with space and time themselves. Time itself is not relative. It is not possible to determine if spacetime is relative since there is no frame of reference independent of spacetime. We need a frame of reference independent of spacetime if we want to observe if spacetime is relative; no such frame exists. A frame of reference has no existence without spacetime. Whether it is a stationary frame or moving frame, all the frames are in the spacetime itself. The distance x travels in time delay t say nothing about space and time. Distance-delay is not space-time. Distance-delay says nothing about space-time. The distance x traveled in time delay t is not a coordinate in space. A coordinate in space does not have a time-delay attached to it. Only the distance traveled has an associated time delay. Time delay is not time. The distance is not space.

Special Relativity and General Relativity deal with the observed time delay of an event. The observed time delay of an event is relative. If you are closer to an event, you observe it earlier than an observer further away. If you run towards an event, you will see it earlier than someone who is running away from the event. Observed time delay is not the time itself.

The shift of frequency of light does not require the change of time itself. We do not need the change of time to change the frequency of a wave. Frequency has no energy. The change of frequency does not require the change of time. The change of frequency has nothing to do withs time itself. The speed of a clock does not determine the speed of time. The reading on a clock is meaningless unless it is synchronized to the definition of a time width. Clocks do not determine the time. We cannot engineer the rate we age. Clocks do not determine the rate at

which we age.

a). Gravity is Not Equivalent to Acceleration:

The core of General Relativity is Einstein's equivalence principle. The Equivalence Principle states that acceleration and gravity are equivalent. The fact is that acceleration and gravity are not the same. Acceleration is the rate of change of velocity, $\mathbf{a}=d\mathbf{v}/dt$ or $\mathbf{a}=d^2\mathbf{x}/dt^2$, where $\mathbf{v}$ is the velocity of the object and $\mathbf{x}$ is the position of the object. There is no acceleration without the change of the position $\mathbf{x}$ of an object. On the other hand, an object of mass sitting at standstill on a gravitational object has no change of position and hence $\mathbf{a}=d^2\mathbf{x}/dt^2=0$. An object sitting on a gravitational object has a force, but has no acceleration. Newtons F=ma or m=F/a applies only for moving objects or when $d^2\mathbf{x}/dt^2 \neq 0$, where F is the force and m is the mass of the object. Newton's relationship m=F/a does not apply for a=0 or for $d^2\mathbf{x}/dt^2=0$.

A falling apple has an acceleration. An apple on a tree has a gravitational force, but has no acceleration. Gravity cannot bend light, the massless. The path of a horizontal beam of light on a stationary cabin sitting on earth cannot be the same as the path of a light beam orthogonal to the direction of motion of a moving cabin relative to passengers in the cabin. Einstein's equivalence Principle is false. General Relativity cannot exist.

Why do we have to force the light in a path that prevents us from using the light to measure the speed of a cabin from within when it is obvious that we can obtain the speed of a cabin from within using a light burst. Why should the light, the massless, have to comply with Galileo's claim that was specific to the motion of objects of mass. Why should the claim of Galileo in the dark ages be supreme. Light, the massless, cannot be in compliance with Galileo's claim. We cannot force the light to behave as an object of mass. Galileo's claim that the passengers on an inertial frame cannot determine its speed by throwing golf balls cannot be extended to light.

We can use a beam of light to determine if the cabin is stationary, moving at constant speed, accelerating, and the speed of the cabin from within the cabin using a beam of light since light is not relative and the Maxwell equations for propagation of light are not transformable onto an inertial frame.

b). Light Has No Momentum and Propagation of Light is Not Relative:
Theorem:

Any entity that has no standstill existence cannot have momentum and cannot be relative. Light has no standstill existence and hence light cannot be brought to a halt. Light is not relative and has no momentum.

General Relativity is also based on the assumption that the light is relative. An entity such as light that has no standstill existence cannot be relative. If you want to consider the motion of an entity-A relative to another entity-B, the entity-B must be able to be brought to a complete stop. Entity-A cannot have a relative speed relative to entity-B, if entity-B has no standstill existence. No object can have a relative speed c relative to light since light cannot be brought to a stop.

Relative to an observer, the speed of light on its path remains constant c irrespective the speed of the observer. However, if an observer is traveling at velocity $\mathbf{v}$, then, the path of light or the track of light moves at velocity $-\mathbf{v}$ relative to the observer since the observer has a stand still existence. It is the path of light as a whole that moves relative to the observer at velocity $-\mathbf{v}$. The speed of light and the direction of light on the path, the velocity of light $\mathbf{c}$, remains unaltered relative to the observer motion. However, no object of mass has relative speed -c relative to light since light is not relative and has no standstill existence.

The massless cannot have momentum. Light has no mechanical energy. Light has no temperature. What light has is the electromagnetic potential energy. Potential energy is not energy unless it is converted to mechanical energy by charge particles. There is no momentum without mass. Light has no momentum. Any entity with momentum must be able to be brought to a complete stop by applying an equal and opposite momentum. Light cannot be brought to a stop and hence light cannot have momentum. Light cannot behave as golf balls. Einstein's Relativity is based on a false conjecture that light is relative. Lorentz did not transform Maxwell equations for propagation of light onto an inertial frame. Einstein did not transform Maxwell equations onto an inertial frame. Maxwell equations are not transformable onto inertial frames. Einstein's transformation of Maxwell equations onto an inertial frame using the Lorentz Transform is a mathematical deception [6].

Even though an inertial frame is a stationary frame for an object of mass, an inertial frame is not a stationary frame for light. The x and t for light in the Lorentz Transform are not for a passenger in a moving cabin. The x and t for light in the Lorentz Transform are for the frame where light naturally propagates in space. The x and t for light in the Lorentz Transform are not observer perceptions. The x′ and t′ for light in the Lorentz Transform are for a passenger in a moving cabin. The transformation of Maxwell equations onto an inertial frame is real, not an observer's perception. Once the Maxwell equations are transformed into an inertial frame, we are dealing with x′ and t′ within the inertial frame. This is the complete opposite of motion mechanics of objects of mass where every inertial frame is a stationary frame for an object of mass.

Maxwell equations for propagation of light are not transformable onto an inertial frame. Light does not propagate relative to moving frames. Light is not relative.

c). Gravity Does Not Bend Light:

Gravity has no effect on light.Gravity has no effect

on the massless. The refraction of the bending of light near a gravitational object is not a direct gravitational action on light. There will be no refraction of light near a gravitational object in the absence of a medium surrounding the gravitational object or in a vacuum. In the presence of a medium surrounding a gravitational object, gravity generates a density gradient of the medium. The density gradient of the medium diffracts light, which is gravitational lensing. There is no gravitational lensing in the absence of a medium or in a vacuum. If a gravitational object is surrounded by a medium, the larger the mass of the gravitational object, the larger is the density gradient of the medium and hence steeper the bending of light. The bending of light near a gravitational object cannot be attributed to space warp in General Relativity. Gravitational lensing has nothing to do with General Relativity [8]. Even if space is warpable, the mass of an object cannot warp space since the mass of an object does not occupy space; it is the volume of an object that occupies space.

d). Light Does Not Propagate on Geodesics:

In the absence of a medium, light takes a straight path even in the presence of gravitational objects. Light cannot take a curve path at constant speed. Geodesics are restricted paths. A beam of light orthogonal to a geodesic cannot take the geodesic. Geodesic is meaningless for the massless. Geodesic does not exist for the massless. The massless cannot sense the geodesics. Geodesics do not exist for light. Geodesics cannot constrict the propagation of light. Gravity has no effect on light, the massless. Gravity has no existence for light and light has no existence for gravity. The direction and the speed of light are only alterable by the change of the medium or the density gradient of the medium.

Light has no momentum. If light has a momentum, light must be stoppable with an equal and opposite momentum. Light has no standstill existence and hence light is not stoppable. It is not possible to apply an equal and momentum on light. If light has no momentum and light cannot be brought to a halt, light cannot be relative. Light is not relative. Gravity cannot determine the path of light. Gravity cannot bend light. Light cannot take a curved path at constant speed. Light cannot propagate on geodesics since the path of light is determined by the change of the medium.

Space is not warpable. Light cannot propagate on the curvature of space even if space is warpable. If space is warpable, the curvature of space is not determined by the momentum or the mass, it is determined by the volume. Even if the space is warpable, neither the light nor an object of mass has any way to associate with the curvature of the space. If the space is warpable, neither the mass nor the momentum has any association with the curvature of the space. Space is not warpable. Mass cannot warp space. Gravity has no effect on light.

A horizontal beam of light in a vertically moving cabin at an acceleration takes a parabolic downward path. A horizontal beam of light in a standstill cabin on a gravitational object travels horizontally unaltered. Claim in General Relativity that a horizontal beam of light in a stationary cabin on a gravitational object takes a parabolic downward path is false, wishful thinking to make Einstein's theories valid, nothing more. The Michelson-Morley experiment did not confirm it. Theoretical expectations in the Michelson-Morley experiment were wrong. The conclusions of the Michelson-Morley experiment were wrong. Michelson and Morley had no clue what they were doing. Physics textbooks writers have no understanding of the Michelson-Morley experiment.

Gravity cannot bend light. Gravity has no effect on the massless. Gravity has no effect on light in the absence of a medium. Gravity cannot bend light in the absence of a medium. Gravity and acceleration are not equivalent. Einstein's Equivalence Principle that the General Relativity founded upon is false.

e). Lorentz Transform is a Mathematical Blunder:

To claim that the light is relative, Einstein used the Lorentz Transform. The Lorentz Transform and Special Relativity are not the same; they are polar opposites. The Lorentz Transform is supposed to transform the Maxwell equations for light from a frame where light physically propagates in space onto an inertial frame. When the transformation is carried out, the relative distance and relative time are what a passenger on the frame measures; they are not what an external observer measures; they are not external observer's perceptions. The expression for the relative distance in Special Relativity and the expression for the relative distance in the Lorentz Transform are polar opposites.

Light is stationary only on the frame where light physically propagates. Light is not stationary for a passenger in a moving train. Every inertial frame is not a stationary frame for light. It is only for the motion of objects of mass that every inertial frame is a stationary frame. It is only a moving object of mass that is stationary for a passenger in a moving train.

Light where the path is constant that can only be altered by the medium cannot carry momentum, cannot be relative. Maxwell equations for propagation of light cannot be transformed onto inertial frames. Light cannot be assumed to carry momentum even hypothetically since the path of light is constant that can only be altered by the change of the medium. Both the path and the speed of light on its path must be observer independent. In Special Relativity, the path of light is observer dependent, which is not possible.

In the Lorentz Transform, x' and t' are what exist on the moving frame. In the Lorentz Transform, x' and t' are what a passenger in a closed cabin in a moving train measures. In the Lorentz Transform, x' and t' are not observer's perceptions. The Lorentz Transform does not assume light to carry momentum and behave as golf balls. This fact is reflected in the relationship of x' in the Lorentz Transform since the two equations in the Lorentz Transform are equivalent to $x'=x/\gamma-vt'$. This is what a passenger on the moving

frame measures when the light is not assumed to carry a momentum. A burst of light lags behind relative to the moving train since light is not relative. Obviously, this is not the x′ in Special Relativity since light is forced to carry a fake momentum and behave as golf balls in Special Relativity.

In Special Relativity, x′ and t′ are what an observer outside the train observes under the false assumption that light carries a fake momentum and behaves as golf balls. In Special Relativity, x′ and t′ are observer perceptions. In Special Relativity, for motion in the direction of motion of the frame, x′=x/ɣ+vt′. Note the difference in polarity. In the Lorentz Transform it is x′=x/ɣ-vt′ whereas in Special Relativity it is x′=x/ɣ+vt′. They are polar opposites. They are two different concepts.

In Special Relativity, relative time and relative distance dilation relationships y′=ɣy and t′=ɣt hold only for the motion orthogonal to the motion of the frame, on lateral plane. For motion at an angle θ to the motion of the frame, the relativity factor η(θ) towards the direction of motion is different from the relativity factor η(θ+180°) for motion against the direction of motion of the frame. The relativity factor η(θ) at an angle θ depends on the polarity of the speed of the frame, ±v. The Lorentz Transform applies only in the direction of motion of the frame. The path of light is observer independent in the Lorentz Transform, which is the direct opposite of the Special Relativity.

Special Relativity is relative to an external observer under assumption that light carries a momentum. The Lorentz Transform is relative to a passenger inside a train without the assumption that light carries a momentum. If light carries a momentum light cannot propagate. Any entity with momentum is subjected to acceleration and deceleration in the presence of external forces and collisions. The massless cannot have momentum. It is only that light can generate momentum in the presence of charge particles on the lateral plane orthogonal to the path of light, not on the path of light.

In the Lorentz Transform, x′=x/ɣ-vt′ is for a passenger in the train. In Special Relativity x′=x/ɣ+vt′ is for an observer outside the train. They are polar opposites. The Lorentz Transform and Special Relativity are polar opposites. They have nothing in common except the factor ɣ that had been forced on the Lorentz Transform where it does not belong. The factor ɣ applies only for motion orthogonal to the motion of the frame, on the lateral plane, not in the direction of motion of the frame.

If time is relative, the time dilation factor is directional and the time dilation factor ɣ applies only for motion orthogonal to the motion of the frame, on the lateral plane. Time dilation factor for any other direction depends on the angle between the direction of a beam of light and the direction of motion of the frame. The lateral plane time dilation factor ɣ cannot be forced upon on other directions as Einstein did.

The ability to transform the Maxwell Equations onto an inertial frame is necessary for the light to be relative, but not sufficient; it is necessary that the Lorentz Transform must be unique. The Lorentz Transform is not unique [6]. The Lorentz Transform cannot transform Maxwell Equations onto an inertial frame. Light is not relative. The Lorentz Transform (x′=x/ɣ-vt′) and Special Relativity (x′=x/ɣ+vt′) are not the same; they are polar opposites. Both Special Relativity and General Relativity are conceptual and mathematical blunders.

f). Mass Cannot Warp Space Even if Space is Warapable:

The core of the General Relativity is the idea that the mass of an object warps space. Although the idea of an object distorting the space is not possible and meaningless, let's assume hypothetically that the space is warpable. If the space is warpable, it is not the mass of an object that warps the space, it is the volume of an object that warps the space. It is the volume of an object that occupies space, not the mass of an object. Space cannot be warped by an entity that does not occupy space. If the space is warpable, for an entity to warp the space, that entity must occupy space. Mass of an object does not occupy space. It is the volume of an object that occupies the space.

If the space is warpable, the object of mass m and volume v cannot generate the same space warp as the object of the same mass m with larger volume V. If the space is warpable, the warp of an object of a larger volume V of mass m will be larger than the smaller object of volume v of the same mass m. If the gravity is determined by the curvature or the warp, the gravity of an object of mass m with larger volume V is larger than the gravity of an object of mass m with a smaller volume v. If the gravity is the curvature of the space, the gravity is determined by the volume of an object, not by the mass of an object. If the gravity is the curvature of space, the gravity cannot be determined by the mass of an object. General Relativity is self contradictory. Mass of an object has nothing to do with the warping of space by an object if the space is hypothetically assumed to be warpable. General Relativity is a conceptual folly.

Lemma:

If space is falsely assumed to be warpable and if the gravity is a result of the warping of space as claimed in General Relativity, then, the biggest distortion of the space and hence the largest gravity is generated by the most voluminous object, not by the most massive object. Even if space is warpable, the gravity of an object cannot be represented by the hypothetical warping of space by the object.

General Relativity is blind physics. The claim in General Relativity that the mass warps the space is false. Neither the volume nor the mass of an object can warp the space. Space is not warpable. The claim that mass warps the space in General Relativity is false, nonsense. If space is warpable by the mass of an object as suggested in General Relativity, or in other words, if the space is dynamic, perpetual motion

of the orbiting systems will not be possible, If the space is warpable, a moving object will generate a changing curvature that results in a resistance to its motion and as a result, orbiting systems will collapse if the space is warpable or dynamic. General Relativity cannot exist.

g). Any Entity that Cannot Be Brought to a Halt Cannot be Relative:

Einstein's Special Relativity is based on the false assumption that light is relative. For an entity to be relative, that entity must be able to be brought to a complete stop, to a halt. Any entity that has no standstill existence cannot be brought to a halt. Light has no stand still existence and hence cannot be brought to a halt. Any entity with momentum must be able to be brought to a halt by applying equal and opposite momentum. Any entity that cannot be brought to a halt by applying equal and opposite momentum cannot have a momentum. Light has no momentum. Light is not relative. Special Relativity cannot exist. Special Relativity and Modern Physics in general are blind physics.

Lemma:

An entity that has no standstill existence cannot carry momentum. Light has no standstill existence and hence cannot have momentum. Light does not propagate relative to inertial frames. Propagation of light is not relative.

Lemma:

If gravity is the curvature of space, gravity of an object is determined by the volume of an object, not by the mass of an object.

Corollary:

If space is warped by an object of mass, a moving object will generate a changing warp that resists its motion and hence the collapse of orbiting systems.

h). Clocks Do Not Determine Time:

Time is not relative. Time width is a definition. We define the time width in earth-days or earth-years and then engineer clocks to break down the day or the year into smaller intervals. An earth-day or earth year is independent of observers. An earth-year is an earth-year whether you are on earth, mars, or on a spaceship moving at the speed of light.

There is no time axis since neither the past nor the future is accessible. Space and time are independent. There is no single entity called spacetime. Space exists. We can travel in space. Time does not exist until we define it. There is no flow of time until we define a time width. The time width , a day or a year is independent of the motion of observers. Time is not relative. Time is not determined by clocks. Clocks simply break down the time, a day or a year, into smaller intervals.

Clocks do not determine how fast or slow we age, if they do, it is equivalent to, we are determining ourselves how fast or slow we age since we are the ones who engineer the clocks. The clocks we engineer cannot determine how fast we grow old. Clocks cannot change the time, the day or the year. Time cannot be relative. If time is relative, time cannot be non-directional.

If time is relative, directional motion cannot generate non-directional time. There is no frame that is independent of time to determine if the time is relative or not. There is no frame independent of spacetime to find out if spacetime is frame dependent. We cannot bring space and time into the equation. The distance traveled and time taken to travel the distance is not space-time. Gravity cannot bend light. Acceleration and gravity are not equivalent. The mass of an object cannot be relative. Speed of light is just the speed of light. Speed of light cannot limit speeds of objects of mass. Universe has no speed limit. Special Relativity and General Relativity have no existence.

In the Lorentz Transform, the proper time t' on the moving frame is given by $t'=(1-v^2/c^2)^{1/2}t$ or $t'=t/\gamma$, which is the opposite of the Special Relativity where $t'=\gamma t$. It is the average forward and return time for a given distance that is given by $t'(ave)=\gamma t(ave)$ in Special Relativity and in the Lorentz Transform. It is the average forward and return equations of the Lorentz Transform that are the same as the Special Relativity that defines the relative time as the average forward and return time of a beam of light. It is the average forward and return time of a beam of light for a given distance in the Lorentz Transform that is equivalent to relative time in Special Relativity, not the forward one-way travel time.

One-way forward relative time is not the same as the one-way backward relative time for the same distance for both the Lorentz Transform and Special Relativity. For one-way travel, the Lorentz Transform and Special Relativity are polar opposites. It is not the time itself that the Special Relativity deals with, it is the average forward and return time delay $\Delta t'=\gamma\Delta t$ Special Relativity deals with. We cannot model dynamic systems using average forward and return time.

What Lorentz Transform and Special Relativity deal with is the distance x traveled in time delay t, not the space and time themselves. Distance traveled in a given time delay is not space. Time delay taken to travel the distance is not the time itself. The distance-delay is not space-time. Space has no associated time. Coordinates have no time attached to them. It is the distance traveled that is associated with a time delay. The distance traveled is independent of the space coordinates. Time delay taken to travel the distance is independent of the space coordinates and the time.

Instantaneous time is used in the Lorentz Transform since the transformation of Maxwell equations onto an inertial frame requires the instantaneous time. Instantaneous time is not used in Special Relativity since the instantaneous time varies with the polarity of the speed of the frame, ±v. In order to overcome the polarity dependence of time, Special

Relativity had to define the time as the average forward and return time of a beam of light. Maxwell equations cannot be transformed onto an inertial frame using the average forward and return time of a beam of light. Maxwell equations have to work on real one-way time. Average forward and return time used in Special Relativity to make time non-directional along the motion of the frame is useless in the Lorentz Transform that requires one-way real time for transforming the Maxwell equations onto an inertial frame. Light does not propagate on average forward and return time.

The time in Special Relativity is defined as the average forward and return time of a beam of light. The average forward and return time of a beam of light only exists off-line. In Special Relativity, the time is assumed to be relative and the relative time t' is given by $t'=\gamma t$, where $\gamma=1/(1-v^2/c^2)^{1/2}$. This relative time does not exist since it is a calculated time; it is not given by clocks. This is the time derived as the average forward and return time of a beam of light. The average forward and return relative time is not given by clocks.

It is not the relative time t' that is related to the time t by the relationship $t'=\gamma t$, it is the average forward and return relative time delay that is related by the relationship, $\Delta t'=\gamma\Delta t$, where $\gamma=1/(1-v^2/c^2)^{1/2}$. Special Relativity deals with average forward and return relative time-delay, not the time itself. Time-delay of an observed event is not the time itself. The distance traveled is not the space itself. Special Relativity and General Relativity do not deal with time itself and space itself. Time itself and space itself have nothing to do with Einstein Relativity. We cannot bring space and time into the equation. We can only bring distance and time-delay into the equation. The distance traveled and time delay taken to travel the distance is relative. The distance traveled and time taken to travel the distance are independent of space and time. Space and time are not relative.

Lemma:
Time is not relative. If time is relative, time cannot be non-directional. Directional motion cannot generate non-directional time, impossible.

The observed time delay of an event is relative. The observed time-delay of an event is not the time itself. The distance traveled and the time taken to travel the distance are relative. The distance traveled is not the space. The time delay taken to travel the distance is not the time itself. Special Relativity and the Lorentz Transform deal with distance-delay; they do not deal with space-time. It is not possible to observe if spacetime is relative since there is no frame of reference independent of spacetime.

We need a frame of reference outside the spacetime in order to observe if spacetime is relative; no such frame of reference exists. A frame of reference has no existence outside spacetime. It is not possible to determine if spacetime itself is relative since all the frames are in the spacetime. Space and

time are not relative. Distance-delay is relative. Distance-delay is not space-time. Special Relativity is both mathematically and conceptually wrong. There is no space-time in Special Relativity. Space and time are unaffected by observers.

Lemma:
The distance-delay is relative. Space-time is not relative.

"Propagation of light has nothing to do with clocks unless the mechanism of the clocks is based on the propagation time of a beam of light. The time width defined as a day or a year is not determined by clocks. Clocks are engineered to break down the time width, a day or a year, into smaller intervals."

i). Einstein's Relativity is Invalid:
Maxwell equations are not transferable onto inertial frames. Lorentz did not transform Maxwell equations onto an inertial frame. Einstein did not transform Maxwell equations onto an inertial frame. Light does not propagate relative to inertial frames. An inertial frame is not a stationary frame for light. The stationary frame for light is where light naturally propagates, in space. The Lorentz Transform and Special Relativity are polar opposites for one directional motion. They do not have the same relative distance and relative time dilation relationships for one directional instantaneous motion. It is only for the average forward and return motion that the Lorentz Transform and the Special Relativity have the same relative values. Although the forward and reverse average values are the same, the forward and reverse averaging cannot eliminate the conceptual gulf between the Special Relativity and the Lorentz Transform for one-directional motion.

When light is not assumed to carry momentum, we have the Lorentz Transform. In the Lorentz Transform, a burst of light lags behind relative to passengers on the moving frame while the path is unaltered relative to both external and internal observers. As a result in the Lorentz Transform, a burst of light moves on a reverse angular path while propagating vertically relative to passengers on the frame.

When light is assumed to carry momentum, we have Special Relativity. In Special Relativity, a vertical burst propagates on an angular path towards the direction of motion of the frame relative to external observers while the path of the light remains unaltered relative to passengers on the frame.

Special Relativity and the Lorentz Transform are two completely different beasts, nothing in common except only the forward and reverse average values are the same when the motion in Special Relativity is in line with the motion of the frame. Special Relativity applies for any direction while the Lorentz Transform is limited to the motion in the direction of the frame. The Lorentz Transform is only for the motion in the direction of the frame.

Since the Maxwell equations cannot be transformed onto an inertial frame [6], the Lorentz

Transform propagation of light has no existence. Since the Maxwell equations for propagation of light cannot be transformed onto an inertial frame, light is not relative, cannot carry momentum, and hence cannot behave as golf balls; as a result, Special Relativity has no existence. The path of light and the speed of light on its path are naturally observer independent since they are constants that can only be altered by the change of the medium, and hence no Special Relativity is required [4].

Mass of an object cannot warp space. Einstein's equivalence principle is invalid. Space and time are mutually independent. There is no spacetime function. Special Relativity deals with distance-delay, not space-time. Clocks do not give the time; clocks give time delay. Time cannot be relative since time must be non-directional. Directional motion cannot generate non-directional time. Light has no momentum. Light is not relative. The massless has no momentum. Time does not exist until we define it. There is no flow of time until we define a flow. General Relativity cannot exist. General Relativity is fundamentally flawed. Special Relativity has no existence. Special Relativity is fundamentally flawed. The Lorentz Transform cannot transform Maxwell equations onto an inertial frame. Einstein's relativity is invalid. Einstein theories are mathematically and conceptually invalid; they are a product of invalid assumptions and mathematical oversights.

Mathematical oversight is in the transformation of Maxwell equations using the Lorentz Transform. The assumption that light has momentum and behaves as golf balls is false. The assumption that time is relative is false. The forcing of the relative time on the lateral plane in every direction is unjustified since if time is relative, the relative time is direction dependent. The claim that mass is relative cannot hold since the energy is not real if the mass is relative. The rest mass in Special Relativity is imaginary, $E = jmc^2$, not real, $E \neq mc^2$. Although Special Relativity claims that there is no absolute frame, Special Relativity has an inherent hidden absolute frame; a beam of light orthogonal to the motion of an entity is the absolute frame in Special Relativity. It is this choice of beam of light orthogonal to the motion of an object as the absolute frame that gives an object of mass imaginary rest energy $E = jmc^2$ in Special Relativity.

The mass of and energy are not equivalent. Mass of an object cannot be converted to real energy. Energy is the motion of masses. Energy is the kinetic energy of masses. Light has no energy. Light has no temperature. Frequency has no energy. Light cannot do any work without charge particles. There is no light without charge particles. What light has is electromagnetic potential energy. Potential energy is not energy unless it is converted to kinetic energy of masses. There is no kinetic energy without masses. There is no temperature without masses. There is no heat without masses. There is no entropy without masses. There is no massless energy. Mass cannot be converted to energy since energy has no existence

without masses. Both mass and energy must be conserved.

Positrons are a result of an experimental misinterpretation. If the vacuum can pop out electron-positron virtual particle pairs, we should be able to separate them using electrode-pair and we wouldn't have an energy crisis. Anti-particles cannot exist.

"Einstein's Relativity is both a mathematical and conceptual blunder. General Relativity based cosmology is just a fairytale. A Cinderella story."

X. GALILEO RELATIVITY IS INCORRECT

Lemma:
A moving object cannot be off its path relative to observers. A train-track cannot bend relative to observers.. A train must be on its track all the time relative to observers.

If object-A travels at speed **u** and object-B travels at speed **v** at an oblique angle to object-A, and object-B is stoppable, then, the relative velocity **w** of object-A relative to object-B cannot be obtained by the simple vector addition **w**=**u**-**v** as given in Galileo-Newton relativity since there is no path in the direction of relative velocity **w**, **w**≠**u**-**v**.

Lemma:
Galileo-Newton relativity is fundamentally invalid since the path of an object cannot be altered relative to observers. The path and the speed of an entity on its path are observer independent.

Relativity Theorem:
It is the path of an object that moves relative to the motion of an observer, not the object itself. It is the train-track that moves relative to an observer against the observer motion, not the train itself.

Corollary:
The foundation of Galileo-Newton relativity is incorrect. Galileo-Newton relativity only appears to be correct when the observer motion is parallel to the motion of an object.

When the observer motion is parallel to the motion of an object, it is not possible to distinguish the motion of the object itself relative to an observer from the motion of the path relative to an observer. As a result, Galileo-Newton relativity appears to be correct for the special case where the observer motion is parallel to the motion of an object even though in reality it is the path itself that moves relative to the observer motion even for this case, not the object itself.

If we have an object-A moving at velocity **u** and object-B moving at velocity **v**, then, according to the Galileo-Newton relativity, the relative speed of object-A relative to object-B, provided that the object-B is stoppable, is simple and straightforward and given by the simple velocity addition. Since object-B can be brought to a stop by applying negative momentum,

the relative velocity of object-A relative to object-B exists. The relative velocity **w** of object-A relative to object-B is given by **w=u-v** in the Galileo-Newton relativity. The problem is that this Galileo-Newton relative speed **w=u-v** is incorrect when **u** and **v** are not parallel. Object-A cannot have the relative velocity **w=u-v** relative to object-B as claimed in Galileo-Newton relativity when **u** and **v** are at an angle.

The problem is that the path given by relative velocity **w** is not real and does not exist. If object-A and object-B are motor vehicles, vehicle-A is traveling on road-A and vehicle-B is traveling on road-B. Vehicles must be on their respective roads relative to any observer. But, there is no road in the direction of the relative velocity **w** if **u** and **v** are not parallel.

If the vehicle-A has a relative velocity **w** relative to the vehicle-B as Galileo-Newton relativity suggests, then, the vehicle-A will end up in a ditch relative to vehicle-B, which is not possible; vehicles do not end up in ditches relative to observers. The vehicle-A must remain on the road-A relative to the vehicle-B all the time irrespective of the velocity of the vehicle-B, irrespective of the direction and the speed of the vehicle-B; this is not possible in Galileo-Newton relativity.

Observer motion cannot ditch a vehicle. The very act of observing cannot change the direction of a vehicle. You cannot direct a car into a ditch by running away from it. It does not matter at what velocity an observer is traveling, an observer cannot derail a train, cannot ditch a car, cannot deorbit a planet.

A valid logical relativity theory must maintain the fact that a train cannot be derailed relative to observers. A valid logical relativity theory must maintain the fact that a vehicle cannot be ditched relative to observers. A valid logical relativity theory must maintain the fact that a planet cannot be deorbited relative to observers. Observer motion cannot alter the path of an object and the speed and the direction of the object on its path. Observer motion cannot change the time, a day or a year. It does not matter at what speed an observer is traveling, it still takes 24 hours for the earth to complete one spin relative to the observer. Then, what changes relative to observer motion?

It is the path as a whole that moves against the motion of an observer relative to the observer. It is the train track as a whole that moves against the motion of an observer relative to the observer. It is the orbit as a whole that moves against the motion of an observer relative to the observer. It is only when the the direction of the observer motion is parallel to the direction of motion of the object that the relative speed of Galileo-Newton appears to be correct since the motion of the path relative to observer cannot be distinguished from the motion of the object itself relative to the observer when the path of the observer is parallel to the path of the object.

So, even when the motion of the observer is parallel to the path of the object, what is actually taking place is not what is expressed by the Galileo-Newton relativity even though the Galileo-Newton

relativity appears to apply for this case. That is because the object-A traveling at the relative speed **w=u-v** relative to object-B remains on the path of object-A unaltered when the path of object-A is parallel to the path of object-B. When the path of the object-A is at an oblique angle to the path of the object-B, Galileo Relativity is false and the Galileo-Newton relativity is no longer applicable. Observers cannot derail a train.

It is the rail that moves relative to observers against the motion of the observers, not the train itself. Train remains on the rails and travels at whatever the speed it is traveling unchanged relative to observers while the track moves against the observer motion at the speed of the observer. A moving object itself cannot move independent of its path relative to moving observers.

Relativity of an object has to be described by two vectors; these two vectors are not additive as in the Galileo-Newton relativity. If the observer-B is traveling at velocity **v**, then, the railway track moves at velocity -**v** relative to the observer-B. The velocity **u** of the train on its track remains unaltered relative to observer-B. We cannot add the vectors **u** and -**v** since there is no track present in the direction of **w=u-v**. There is no train track on the path described by Galileo-Newton relative velocity **w=u-v** for the train to travel. Moving train has no existence without being on the rail. **w≠u-v.**

Lemma:
Galileo-Newton relativity is fundamentally invalid.

It is the same with light. It is the path of light that moves relative to the observer-B at speed -**v**. The velocity of light **c** on its fixed path remains unaltered relative to the observer-B.

No object has velocity -**c** relative to light, because light cannot be stopped since light has no standstill existence. Any entity that cannot be stopped cannot be relative. Any entity that has a momentum must be stoppable by applying equal and opposite momentum. Any entity that has momentum must have a standstill existence. Light that has no standstill existence cannot have a momentum.

The claim in physics that light has momentum **p** is false since light is not stoppable by applying -**p** momentum. Light has no momentum. The massless has no momentum. Speed of an object of mass cannot be considered relative to light as it has been done in Special Relativity. A rest-mass has no speed c relative to light and hence a rest-mass has no kinetic energy, $E \neq mc^2$. In Special Relativity, this fact is apparent since $E=jmc^2$ in Special Relativity, $E \neq mc^2$. It is not just the Special Relativity and General Relativity that have no existence, the Galileo-Newton Relativity also has no existence. Relativity requires a new logical start. Logical Relativity is uncomplicated. No

Special Relativity is Required [4].

"Realization that it is not possible to transform the Maxwell equations onto an inertial frame is the essential first step for a new start to new logical Modern Physics [6]."

XI. MISTAKES IN SPECIAL RELATIVITY AND GENERAL RELATIVITY ARE NOT CORRECTABLE

Special Relativity is not Lorentz Transform compliant. Special Relativity is a perception of external observers. The Lorentz Transform is not a perception of external observers; it is a real brick and mortar transform. The Lorentz Transform physically Transforms electromagnetic fields onto an inertial frame. What passengers on the frame find is what was transformed. What passengers measure on the frame is x' and t', the polar opposite of Special Relativity. Every inertial frame is not a stationary frame for light. The only stationary frame for light is the frame where light naturally propagates, in space. Unlike for propagation of light, every inertial frame is a stationary frame for objects of mass. The foundation of the Lorentz Transform is not the same as the foundation of Special Relativity.

Special Relativity was based on a vertical light burst released in a moving train in the perspective of external observers under the assumption that light has a momentum and behaves as golf balls. The Lorentz Transform on the other hand is a perspective of a passenger on a moving frame for a light burst travels on its natural frame, in space, in the direction of the frame. Two completely opposite perspectives. Two orthogonal light beams. Two opposite perspectives. The path of light is observer independent in the Lorentz Transform. The Lorentz Transform does not assume light to behave as golf balls, Special relativity does. The path of light is observer dependent in Special Relativity.

To make the Special Relativity Lorentz Transform compliant, Special Relativity has to discard the false assumption that light has momentum and behaves as golf balls. This assumption is false and unnecessary. Once the false assumption that light behaves as golf balls is abandoned, the relative distance and relative time, x' and t', are relative to passengers in both Special Relativity and in the Lorentz Transform; they are the same but the problem does not end there because Einstein's Relativity Factor does not belong in the Lorentz Transform. Lorentz Transform cannot transform Maxwell equations for propagation of light onto an inertial frame [6] and no Special Relativity is required [4]. The motion or propagation of a fixed path is naturally observer independent.

Special Relativity and General Relativity are not fixable or correctable. The mistakes in Special Relativity are foundational mathematical and logical oversights. Mathematical mistakes are in the transformation of the Maxwell equations for propagation of light onto an inertial frame. Logical mistakes are many; one logical mistake is the assumption that time is relative. If time is relative, time cannot be non-directional.

Time cannot be relative because there is no time independent frame of reference to observe the time. There is no space independent frame of reference to observe space. There is no spacetime independent frame of reference to observer spacetime. What we observe is the time delay of an event, not time itself. What we observe is the distance to an event, not the space. Space and time are observer independent.

Another foundational mistake is the use of the average forward and return time of a beam of light as the time. A theory based on the average forward and return time of a beam of light is useless for one-way real-time systems. Being blind to the fact that the Lorentz Transform and Special Relativity are polar opposites for one directional motion is also a major mistake in Special Relativity.

The foundations of Special Relativity and General Relativity are at fault. When the foundation is at fault, everything that is built on that is groundless. Special Relativity and General Relativity cannot exist even hypothetically. Students believe it because they spent a large sum of money to learn it and they have to preach it to get a job. Professors believe it because they are paid to teach it, not to question its validity; they earn a living by believing it. There is no other reason for Einstein Relativity to remain except for the financial benefits it brings to the believers for believing; it is just like a religion.

The foundation in Special Relativity and General Relativity is the assumption that light is relative and behaves as golf balls. Light is not relative. Light has no momentum. Light does not behave as golf balls. Vertically fired beam of light from the bottom of a moving frame does not propagate vertically relative to the train. Maxwell equations for propagation of light are not transformable onto an inertial frame [6]. Light does not propagate relative to inertial frames. Special Relativity is invalid fundamentally in its foundation. Special Relativity is not fixable.

General Relativity is founded under the assumption that gravity is equivalent to acceleration and mass warps space. Newton's law m=F/a is not applicable for a=0, where F is the force and 'a' is the acceleration. The force divided by mass is not acceleration unless the mass is in motion. There is no acceleration, $\mathbf{a}=d^2\mathbf{x}/dt^2$, without motion. No a≠0 without dx≠0. For a stationary object on earth dx=0 and hence a=0.

An apple on a tree does not have an acceleration, a=0, even though it has a force. A falling apple has an acceleration, a≠0. A stationary object on earth is not equivalent to a moving object under acceleration. The path of a horizontal beam of light in a stationary cabin on earth is horizontal, not parabolic. The path of a burst of light orthogonal to the direction of motion of an accelerating cabin relative to a passenger in the

accelerating cabin remains unchanged while the burst shifts on a parabolic path. Einstein's equivalence principle is invalid.

For a mass to warp space, the mass of an object must occupy the space. The mass of an object does not occupy the space. It is the volume of an object that occupies the space. If the space is warpable, it is the volume of an object that warps the space. If space is warpable, the amount of warp is not a function of mass of an object, it is a function of volume of an object. If the gravity is the curvature of the space, the gravity is determined by the volume of an object, not by the mass of an object. As a result, General Relativity where gravity is determined by the volume of an object cannot be equivalent to Newton's gravity for any speed since gravity is related to the mass of an object in Newton's gravity.

Space is not warpable. The distance-delay in Einstein Relativity is not space-time. Spacetime function in Einstein's Relativity is not unique [6]. It is not possible to bring spacetime into the equation. We cannot represent distance-delay in the Lorentz Transform as space-time. Light does not follow the geodesic. Light cannot detect the geodesic. The direction of a beam of light is not guided by the geodesic. A beam of light orthogonal to the geodesic cannot follow the geodesic. The direction of light is determined by the density gradient of the medium, not by the geodesic. Light can propagate in any direction in a vacuum in the presence of a gravitational object. General Relativity is invalid in its foundation. General Relativity is not fixable [8].

Lemma:

Special Relativity and General Relativity are not fixable since light is not relative and for the fact that mass cannot warp space, mass is not relative, time is not relative, space is not warpable, distance-delay is not space-time, distance-delay function is not unique, gravity and acceleration are not equivalent.

"Spacetime cannot be brought into the equation."

XII. **BLIND SPOTS IN EINSTEIN'S RELATIVITY**

Special Relativity is based on the Lorentz Factor that contains the terms (c-v) and (c+v). The term (c-v) indicates a beam of light traveling at speed (c-v) in the forward direction relative to the frame of reference. The term (c+v) indicates a beam of light traveling in the backward direction at the speed (c+v). The presence of (c-v) and (c+v) in the Lorentz Factor and in the time dilation factor indicates that Special Relativity has the inherent hidden assumption that the speed of light depends on the frame of reference in order to show that the speed of light is independent of the frame of reference; that is the fallacy of Special Relativity. This contradiction resulted from Einstein's assumption in Special Relativity that light is relative and behaves as golf balls. When it is assumed that light is relative, the terms (c+v) and (c-v) are going to be in the equation; it is unavoidable. Any theory that

claims 'the speed of light is observer independent' cannot contain the terms (c+v) and (c-v); it is self-contradictory.

Einstein forced an artificial momentum on light and claimed that light has momentum; it was never proven, neither theoretically nor experimentally. If light has momentum, when a beam of light released from the bottom of a cabin in a moving train is reflected back from the ceiling of the cabin, there will be a change of momentum. If light has a momentum, when a horizontal beam of light is released from the back of the cabin along the direction of the motion of the train is reflected from the front wall of the cabin, there will be a change of momentum. If light is relative, when light is reflected back, there is a change of momentum and hence the system is no longer an inertial system. Special Relativity requires the system to be inertial, yet if light has a momentum, the system is not inertial. If light has momentum, the moving cabin thought experiment used in the derivation of Einstein's Special Relativity is no longer valid.

Special Relativity, General Relativity, and Modern Physics in general are founded upon the conjecture that light is relative and behaves as golf balls. The claim that light is relative and behaves as golf balls is never proven. Maxwell equations for propagation of light cannot be transformed onto inertial frames. The Lorentz Transform cannot transform the Maxwell equations onto initial frames. Light does not propagate relative to inertial frames. Light is not relative. Light does not carry momentum. An entity that a force cannot be applied to cannot be relative and cannot carry a momentum. A force cannot be applied to light. Any entity that cannot be accelerated or decelerated by an external force cannot be relative and cannot carry a momentum.

Light can neither be accelerated nor be decelerated by an external force. Light cannot be brought to a stop by an external force. Any entity with momentum must be able to be brought to a halt by applying an external force. However, to bring an entity with momentum to a halt by applying an equal and opposite momentum, that entity must be responsive to an external force. Light is not responsive to external forces. Most importantly, to bring an entity with momentum to a halt by applying an external force or by applying an equal and opposite momentum, that entity must have a standstill existence. Light has no standstill existence. Light cannot be brought to a halt by applying an external force or equal and opposite momentum since light has no standstill existence.

We cannot make light relative and behave as golf balls just by proclamation. Einstein gave momentum to light by proclamation. Maxwell equations for propagation of light cannot be transformed onto inertial frames. Lorentz Transform is not unique. The Lorentz Factor is not unique. The Lorentz Factor that is based on the average forward and return time of a beam of light is incompatible with clocks. The Lorentz Factor, which is equal to Einstein's time dilation factor in Special Relativity, does not belong in the transformation of Maxwell equations for propagation

of light onto an inertial frame. The time dilation factor for motion in the direction of motion of the frame is not equal to Einstein's time dilation factor ɣ on the lateral plane. It is the forcing of time dilation factor ɣ on the Lorentz Transform as the Lorentz Factor that made the Lorentz Transform not unique and the electromagnetic fields on the moving frame dependent on the Lorentz Factor ɣ.

The Lorentz Factor cannot exist since the propagation of light is observer independent. Special Relativity and General Relativity are incompatible with clocks. For motion in one-way time, the Lorentz Transform x′=x/ɣ-vt′ and Special Relativity x′=x/ɣ+vt′ are polar opposites. Special Relativity and General Relativity are based on the average return time of a beam of light, not based on one way time given by clocks.

Einstein's use of his time dilation factor as the transformation factor in the Lorentz Transform made the Lorentz Transform not unique. It also made the relative electromagnetic fields dependent on the Einstein's relative time dilation factor γ, which is also the Lorentz Factor. When the relative electromagnetic fields are dependent of the Lorentz Factor ɣ, relative electromagnetic fields become unbound as the speed of the frame approaches the speed of light c. The relative electromagnetic fields must be bound, and cannot be infinite. Relative electromagnetic fields must be independent of the Lorentz Factor ɣ. The dependence of relative electromagnetic fields is a good indication that Einstein's transformation of Maxwell equations onto an inertial frame is invalid. Propagation of light cannot be transformed onto inertial frames.

Momentum requires mechanical energy. Light has no mechanical energy. There is no mechanical energy in the absence of mass. The basic fact is that light has no energy. If light has energy why would the space be cold. There is no energy without the motion of particles of mass. Light has no energy. Light has no temperature. There is no temperature without the motion of particles of mass. It does not matter how much light is there in space, there will be no temperature without charge particles.

The Cosmic Microwave Background (CMB) temperature in space is an indication that there are charge particles in space. The Cosmic Microwave Background (CMB) is a result of the motion of charged particles in space, not some remnant from a hypothetical bigbang. Space cannot expand or contract [8].

Light has electromagnetic potential energy. Electromagnetic potential energy is not mechanical energy. Potential energy is not energy until it is converted into kinetic energy by charge particles. Frequency has no energy unless frequency is transformed into kinetic energy of particles of mass. The relationship E=hf is meaningless. The Plank

spectrum that led to the relationship E=hf is incorrect; it is cavity dependent [2]. Frequency has no independent existence without wave amplitude and hence the frequency cannot be the sole determination factor of energy, E≠hf. You cannot give light momentum by dividing electromagnetic potential E by the speed of light c, p≠E/c, E≠pc, E≠hf.

Frequencies of electromagnetic waves have no energy. If frequency determines the energy of a wave, then, the amplitude of the wave is determined by the frequency, which is a contradiction since frequency has no existence without amplitude. A chicken lays eggs. Eggs cannot determine the existence of the chicken who laid the eggs. Light cannot exist if light comes in energy quanta E=hf or photons of energy E=hf.

Space is not warpable. If the space is assumed to be warpable, it is the volume that must warp the space, not the mass since it is the volume that occupies the space, not the mass of an object. There is no spacetime in Einstein Relativity. What is there in Einstein Relativity is distance-delay, not space-time. We cannot bring spacetime into the equation.

The mass of an object does not occupy the space. Special Relativity, General Relativity, and Quantum Mechanics have no existence since light is not relative and light does not carry a momentum. Time is not relative. Clocks do not determine time. Clocks are engineered to break down the time that has already been defined into finer intervals. Measuring instrument we engineer cannot determine what is being measured. Clocks cannot determine time; they display time delay. Special Relativity and General Relativity do not deal with time, they deal with the observed time delay of events. Observed time delay of an event is relative. Time itself is not relative. Mass is not relative. Energy cannot come in quanta, E≠hf.

Some of the ills of Physics:
1. The Lorentz Transform physically transforms the propagation of light from its natural frame of propagation in space onto a moving frame. The x′ and t′ in the Lorentz Transform are what exist on the moving frame; they are not the observers' perceptions. The Lorentz Transform has nothing to do with observers.
2. Although every inertial frame is a stationary frame for an object of mass, every inertial frame is not a stationary frame for propagation of light. The only stationary frame for light is its natural frame of propagation in space.

3. Einstein forced a false momentum on light. It has never been proven light has momentum neither theoretically nor experimentally.

4. If light has no momentum, passengers in a closed cabin can determine the speed of the cabin is not a justification for forcing a hypothetical fake momentum on light.

5. The transformation of Maxwell equations for propagation of light using the Lorentz Transform is real. The Lorentz Transform provides what exists on an inertial frame in reality. Transformation of Maxwell Equations onto an inertial frame has nothing to do with observers. What you get at the end is what is on the inertial frame, what is measured on the inertial frame. The x′ and t′ in the Lorentz Transform are relative to the passengers on the inertial frame, not relative to external observers. The x′ and t′ in the Special Relativity are relative to the external observers, not relative to passengers on the moving frame. Special Relativity and the Lorentz Transform are conceptually polar opposites.

6. Special Relativity is not real. Special Relativity is an observer's perception. The Lorentz Transform is real. The Lorentz Transform does not deal with observer's perceptions.

7. In Special Relativity, for the direction of the motion of the frame, $x′=x/γ+vt′$, whereas in the Lorentz Transform, $x′=x/γ-vt′$. The Lorentz Transform and Special Relativity are polar opposites.

8. The relative time and relative distance in the Lorentz Transform are what passengers on a moving frame measure whereas they are what outside observers measure in Special Relativity. Although average forward and return time and distance in the Lorentz Transform are the same in vales with the average forward and return time and distance in Special Relativity, they represent different things physically.

9. The Lorentz Transform is only for the motion in line with the motion of the frame. In Special Relativity, for motion in the lateral frame, **d′=d+v**t′, where **d** is the distance vector in time t. The Lorentz Transform does not apply on the lateral plane.

10. Lorentz Transform does not force a false momentum on light. Special Relativity forces a false momentum on light. That is why what the relative values represent in Special Relativity is different from what the relative values represent in Special Relativity. They have different meanings for relative values.

11. The Lorentz Transform requires both speed and the path of light to be observer independent. Special Relativity requires the speed of light to be observer independent and the path of light to be observer dependent.

12. A train is derailed relative to observers in Special Relativity. A train is not derailed relative to observers in the Lorentz Transform.

13. Special Relativity does not involve space and time. Special Relativity involves the distance x traveled in a time delay t. The distance x traveled is not space. Time delay, t, taken to travel the distance x is not the time. Special Relativity involves distance-delay, not space-time. Space and time cannot be brought to the equation. It is only the distance traveled and the time delay taken to travel the distance that can be brought to the equation. What exists in the Lorentz Transform is distance-delay, not space-time.

14. If time is relative, time cannot be non-directional.

15. The Lorentz Transform and Special Relativity that run on average forward and return time of a beam of light are not compatible with clocks. Clocks do not provide the average forward and return time of a beam of light.

16. Maxwell equations for propagation of light cannot be transformed onto a moving frame. Light is not relative. Light does not propagate relative to observers or moving frames. Light has no momentum.

17. The Lorentz Transform cannot transform Maxwell equations for propagation of light onto inertial frames and hence the Lorentz Transform has no existence.

18. The relative time dilation factor γ on the lateral plane cannot be forced onto the direction of motion of the frame since the time dilation factor in the direction of motion of the frame is not the same as the time dilation factor γ on the lateral plane. The transformation factor or the Lorentz Factor in the Lorentz Transform cannot be equal to the time dilation factor γ in Special Relativity.

19. The Factor γ does not belong in any transform that transforms the Maxwell equations onto a moving frame. The time dilation factor outside the lateral plane varies with the polarity of the speed. It is only the time dilation factor γ on the lateral plane that is independent of the polarity of the speed (±v) of the frame.

20. The average forward and return time dilation factor in the direction of motion of the frame is $γ^2$.

21. The Lorentz Factor must be $γ^2$, not γ.

22. The Lorentz Transform with the Lorentz Factor $γ^2$, the Proper Universal Transform, is frame independent, **t′=t** and **x′=x**.

23. If the time is relative, the relative time for motion in the direction of motion of the frame is different from the relative time for motion against the direction of motion of the frame.

24. If time is relative, relative time for +v is different from relative time for -v except for the lateral plane, where v is the speed of the frame.

25. Galileo-Newton relativity is fundamentally incorrect. Galileo-Newton relativity only appears to be correct for the case where the observer motion is parallel to the motion of the object. Galileo-Newton relativity is meaningless when the observer motion is at an angle to a motion of an object.

26. Observers cannot derail a train. Relative speeds cannot be obtained using Galileo-Newton

relativity.

27. It is the railway track that moves relative to observers, not what is moving on the track.

28. Speed of an object relative to an observer cannot be described by a single velocity since the object has no existence outside of its path relative to observers. The only exception is when the observer motion is parallel to the motion of an object; in this case the relative speed can be described by the simple vector addition of Galileo-Newton relativity since the relative velocity does derail the moving object.

29. Special Relativity falsely assumes light to be relative. An entity that cannot be brought to a stop cannot be relative. Light has no standstill existence and hence cannot be brought to a stop. Light is not relative. A mass cannot have a speed c relative to light since light is not relative. Light cannot behave as golf balls.

30. Light, whose path is constant and can only be altered by the change of medium, cannot be relative, cannot carry momentum, cannot behave as golf balls.

31. It is the path of light that moves against the motion of the observer, not the propagation of light on its path. The speed and the direction of propagation of light on its path are unaltered relative to passengers on the frame and external observers outside the frame.

32. Special Relativity falsely assumes that light has a momentum. Any entity that has momentum must be able to be brought to a halt by applying equal and opposite momentum. Momentum cannot be applied to light. Light cannot be brought to a halt by any means. Light has no momentum. The claim in Special Relativity that light has a momentum is false. Special Relativity as a theory has no existence since light has no momentum.

33. Special Relativity as a theory is based on the false concept that light is relative and Maxwell equations are transferable onto inertial frames. Maxwell equations cannot be transformed onto inertial frames [6].

34. Special Relativity assumes time is relative. If time is relative, time is not unique. If time is relative, time is directional.

35. In Special Relativity, the energy is given by vectors $\mathbf{E}=pc\pm jmc^2$. Energy of a particle cannot be a vector. And hence, Special Relativity cannot hold.

36. In Special Relativity, the energy is a vector pair given by $\mathbf{E}=pc+jmc^2$ and $\mathbf{E}^*=(pc-jmc^2)$. Energy of a particle in Special Relativity is not unique. Energy of a particle must be unique. And hence Special Relativity cannot hold.

37. The momentum $\mathbf{P}$ of a particle in Special Relativity is given by $\mathbf{P}=(p\pm jmc)$, which indicates that there is a real motion and an imaginary motion in Special Relativity. Imaginary momentum in Special Relativity is $\pm j(mc)$. In Special Relativity, a mass has a hypothetical imaginary velocity $\mathbf{c}$ orthogonal to the velocity of

a particle $\mathbf{v}$. Since the momentum $\pm j(mc)$ is imaginary, the energy due to this momentum is imaginary, $E=j(mc^2)$.

38. If Special Relativity claims that the momentum is relative ($p=m'v$) and the energy is relative ($E=m'c^2$), then, they must coexist. However, when the relative momentum $p=m'v$ and relative energy $E=m'c^2$ coexist, they cannot be real, cannot be scalar, and cannot be unique. The energy of a moving particle in Special Relativity is a conjugate vector pair. Energy must be real and hence Special Relativity cannot exist.

39. The relative momentum $p=m'v$ and the relative energy $E=m'c^2$ cannot coexist since energy must be scalar.

40. Modern physics was founded under the assumption that the mass m of an object depends on its speed v. If the mass m of an object depends on its speed, the energy E of a mass m with momentum p is a conjugate pair of vectors given by $\mathbf{E}=pc\pm jmc^2$. Energy of a particle must be real, positive, unique, and hence a mass cannot be relative. The foundation of Special Relativity and hence the foundation of Modern Physics is invalid. The mass of an object must be absolute. Mass of an object is independent of its speed.

41. Although the square energy E^2 of a particle of mass m in Special Relativity is unique, the energy E is not unique. The energy E in Special Relativity is a conjugate pair of vectors ($\mathbf{E},\mathbf{E}^*$), where $\mathbf{E}=pc\pm jmc^2$.

42. When the energy E of a particle is given by the conjugate pair of vectors $\mathbf{E}=pc\pm jmc^2$, the real energy pc of the particle is orthogonal to the so-called rest energy jmc^2. The rest energy in Special Relativity is imaginary, $E=jmc^2$. The rest energy $E=jmc^2$ has no real existence.

43. Special Relativity makes the false assumption that time and mass are relative. Time is a definition. Time cannot be relative. If mass is relative, the energy cannot be a unique scalar quantity. Time and mass must be absolute. It is the distance traveled and time delay taken to travel the distance that are relative, not the space and time.

44. Special Relativity makes the false assumption that the light is relative. Special Relativity has given a light false momentum. Light has no momentum. An entity that has no standstill existence cannot have momentum. Any entity with momentum must be able to be brought to a stand still by applying equal and opposite momentum. Light cannot be brought to a stop since light has no standstill existence.

45. Light cannot be forced to behave as golf balls. Light has no momentum, no energy, no entropy, no temperature. What light has is potential energy. Potential energy is not energy until it is converted to energy by charge particles.

46. Light cannot consist of particles or photons of energy $E=hf$. If light consists of particles or

photons of energy E=hf, light cannot exist since frequency has no existence without amplitude.

47. Energy cannot come in quanta, E≠hf. A quantum without a header is meaningless. Any entity with a belonging cannot come in quanta that has no means of carrying the belonging information. Quanta in Modern Physics that have no headers cannot exist in reality.

48. A vertically directed beam of light from the bottom of a moving train does not travel vertically relative to a passenger inside the train since light is not relative and does not behave as golf balls. Special Relativity is fundamentally invalid.

49. The energy E of a particle of mass m and relative momentum p in Modern Physics given by the relationship $E^2=(pc)^2+(mc^2)^2$ is invalid.

50. In Special Relativity, the energy of a particle of mass m and relative momentum p is given by $E^2=(pc)^2+(mc^2)^2$, which is also equivalent to $E^2=[p^2+(mc)^2]c^2$, $E^2=(PP^*)c^2$ where the actual momentum **P** of the particle in Special Relativity is given by **P**=(p±jmc), which is not unique and not real. The momentum of a particle must be unique. Special Relativity cannot exist. Contrary to the claim in Special Relativity, the momentum of a particle has nothing to do with the speed of light c.

51. In reality, if the momentum of a particle is p, the energy E must be given by $E=p^2/2m$, where p=mv. The mass of an object is independent of its speed, m'=m.

52. In Special Relativity, the momentum p=m'v, where m'=γm, and γ=1/sqrt($1-v^2/c^2$). Observers cannot bend light and hence γ≠1/sqrt($1-v^2/c^2$). The energy of a mass m has nothing to do with the speed of a hypothetical beam of light c. The energy E cannot be given by the product pc, E≠pc. Velocity of a mass must be unique. A mass m cannot have two velocities **v** and **c** and hence E=pc is meaningless. The speed v that generates momentum p cannot be different from the speed c that affects the momentum p generating E=pc. The E=pc is only for v=c. E=pc cannot exist if v≠c. If the energy of a particle of mass in Special Relativity is given by E=pc for v≠c, Special Relativity cannot exist. E=pc for v≠c is meaningless.

53. In Special Relativity, if the energy of a mass m moving at velocity **v** with relative momentum **p** is falsely given by E=pc, it indicates that a particle of mass m is associated with two velocities, the velocity **v** associated with momentum of the particle **p** and the velocity of a hypothetical beam of light **c**. The momentum **p** is real and the relative momentum (m**c**) relative to a hypothetical beam of light is imaginary, and hence the actual momentum **P** in Special Relativity is given by **P**=**p**±j(m**c**). In other words, in Special Relativity, an object of mass has the velocity **V**=γ**v**±j**c**. The velocity of a particle of mass m must be unique and hence Special Relativity cannot exist.

54. If the momentum $P^2=p^2+(mc)^2$ as it is in Special Relativity, then the actual momentum is given by the conjugate vector pair **P**=p±j(mc), and the actual velocity is given by the conjugate vector pair **V**=γ**v**±j**c**, where, $P^2=$**PP***, which indicates that an observer in Special Relativity can derail a train simply by observing; this is not possible. Observers cannot derail a train. Cars do not end up in ditches relative to runners. Special Relativity cannot exist. It is the whole path that moves relative to observer motion, not what is on the path.

55. The energy E of a particle of mass m and momentum p has nothing to do with the speed of light. Speed of a mass is not limited by the speed of light. The energy of a mass m with momentum p=mv is given by $E=p^2/2m$, E≠pc, m'≠ɣm, m'=m. Mass of an object is unaltered with motion. Mass is not relative. Light is not relative. Time and mass of an object are absolute.

56. Contrary to Einstein's claim, a vertically fired burst of light from the bottom of a horizontally moving train does not take an angular path relative to an observer outside the train. Observers cannot bend light. Light does not behave as golf balls. Special Relativity that is based on the false claim that the light is relative and behaves as golf balls is false and Special Relativity cannot exist.

57. Contrary to Einstein's claim, a horizontally fired burst of light inside a stationary cabin on a gravitational object does not take a downward parabolic path; it travels horizontally unaltered. Einstein's equivalence principle is false. Gravity and acceleration are not the same since there is no acceleration without motion. General Relativity based on the equivalence principle cannot exist.

58. Massless are not affected by gravity. Gravity has no direct effect on light. Light is not affected by gravity in the absence of a medium. Propagation of light is not affected by gravity in a vacuum. Gravity cannot bend light in a vacuum. Observers cannot bend light. The path of light and the speed on its path are unaltered relative to passengers inside a moving cabin as well as relative to observers outside the moving cabin.

59. A burst of light travels on its path unaltered while the path shifts against the motion of the

observer. A vertical burst in a train travels vertically while the burst is shifting on an angular path against the motion of the train relative to a passenger inside the train since light has no momentum. Relative to an observer outside the train, a vertical light burst travels vertically since light has no momentum. The path and the speed of propagation of light on its path are unaltered relative to observers inside and outside the train.

60. Light cannot bend relative to observers.
61. When the Lorentz Factor is γ^2, the relative distance axis **x′=x** and the relative time axis **t′=t** in the Lorentz Transform. When the Lorentz Factor is γ^2, relative axes are universal, frame independent, clocks and meter sticks are universal.

XIII. ANY THEORY BASED ON THE LORENTZ FACTOR IS A SELF CONTRADICTION. LORENTZ TRANSFORM, SPECIAL RELATIVITY, AND GENERAL RELATIVITY ARE HYPOCRITICAL
Lemma:
The Lorentz Transform and Special Relativity are polar opposites. They are not the same for one-way motion. They are the same only for the average forward and return motion. For both Special Relativity and the Lorentz Transform, the one-way relative time for the forward motion is different from the one-way relative time for the backward motion.

For a stationary frame R(x,t) and a moving frame R′(x′,t′,v) at speed v, the Lorentz Transform is given by,

$$x′=\gamma(x-vt) \tag{13.1}$$
$$t′=\gamma(t-vx/c^2) \tag{13.2}$$
$$(x-vt)≥0 \tag{13.3}$$
$$(t-vx/c^2)≥0 \tag{13.4}$$
$$v≥0 \tag{13.5}$$

where, x/t=c, x′/t′=c, the Lorentz Factor ɣ is given by,
$$\gamma=1/(1-v^2/c^2)^{1/2} \tag{13.6}$$
$$\gamma=c/[(c-v)(c+v)]^{1/2} \tag{13.7}$$

When the time delay t=0, the distance traveled x=0 and hence x′=0 and t′=0 when t=0. In the Lorentz Transform, the t is not a time at a coordinate in space. A coordinate in space has no time associated with it. The x in the Lorentz Transform is the distance traveled in time delay t. The distance x traveled in a given time delay t is independent of coordinates in space.

The Lorentz Transform provides the relative distance x′ traveled in a moving frame in a given relative time delay t′. We can obtain the relative distance axis x′ in R′(x′,t′,v) and the relative time axis t′ in R′(x′,t′,v) from the Lorentz Transform.

Although in Special Relativity, t′=ɣt and d′=ɣd for motion on the lateral plane, these relationships do not hold in the direction of motion of the frame both in Special Relativity and in the Lorentz Transform, x′≠ɣx,

t′≠ɣt. In the Lorentz Transform x′=x/ɣ-vt′ and and in Special Relativity x′=x/ɣ+vt′ in the direction of motion of the frame. Special Relativity and the Lorentz Transform are polar opposites. It is only the average values of the forward and return motion that are the same, not what they represent.

What relative distance and relative time represent in the Lorentz Transform is different from what they represent in Special Relativity; they are polar opposites. In Special Relativity, relative time and relative distance are relative to external observers, whereas in the Lorentz Transform, the relative time and relative distance are actual measurements on the frame by the passengers on the frame.

Lemma:
Every inertial frame is not a stationary frame for propagation of light.

a). Time-Axis And Distance-Axis in a Stationary Frame R(x,t):
In a stationary frame R(x,t), the time axis **t** is the axis where the distance-axis is null or **x=0**. Similarly, the distance axis **x** is the axis where the time axis **t** is null or **t=0**. For an object O moving at constant speed u, the speed in the stationary frame R(x,t) is given by,
$$x/t=u \tag{13.1.1}$$
Here, x is the distance traveled in time delay t. The t is the time delay taken to travel the distance x. When x=0, t=0. The x is not a coordinate in space. The distance x traveled is independent of space coordinates. The (x,t) is the state space, not coordinates in spacetime.

Consider, we have object O traveling at speed u in the stationary frame. Now we want to find out what happens to the object O as measured in the moving frame R′(x′,t′,v). In order to do that, we have to find the relative time delay axis **t′** and the relative distance axis **x′** in the moving frame R′(x′,t′,v). It is the relative time delay axis **t′** that tells us what happens (dilate, contract, or remain unaltered) to the relative time on the moving frame. It is the relative axis **t′** that tells us what happens to clocks. It is the relative distance axis **x′** that tells us what happens (dilate, contract, or remain unaltered) to the relative distance on the moving frame. It is the relative axis **x′** that tells us what happens to meter sticks.

b). Relative Time-Axis And Relative Distance-Axis in the Moving Frame:
The Lorentz Transform gives the distance traveled and time delay taken for the object O in the moving frame R′(x′,t′,v). Unlike Special Relativity where only the speed of light is frame independent and the path of light is frame dependent, the Lorentz Transform requires both speed and the path of light to be observer independent. The Lorentz Transform does not assume light to carry a momentum. For the Lorentz Transform, the motion must be in the direction

of the motion of the frame. So we can use the relative distance and relative time of the object given by the Lorentz Transform to find the relative time axis **t′** and the relative distance axis **x′**.

The relative distance axis **x′** in the moving frame is given by the Lorentz Transform when the relative time axis **t′** is null or **t′=0**. In the Lorentz Transform, the state of a moving object O on the moving frame is given by,

$$x'=\gamma(x-vt) \tag{13.2.1}$$
$$t'=\gamma(t-vx/c^2) \tag{13.2.2}$$

When, t′=0, from equation (13.2.2), we have,

$$t=vx/c^2 \tag{13.2.3}$$

Substituting for t in equation (13.2.1), we have,

$$x'=\gamma(1-v^2/c^2)x \tag{13.2.4}$$
$$x'=x/\gamma \tag{13.2.5}$$

So, the relative distance axis **x′** in the moving frame is **x′=x/ɣ**. In fact x′=x/ɣ is the Proper Space or Proper Distance in the moving frame R′(x′,t′,v).

Similarly, the relative time axis **t′** on the moving frame is given by the Lorentz Transform when **x′=0**. When, **x′=0**, from equation (13.2.1), we have,

$$x=vt \tag{13.2.6}$$

Substituting for x in equation (13.2.2), we have,

$$t'=\gamma(1-v^2/c^2)t \tag{13.2.7}$$
$$t'=t/\gamma \tag{13.2.8}$$

So, the relative time axis t′ in the moving frame is **t′=t/ɣ**.

Now, we have the relative distance axis **x′** and the relative time axis **t′** in the moving frame R′(x′,t′,v),

$$\mathbf{x'=x/\gamma} \tag{13.2.9}$$
$$\mathbf{t'=t/\gamma} \tag{13.2.10}$$

Lemma:

The relative axes on the moving frame R′(x′,t′,v) are **x′=x/ɣ** and **t′=t/ɣ**.

If we have a beam of light traveling at speed c in the stationary frame R(x,t) at speed x/t=c, we have,

$$x'/t'=c \tag{13.2.11}$$

The speed of light is constant c in the moving frame R′(x′,t′,v).

On the moving frame R′(x′,t′,v) in the Lorentz Transform, the relative distance axis or the proper distance is **x′=x/ɣ** while the relative time axis or the proper time is **t′=t/ɣ**, where ɣ=1/sqrt(1-v²/c²). One-way relative distance and one-way relative time for motion in the direction of motion of the frame is different from the one-way relative distance and one-way relative time for the motion against the direction of motion of the frame.

In the Lorentz Transform, one-way relative distance and relative time for the forward motion in the direction of the moving frame contract while the one-way relative distance and the one-way relative time for the backward motion in the direction against the direction of the moving frame dilate. Both the speed of light and the path of light are frame independent in the Lorentz Transform.

In Special Relativity it is the complete opposite. Due to the false assumption that light is relative and behaves as golf balls in Special Relativity, one-way relative distance and one-way relative time for the forward motion in the direction of the moving frame dilate while the one-way relative distance and one-way relative time for the backward motion against the motion of the frame contract.

The Lorentz Transform and the Special Relativity are polar opposites for one-way motion.

c). **The Average Relative Time and Average Relative Distance in the Lorentz Transform.**

For the forward path, the Lorentz Transform is given by,

$$x'=\gamma(x-vt) \tag{13.3.1}$$
$$t'=\gamma(t-vx/c^2) \tag{13.3.2}$$

Substituting for t in equation (13.3.1) from (13.3.2),

$$x'=\gamma x-(vt'+(v^2/c^2)x) \tag{13.3.3}$$
$$x'=\gamma(1-v^2/c^2)x-vt' \tag{13.3.4}$$
$$x'=x/\gamma-vt' \tag{13.3.5}$$

The two equations in the Lorentz Transform are equivalent to x′=x/ɣ-vt′. The Lorentz Transform is an actual physical transform. This is polar opposite to the Special Relativity x′=x/ɣ+vt′ for motion in line with the motion of the frame under the false assumption light has momentum and the length contracts with motion. Einstein bent nature to make his theory fit. Since x′=ct′ and x=ct, the forward relative time t_f' and the forward relative distance x_f' are given by,

$$t_f'=[1/\gamma(1+v/c)]t \tag{13.3.6}$$
$$x_f'=[1/\gamma(1+v/c)]x \tag{13.3.7}$$

For the backward path, relative time is t_b' and the forward relative distance x_b' are given by,

$$t_b'=[1/\gamma(1-v/c)]t \tag{13.3.8}$$
$$x_b'=[1/\gamma(1-v/c)]x \tag{13.3.9}$$

The average forward and backward relative time t′(ave) is given by,

$$t'(ave)=(t_f'+t_b')/2 \tag{13.3.10}$$
$$x'(ave)=(x_f'+x_b')/2 \tag{13.3.11}$$
$$t'(ave)=\gamma t(ave) \tag{13.3.12}$$
$$x'(ave)=\gamma x(ave) \tag{13.3.13}$$

In the Lorentz Transform, the average forward and return relative time t′(ave) and the average forward and return relative distance x′(ave) dilate. Average relative distance and average time dilation is not present for one way-motion in real-time. Average relative distance and relative time dilation is present only in our notebooks. Forward and reverse motion cannot take place simultaneously and hence average forward and return dilation is not real. What is real is what is happening in one-way motion. For one-way forward motion in the direction of motion of the frame, relative distance and relative time contracts in the Lorentz Transform, t′=t/ɣ, x′=x/ɣ.

The x′ and t′ in the Lorentz Transform are what a passenger on the moving frame measures, not an external observer's perceptions. Light is not assumed to have momentum in the Lorentz Transform. As a result, a light burst lags behind relative to a passenger on the moving frame while the direction of propagation of the wave in the burst is unaltered. The x/ɣ represents the length contraction with the motion in the Lorentz Transform. The length contraction is a result of forcing time dilation factor ɣ from Special

Relativity onto the Lorentz Transform where it does not belong. There will not be a length contraction if the proper Lorentz Factor that makes the Lorentz Transform unique had been chosen. The proper Lorentz Factor transforms the Maxwell equations onto a moving frame uniquely.

Light is not assumed to behave as golf balls in the Lorentz Transform. The minus sign on the right of the equation $x'=x/ɣ-vt'$ is indicative of that. If light is assumed to behave as golf balls as in the Special Relativity, the sign on the right would have been a plus sign, $x'=x/ɣ+vt'$, for moton on the forward path in the direction of the motion of the frame. Both the path and speed of light are observer independent in the Lorentz Transform.

In Special Relativity, the relative distance x' and the relative time t' are what external observers measure under the assumption that light behaves as golf balls, which is a direct contradiction to the Lorentz Transform where the relative distance x' and the relative time t' are what passengers on the moving frame measure. The Lorentz Transform is the actual transformation of state, it is not a coordinate transformation; it is not an observer's perception. The Lorentz Transform transforms Maxwell equations onto a moving frame physically. The relative distance x' and the relative time t' in the Lorentz Transform are what is on the moving frame; there is no observer involvement here. Transformation of Maxwell equations onto a moving frame does not require observers.

In Special Relativity, when the direction of motion is on the lateral plane orthogonal to the direction of motion of the frame, the relative distance is given by,
$$y'=y+vt' \qquad (13.3.14)$$
where, y is the distance vector traveled in time delay t on the lateral plane. The Lorentz Transform does not apply on the lateral plane.

Special Relativity has $y'=ɣy$ and $t'=ɣt$ when the direction of motion is on the lateral plane orthogonal to the direction of motion of the frame. However, the relationships $y'=ɣy$ and $t'=ɣt$ do not hold when the motion is not on the lateral plane. The relationships $y'=ɣy$ and $t'=ɣt$ do not hold when the motion is in line with the motion of the frame, $x'≠ɣx$. When the motion is in line with the moving frame, the relativity factor depends on the polarity of the speed of the frame. The relativity factor in the forward direction along the direction of motion of the frame is different from the relativity factor in the backward direction against the motion of the frame. The Lorentz Transform does not have the relationships $y'=ɣy$ and $t'=ɣt$ since the Lorentz Transform is not applicable on the lateral plane. The Lorentz Transform is only applicable for

motion in line with the path of the frame, in the direction ±x.

Special Relativity forces a false momentum on light for light to behave as golf balls. Special Relativity also assumes for no special reason that the length contracts when the motion is in line with the motion of the frame. As a result, in Special Relativity, when the direction of a light beam is in line with the direction motion of the frame, the relative distance x' and relative time t' in Special Relativity for the forward motion are given by,
$$x'=x/ɣ+vt' \qquad (13.3.15)$$
Since $x'=ct'$ and $x=ct$,
$$t'=[1/ɣ(1-v/c)]t \qquad (13.3.16)$$
In Special Relativity, for the one-way backward motion against the motion of the frame,
$$x'=x/ɣ-vt' \qquad (13.3.17)$$
$$t'=[1/ɣ(1+v/c)]t \qquad (13.3.18)$$
For the forward path, relative time t_f' is related to t by,
$$t_f'=[1/ɣ(1-v/c)]t \qquad (13.3.19)$$
$$x_f'=[1/ɣ(1-v/c)]x \qquad (13.3.20)$$
For the backward path, relative time is t_b' is related to t by,
$$t_b'=[1/ɣ(1+v/c)]t \qquad (13.3.21)$$
$$x_f'=[1/ɣ(1+v/c)]x \qquad (13.3.22)$$
The average forward and backward relative time $t'(ave)$ is given by,
$$t'(ave)=(t_f'+t_b')/2 \qquad (13.3.23)$$
$$x'(ave)=(x_f'+x_b')/2 \qquad (13.3.24)$$
$$t'(ave)=ɣt(ave) \qquad (13.3.25)$$
$$x'(ave)=ɣx(ave) \qquad (13.3.26)$$
In Special Relativity, the average forward and return relative distance $x'(ave)$ and the average forward and return relative time $t'(ave)$ dilate with motion for motion along and against the direction of motion of the frame, $x'(ave)=ɣx(ave)$ and $t'(ave)=ɣt(ave)$. However, for motion on the lateral plane orthogonal to the direction of motion of the frame in Special Relativity, $y'=ɣy$ and $t'=ɣt$.

The Lorentz Transform applies only for motion in line with the direction of motion of the frame. In the Lorentz Transform also the average forward and return relative distance $x'(ave)$ and the average forward and return relative time $t'(ave)$ dilate, $x'(ave)=ɣx(ave)$, $t'(ave)=ɣt(ave)$. In the Lorentz Transform, although the average forward and return distance and relative time dilates with motion, for one-way motion along the direction of motion of the frame, the relative distance x' and relative time t' contract in the Lorentz Transform, $x'=x/ɣ$ and $t'=t/ɣ$.

Average values are calculated, not measured. Average value exists on notebooks. Average length dilation cannot be observed. Average length dilation cannot be measured. What we observe is what happens in one-way motion. There is no average unless a return motion takes place and values are calculated. The motion is always one-way, and hence for one-way motion, what we measure is a contraction in the Lorentz Transform.

The relative time axis and relative distance axis contract in the Lorentz Transform, $x'=x/ɣ$ and $t'=t/ɣ$

due to the forcing of Einstein time dilation factor ɣ from Special Relativity as the Lorentz Factor in the Lorentz Transform. Einstein's relativity factor ɣ does not belong in the Lorentz Transform. With the Proper Lorentz Factor, the Lorentz Transform is unique and the relative distance axis **x′** and the relative time axis **t′** will be frame independent, **x′=x** and **t′=t**. The Proper Universal Transformation Factor is γ^2.

The Proper Universal Transform that transforms Maxwell equations onto an inertial frame is given by,

$$x'=\gamma^2(x-vt) \tag{13.3.21}$$
$$t'=\gamma^2(t-vx/c^2) \tag{13.3.22}$$

The Proper Universal Transform is unique. As in the case of the Lorentz Transform, the relative distance x′ and the relative time t′ are what passengers on the moving frame measure; they are real, not the observer's perceptions. The relative axes **x′** and **t′** are absolute, frame independent, **x′=x** and **t′=t**.

"The clocks and measuring sticks are universal in the Proper Universal Transform."

As we can see, for one-way motion, the Lorentz Transform and Special Relativity are polar opposites. For the forward motion, the Lorentz Transform x′=x/ɣ-vt′ has a minus sign, while Special Relativity x′=x/ɣ+vt′ has plus sign. That is why Special Relativity (x′=x/ɣ+vt′) and the Lorentz Transform (x′=x/ɣ-vt′) are polar opposites. The x/ɣ in the Lorentz Transform (x′=x/ɣ-vt′) represents the length contraction, a consequence of the bad choice of Einstein's relative time dilation factor from Special Relativity as the Lorentz Factor. Although on the surface it appears that the Lorentz Transform transforms the Maxwell equations onto an inertial frame, the Lorentz Transform cannot transform the Maxwell equations onto inertial frames [6].

In Special Relativity, relative time and relative distance dilates for motion on the lateral plane, t′=ɣt and y′=ɣy. For motion in line with the motion of the frame in Special Relativity, one-way relative time along the direction of the frame is different from the one-way relative time against the direction of motion of the frame. However, In Special Relativity for motion in line with the motion of the frame, the average forward and return relative time and the average forward and return relative distance dilate, t′(ave)=ɣt(ave) and x′(ave)=ɣx(ave). For one-way motion in line with the frame of motion in Special Relativity, t′≠ɣt and x′≠ɣx.

The average forward and return values of the Lorentz Transform and Special Relativity are the same. However, what average values represent in the Lorentz Transform are completely opposite of what the average values of the Special Relativity represent; their meanings are different. The values are polar opposites for one-way motion. Special Relativity cannot model real-time systems since real-time on-line systems do not run on average forward and return time of a beam of light. In Special Relativity t′≠ɣt and x′≠ɣx for one-way motion. Relative time is directional.

d). **The Lorentz Factor is Not Unique:**

If we replace the Lorentz Factor ɣ by γ^n, where n is any real value, then, the Lorentz Transform is given by,

$$x'=\gamma^n(x-vt) \tag{13.4.1}$$
$$t'=\gamma^n(t-vx/c^2) \tag{13.4.2}$$
$$(x-vt)\geq 0 \tag{13.4.3}$$
$$(t-vx/c^2)\geq 0 \tag{13.4.4}$$
$$v\geq 0 \tag{13.4.5}$$

where, the Lorentz Factor γ^n is given by,

$$\gamma^n=1/1-v^2/c^2)^{n/2} \tag{13.4.6}$$

We have the Lorentz Transform when n=1. The general Lorentz Transform for any n can also transform the Maxwell equations for propagation of light onto an inertial frame of speed v while maintaining the form of the Maxwell equations. As a result, the General Lorentz Transform is also a valid transform. Since n can take any real value, there are infinitely many Lorentz Transforms that can transform the Maxwell equations onto an inertial frame. Lorentz Transform is not unique [6].

With the Lorentz Factor γ^n, we have the time axis **t′** and the space axis **x′** in the moving frame R′(x′,t′,v) given by,

$$\mathbf{x'=x/}\gamma^n \tag{13.4.7}$$
$$\mathbf{t'=t/}\gamma^n \tag{13.4.8}$$

Irrespective of what n is, we now have,

$$x'/t'=x/t \tag{13.4.9}$$

The speed of an object is independent of γ^n.
If x/t=c, for any n, we have,

$$x'/t'=c \tag{13.4.10}$$

Even though the speed of light is independent of the Lorentz Factor, the relative electromagnetic fields are dependent on the Lorentz Factor. As a result, the relative electromagnetic fields in the Lorentz Transform are unbounded as the frame reaches the speed of light. Relative electromagnetic fields cannot be unbounded.

The Lorentz Transform works with Lorentz Factor γ^n for any n,

$$x'=\gamma^n(x-vt) \tag{13.4.11}$$
$$t'=\gamma^n t-vx/c^2) \tag{13.4.12}$$

where n is any integer or any real number. When n=1, we have the Lorentz Transform. That means there are infinite Lorentz transforms. The Lorentz Transform is not unique. The Lorentz Transform cannot exist.

e). **The Lorentz Transform Has No Existence:**

There is another problem with the Lorentz Factor. This problem is with regards to its derivation. The derivation of the Lorentz Factor assumes that the speed of light is frame dependent. The problem in the Lorentz factor γ is clear from the Lorentz Factor itself. The Lorentz Factor is given by,

$$\gamma = 1/(1-v^2/c^2)^{1/2} \qquad (13.5.1)$$
$$\gamma = c/[(c-v)(c+v)]^{1/2} \qquad (13.5.2)$$

The Lorentz factor is based on (c+v) and (c-v), which are the relative light speeds in both the forward direction and the backward direction. The (c-v) indicates the forward direction while (c+v) indicates the relative speed in the backward direction.This shows that the Lorentz Factor is not applicable for one directional time. It only applies for the average return time.

The Lorentz Factor inherently contains the relative speeds of light (c+v) and (c-v) that depend on the speed v of the frame of reference even though the speed of light cannot be frame dependent and light cannot propagate at speeds (c-v) and (c+v). There are no Maxwell equations for frame dependent speeds speeds (c-v) and (c+v). If you have a factor that depends on (c-v) and (c+v) in your equations or theories, those equations or theories are fundamentally invalid. Any theory containing the Lorentz Factor is hypothetical and has no existence.

Maxwell equations are for electromagnetic waves propagating in space. Maxwell equations do not apply relative to moving frames. The Lorentz Transform, Special Relativity, and General Relativity use the Lorentz factor that is based on hypothetical non-existent relative speeds (c-v) and (c+v). The use of the Lorentz Factor that contains the frame dependent light speeds (c+v) and (c-v) to claim that the light propagates at speed c relative to any observer moving at speed v is self-contradictory. You cannot use the frame dependent speeds (c+v) and (c-v) to claim that the speed of light is frame independent c.

In addition, when the frame dependent speeds of light (c+v) and (c-v) are used, you are considering the propagation in forward direction and in reverse direction simultaneously. Light cannot propagate both forward and backward simultaneously. When speeds (c+v) and (c-v) appear in a parameter or in a theory, it is an indication you are considering the average forward and return time of a beam of light. In the Lorentz Factor, what is used is the average forward and return time of a beam of light, not the one way time given by clocks. Lorentz Factor does not apply for time given by clocks since clocks are not engineered to give average return time of a beam of light. Besides, the average return time can only be available off-line, not on-line. Average forward and return time has to be calculated off-line, manually.

The Lorentz Factor is for the average return time of a beam of light and hence the Lorentz Transform, Special Relativity, and General Relativity that make use of the Lorentz Factor apply only for the average return time of a beam of light. They do not apply for time given by clocks since none of the clocks gives the average return time of a beam of light. The motion dynamics do not run on the average return time of a beam of light. Average return time of a beam of light is only available off-line and hence Lorentz Transform, Special Relativity, and General Relativity do not apply for real time systems.

The propagation of light is independent of the frame of reference. The speed of light is independent of the frame of reference. The path of light is independent of the frame of reference. You cannot use the forward relative light speed (c-v) and the backward relative light speed (c+v) to claim that the propagation of light is independent of frame of reference; it is self-contradictory, hypocritical. The Lorentz Transform, Special Relativity, and General Relativity that are based on the Lorentz Factor are self-contradictions; they have no real existence.

In addition, the Lorentz Factor is not unique. The γ^n for any n is also a valid Lorentz Factor that can transform the Maxwell equations for propagation of light onto an inertial frame [6]. If the Maxwell equations are transformable onto inertial frames, that transformation must be unique. If the Maxwell equations are transformable onto a moving frame the speeds (c-v) and (c+v) should not be contained in the transform. If the Maxwell equations are transformable onto an inertial frame that transform must run on one-way time, not on average return time of a beam of light. The Lorentz Transform, Special Relativity, and General Relativity cannot exist.

The Lorentz Transform without the Lorentz Factor is useless. The Lorentz Transform without the Lorentz Factor cannot transform Maxwell equations for propagation of light onto an inertial frame. The Lorentz Transform with the Lorentz Factor can transform the Maxwell equations onto an inertial frame, but the transform is not unique. In addition, the Lorentz Transform with the Lorentz Factor is hypocritical. Lorentz Transform is not unique. The Lorentz Transform is self-contradictory. Any theory with (c+v) and (c-v) is fundamentally invalid since the speed of light cannot be frame dependent and hence (c+v) and (c-v) cannot exist. The speed and the path of light are frame independent. The velocity of light is frame independent.

The speed of light is determined by the medium, not by the observers. The claim in Special Relativity that the speed of the propagation of light is constant c relative to any observer contradicts the presence of the Lorentz Factor in it with the light speeds (c+v) and (c-v). Two frame dependent speeds, (c+v) and (c-v) cannot be present in the Lorentz Factor and hence in the Lorentz Transform, Special Relativity, and General Relativity unless the time is given by the average return time of a beam of light, which is not given by clocks, and the speed of light is frame dependent, which is false.

Special Relativity, General Relativity, and the Lorentz Transform that are based on the Lorentz Factor are hypocritical; they do not apply for natural systems. The presence of the Lorentz Factor in a derivation is a clear indication that the derivation is

fundamentally false. You cannot use the frame dependent speeds (c-v) and (c+v) to claim that the speed of light is frame independent. You cannot use the Lorentz Factor to claim that the speed of light is independent of the frame of reference.

Lemma:
Einstein's time dilation factor does not belong in the Lorentz Transform as the transformation factor.

XIV. **Proper Universal Relativity, Proper Universal Transform**

"Space and Time are Absolute, Frame Independent."

Lemma:
The relative distance axis **x′** and the relative time axis **t′** are absolute, frame independent, **x′=x** and **t′=t**.

The distance and time axes are observer independent. The dependence of the distance and time axes on the speed of the frame is a result of the bad choice of the Lorentz Factor in the Lorentz Transform. With the proper choice of the Lorentz Factor, the relative distance and relative time axes will be absolute.

Einstein's time dilation factor ɣ does not belong in the Lorentz Transform. When the Lorentz Factor is γ^2 in the Lorentz Transform, which is the Proper Universal Transform, the relative distance axis x′ and the relative time axis **t′** are absolute, frame independent. Both speed and the path of light are constants in the Lorentz Transform. Light has no momentum in the Lorentz Transform. Special Relativity based on the forcing of a false momentum on light is a contradiction to the Lorentz Transform and the nature of light. Special Relativity is also a contradiction to the Maxwell equations for propagation of light.

a). **Proper Universal Transform for Transforming Maxwell Equations onto a Moving Frame**
The frame-dependent relative distance and relative time are a result of invalid choice of the Lorentz Factor in the Lorentz Transform. Einstein's relative distance and relative time dilation factor derived for the lateral plane in Special Relativity does not belong in the Lorentz Transform. Einstein's false assumption that light has momentum and behaves as golf balls does not hold in the Lorentz Transform. Einstein's derailing of light relative to observers does not belong in the Lorentz Transform. The Lorentz Transform requires both speed and the path of light to be observer independent.

Lorentz Transform transforms a frame where light naturally propagates onto a moving frame. For a burst of light, the x′ and t′ on a moving frame are what a passenger on the moving frame measures. Einstein's x′ and t′ in Special Relativity are what an external observer measures. Special Relativity and Lorentz Transform are polar opposites for one-way motion. They are the same only in value for average forward and reverse motion; what the average values represent in the Lorentz Transform is different from what they represent in Special Relativity.

Lemma:
Einstein's relative time dilation factor ɣ has no place in the Lorentz Transform.

Proper Universal Transform (PUT):
The Proper Universal Transform for transforming Maxwell Equations onto a moving frame is given by,

$$x'=\eta(x-vt) \qquad (14.1.1)$$
$$t'=\eta(t-vx/c^2) \qquad (14.1.2)$$

where, Proper Universal Transformation Factor $\eta=\gamma^2$. The axes **x′** and **t′** on the moving frame are unique and frame independent, **x′=x** and **t′=t**.

The Proper Universal Transform given by x′=η(x-vt) and t′=η(t-vx/c²) is equivalent to x′=x-vt′. In Special Relativity under the assumption that light has momentum we have x′=x+vt′. As we can see, the Proper Universal Transform and Special Relativity are polar opposite. If the false assumption that light is relative and behaves as golf balls is abandoned from Special Relativity, or Special Relativity without the assumption light has a momentum is equivalent to the Lorentz Transform. The relative distance and relative time axes are absolute in the Proper Universal Transform.

In the Proper Universal Transform, the relative distance axis **x′** is when the relative time axis **t′=0** and the relative time axis **t′** is when the relative distance axis **x′**=0. As a result, we have,

$$x'=x \qquad (14.1.3)$$
$$t'=t \qquad (14.1.4)$$

The relative distance axis **x′** and the relative time axis **t′** are frame independent or absolute. The meter sticks and clocks are absolute under the Proper Universal Transform. Meter sticks do not dilate/contract in the Proper Universal Relativity. Clocks do not tick faster/slower in the Proper Universal Relativity. Meter sticks and clocks are universal in the Proper Universal Relativity.

Lemma:
If the Lorentz Factor is chosen to be γ^2, the relative distance axis **x′** and the relative time axis **t′** are absolute in the Lorentz Transform, they are frame independent.

b). **The Comparison of the Lorentz Transform, Special Relativity, and the Proper Universal Transform:**

The Lorentz Transform: x′=x/ɣ-vt′ is relative to a passenger on the frame. A light burst is released by an observer outside the moving frame in its natural stationary frame, in space, and hence the x and t are outside the moving frame. Every inertial frame is not a stationary frame for propagation of light since light has no momentum. Unlike Special Relativity, the Lorentz Transform does not force a false momentum on light.

The x′ and t′ are relative to passengers on the moving frame,

$$x'=\gamma(x-vt) \qquad (14.2.1)$$
$$t'=\gamma(t-vx/c^2) \qquad (14.2.2)$$

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

These two equations are equivalent to $x'=x/\gamma-vt'$.

If a ball is thrown at speed u by an external observer, for an observer in the moving frame its speed is u′. The relative speed $u'=x'/t'$ is related to $u=x/t$ by,

$$u'=(u-v)/(1-uv/c^2) \qquad (14.2.3)$$

As $u\rightarrow c$, $u'\rightarrow c$ for both +v and -v.

The relative axes are given by,

$$x'=x/\gamma \qquad (14.2.4)$$
$$t'=t/\gamma \qquad (14.2.5)$$

The distance axis and the time axis contract with motion in the direction of motion of the frame in the Lorentz Transform with Lorentz Factor γ as the Transformation Factor. Both the speed and the path of light are unaltered with motion. Light has no momentum and light is not assumed to behave as golf balls in the Lorentz Transform.

Special Relativity: Special Relativity forces light to be relative and behave as golf balls. The path of light is altered relative to observers in Special Relativity even though the path of light is a constant that can only be altered by the change of the medium. Special Relativity also conveniently assumes that the length contracts in the direction of motion by the factor 1/γ. Einstein was ready to bend nature any way he wanted in order to make his theory fit.

In Special Relativity, for any direction θ off the line of motion of the frame d′=d+vt′, d′=η(θ)d, t′=η(θ)t. For the lateral plane y′=γy or z′=γz. For motion in line with the direction of motion of the frame along the x-axis, x′=x/γ+vt′, x′(ave)=γx(ave), t′(ave)=γt(ave), x′≠γx, t′≠γt.

The x′ and t′ in Special Relativity is relative to an external observer under the false assumption that light has a momentum. It is relative to observers outside the moving frame. Unlike in the Lorentz Transform, in Special Relativity, a light burst is released by a passenger on the moving frame. Since Special Relativity forces false momentum on light, the moving frame is a false stationary frame for the light burst, even though no inertial frame can be a stationary frame for light. In Special Relativity, the x′ and t′ are relative to observers outside the moving frame.

$$x'=x/\gamma+vt' \qquad (14.2.6)$$
$$t'=[1/\gamma(1-v/c)]t \qquad (14.2.7)$$

If $x'/t'=u'$ and $x/t=u$, we have,

$$u'=\gamma(1-v/c)u+v \qquad (14.2.8)$$

If u=c, u′≠c for both +v and -v. In Special Relativity (without Lorentz Transform) as the speed u of a moving entity approaches the speed c, the relative speed u′ does not approach the speed c. However, for the average forward and return relative distance x′(ave) and average forward and return relative time t′(ave) in Special Relativity, we have,

$$x'(ave)=\gamma x(ave) \qquad (14.2.9)$$
$$t'(ave)=\gamma t(ave) \qquad (14.2.10)$$

If $x'/t'=u'$ and $x/t=u$, we have,

$$u'(ave)=u(ave) \qquad (14.2.11)$$

If u(ave)=c, u′(ave)=c in Special Relativity without the Lorentz Transform.

The relative distance x′ and relative time t′ in Special Relativity are not the same as the relative distance x′ and relative time t′ in the Lorentz Transform; they do not represent the same entities.

Special Relativity and the Lorentz Transform are not the same. Special Relativity and the Lorentz Transform are the same only for the average forward and reverse motion. For one-way motion, Special Relativity and the Lorentz Transform are different, they are polar opposites. Theory based on average forward and reverse motion is useless for the real-time systems that have one-way motion. Real-time systems do not run on average forward and backward time of a beam of light.

Special Relativity is not the same as the Lorentz Transform. The relative speed u′ for the Lorentz Transform is not the same as the relative speed u′ from the Special Relativity. Although in the Lorentz Transform the relative speed u′ approaches the speed of light c as u approaches the speed of light c, for one-way motion in Special Relativity, the relative speed u′ does not approach the speed of light c as u approaches the speed of light c. In the Special Relativity, it is the forward and return average relative speed u′(ave) that approaches the speed of light c as the forward and return average speed u(ave) approaches c.

Special Relativity and the Lorentz Transform are not consistent; they do not have common starting assumptions or a common starting point. Special Relativity and the Lorentz Transform are polar opposites. Special Relativity and the Lorentz Transform have two completely different origins; they are not the same. The Lorentz Transform is not an observer perception; it is a real bricks and mortar transformation. Special Relativity is an observer's perception. They happen to have the same forward and return average values although what they represent are different.

Proper Universal Relativity: x′=x-vt′, is relative to a passenger on the moving frame. A light burst is released outside the moving frame in its natural stationary frame, in space, and hence x and t are outside the moving frame. Every inertial frame is not a stationary frame for propagation of light. The x′ and t′ are relative to passengers on the moving frame,

$$x'=\gamma^2(x-vt) \qquad (14.2.11)$$
$$t'=\gamma^2(t-vx/c^2) \qquad (14.2.12)$$

If a ball is thrown at speed u by an external observer outside the moving frame, for a passenger on the moving frame, its speed is u′. The relative speed

u′=x′/t′ is related to u=x/t by,

$$u'=(u-v)/(1-uv/c^2) \qquad (14.2.13)$$

As u→c, u′→c for both +v and -v.

The relative axes are given by,

$$\mathbf{x'=x} \qquad (14.2.14)$$
$$\mathbf{t'=t} \qquad (14.2.15)$$

The relative distance axis and relative time axis are unaltered with motion. Relative axes are absolute, universal. Clocks and meter sticks are universal. Both the speed and the path of light remain unaltered relative to observers.

"Proper Universal Relativity is the Relativity based on the Proper Universal Transform. Proper Universal Transform is the Lorentz Transform with the Proper Universal Transformation Factor γ^2."

The relative distance x′ and relative time t′ in Proper Universal Relativity are actual measured values by a passenger on a moving frame. A passenger on a moving train can determine the speed of the frame using a burst of light since the motion of a light burst is not a part of the frame; it is independent of the frame since light burst has no momentum. A passenger on a moving frame can determine the speed of the frame since every inertial frame is not a stationary frame for motion of light bursts since light has no momentum. Light propagates in space. Light does not propagate relative to inertial frames. A burst of light released on a moving frame lags behind relative to a passenger on a moving frame.

c). **Lorentz Transform for Propagation of Light Does Not Exist; Maxwell Equations are Not Transformable on to an Inertial Frame:**
Lemma:
    Maxwell equations for propagation of light are absolute; they are independent of the frame of reference.

The Appearance can be deceiving! The appearance that it is possible to transform Maxwell equations onto an inertial frame, while the form of the Maxwell equations are unaltered, is a mathematical oversight. When the necessary conditions that emerge from the transformation are taken into account, it is clear that Maxwell equations are not transformable onto inertial frames. Light is not relative. A transform for transforming Maxwell equations onto inertial frames does not exist.
    Light does not have momentum. Light does not behave as golf balls. Special Relativity, General Relativity and the Lorentz Transform have no existence. Propagation of light is not relative. Motion of light bursts is relative; they lag behind relative to passengers on a moving frame.
    A light burst is stationary only for an observer on the frame where light naturally propagates, in space, not on inertial frames. Relative to a passenger on a moving frame, a light burst shifts against the motion of the passenger while the speed and the path of propagation of light within the burst remains unaltered.

Both the speed and path of light are independent of observers irrespective whether the observers are inside or outside a moving frame. No Special Relativity is required [4].

XV. **PROBLEMS WITH EINSTEIN RELATIVITIES**

If the time is relative, relative time is directional. The relative time depends on the angle between the direction of motion and the direction of motion of the frame. In Einstein's light beam on a moving train thought experiment, instead of a vertical beam of light, consider a beam of light at an angle to the direction of the train. Assume a passenger in a train released a beam of light at an angle θ to the direction of motion of the train. If the light burst takes time delay t to travel the distance d, then, the relative time t′ and the relative distance d′ are given by t′=η(θ)t. and d′=η(θ)d, t′≠γt and d′≠γd. The dilation factor η(θ) at an angle θ in Special Relativity depends on the angle θ and the polarity of the frame speed v, ±v.

Theorem:
    The time dilation factor in Special Relativity is directional. For a burst of light at an angle θ to the direction of motion of the train, the relative time t′ and relative distance d′ are given by, t′=η(θ)t d′=η(θ)d, where d is the distance traveled at time delay t. The time dilation factor η(θ) is given by,

$$\eta(\theta)=[1/(1-v^2/c^2)][(v/c)\cos(\theta)+((1-(v^2/c^2)\sin^2\theta)^{1/2})]$$

where, θ is the angle between the direction of the light burst and the direction of motion of the frame. The time dilation factor in Special Relativity is directional.

The proof is straightforward.

Corollary:
    Since η(θ) depends on the angle θ and the polarity of the speed of the frame ±v, η(θ) is directional.

For θ=90°, η(θ)=γ, where, $\gamma=1/(1-v^2/c^2)^{1/2}$.
For θ=0°, η(0°)=γ²[1+v/c].
For θ=180°, η(180°)=γ²[1-v/c].
The dilation factor η(0°)≠η(180°).

Corollary:
    The average forward and reverse dilation factor η_{ave}(0°,180°) for motion in line with the motion of the frame is given by
$$\eta_{ave}(0°,180°)=\gamma^2.$$

Although η(0°) and η(180°) are dependent on the polarity of the frame speed ±v, the average forward

and return dilation factor $\eta_{ave}(0^o,180^o)$ is independent of the frame speed polarity $\pm v$.

The claim in Special Relativity that the relative time $t'=\gamma t$ and the distance $d'=\gamma d$ are invalid unless the motion is orthogonal to the direction of the frame, $y'=\gamma y$, $d'\neq\gamma d$. The relative time $t'=\gamma t$ and the distance $y'=\gamma y$ do not apply in the direction of motion of the frame, $x'\neq\gamma x$, $t'\neq\gamma t$; they do not hold in the Lorentz Transform where the motion is in line with the motion of the frame, $x'\neq\gamma x$.

It is the average relative time $t'(ave)$ and the average distance $x'(ave)$ that are given by $t'(ave)=\gamma t(ave)$ and $x'(ave)=\gamma x(ave)$ in the Special Relativity for motion in line with the motion of the frame under the assumption that distance contracts in the direction of motion. The average relative time $t'(ave)=\gamma t(ave)$ and the average relative distance $x'(ave)=\gamma x(ave)$ do not apply for one-directional motion in real-time.

If the length is not assumed to contract in the direction of motion, the average relative distance and average relative time are given by $t'(ave)=\gamma^2 t(ave)$ and $x'(ave)=\gamma^2 x(ave)$ in the Special Relativity for motion in line with the motion of the frame. In fact, in Special Relativity, the relative time $t'=\gamma t$ and the relative distance $d'=\gamma d$ applies for the lateral plane only. For any other angle θ, what applies in Special Relativity is $t'=\eta(\theta)t$ and $d'=\eta(\theta)d$, where $\eta(\theta)\neq\gamma$.

In the Lorentz Transform, the instantaneous change of length for one-directional motion is given by $x'=\gamma x-vt'$ or $x'=\gamma(x-vt)$, not by $x'=\gamma x$. In the Lorentz Transform, the instantaneous change of time for one directional motion is given by $t'=\gamma(t-vx/c^2)$, not by $t'=\gamma t$. The claim in the Lorentz Transform that the time dilates is invalid, $t'\neq\gamma t$. The claim in the Lorentz Transform that distance contracts with motion in line with the motion of the frame is correct, but the representation of length contraction by $x'=\gamma x$ is wrong; $x'=\gamma x$ represents a dilation, not a contraction, $x'\neq\gamma x$. If $t'=\gamma t$ is a dilation, $x'=\gamma x$ cannot be a contraction. If distance contracts, x' must be given by $x'=x/\gamma$. It is the average forward and return time that dilates both in Special Relativity and in the Lorentz Transform, $x'(ave)=\gamma x(ave)$, $t'(ave)=\gamma t(ave)$.

What happens on average is not what happens for one-directional motion. What contract in the Lorentz Transform is relative time and relative distance axes, **$x'=x/\gamma$**, **$t'=t/\gamma$**; it is these axes contraction that led to the claims that clocks run slow and meter sticks become shorter in a moving frame. This is a result of using Einstein's Relativity Factor γ as the Transformation Factor in the Lorentz Transform where it does not belong.

In the Lorentz Transform, the distance contracts along the direction of motion of the frame (which is the opposite of what is happening in the Special Relativity) and the contraction factor along the direction of motion is not given by γ. In the Lorentz Transform, the distance dilates for motion against the direction of motion of the frame (which is the opposite of what is happening in Special Relativity) and the dilation factor against the direction of motion is not given by γ. In the Lorentz Transform, the contraction factor in the direction of motion is different from the dilation factor against the motion of the frame. In Special Relativity, the dilation factor in the direction of motion is different from the contraction factor against the motion of the frame. The Lorentz Transform and Special Relativity are polar opposites.

The Lorentz Transform and Special Relativity are polar opposites since Special Relativity forces a false momentum on light while the Lorentz Transform does not assume light to carry momentum. The Lorentz Transform and Special Relativity are not the same since both the speed and the path of light are frame independent in the Lorentz Transform whereas only the speed of light is frame independent and the path of light is frame dependent in Special Relativity. The Lorentz Transform and Special Relativity are the same on average forward and return motion. The Lorentz Transform and Special Relativity are NOT the same for one-way motion. What x' and t' represent in the Lorentz Transform are not what they represent in Special Relativity. They represent different things conceptually.

Equation $x'=\gamma x$ represents a length dilation, not contraction, $x'\neq\gamma x$. For one-way instantaneous time t and distance x, the relationships $t'=\gamma t$ and $x'=\gamma x$ do not hold. The relationships $t'=\gamma t$ and $x'=\gamma x$ cannot be derived from the Lorentz Transform. If the length of a moving object is represented by $x'=\gamma x$, what would the length of a neutrino be? The length of a neutrino would be nearly infinite since neutrinos are considered to be traveling at a speed close to the speed of light c. If time dilates and length contracts, the speed of light on a moving frame cannot be a constant.

- Both relative distance and relative time contracts for motion in line with the motion of the frame, for forward motion, in the Lorentz Transform.
- Both relative distance and relative time dilates for motion in line with the motion of the frame, for forward motion, in Special Relativity.

- Both relative distance and relative time dilates for motion against the motion of the frame, for backward motion, in the Lorentz Transform.
- Both relative distance and relative time contracts for motion against the motion of the frame, for backward motion, in Special Relativity.
- The average forward and return relative time and average forward and return distance dilate in both Special Relativity and the Lorentz Transform.
- Average motion cannot describe one-way real-time motion. Special Relativity cannot be applied for one-way real-time systems. Real-time systems do not run on average forward and return time of a beam of light.

It is true that every inertial frame is a stationary frame for objects of mass or for golf balls. However, every inertial frame is not a stationary frame for light. Light does not propagate relative to inertial frames. Light cannot be given momentum by proclamation. Entity that has no standstill existence cannot have momentum. The transformation of Maxwell equations onto a moving frame is not an observer's perception; it is actual brick and mortar transformation of light from the frame where light naturally propagates onto an inertial frame. The transformed values are actual values measured on the inertial frame. The x' and t' are the actual values measured by the passengers on the frame; this is the complete opposite of Special Relativity. In Special Relativity, x' and t' are external observer perceptions.

In the Lorentz Transform, x is the distance light travels in time delay t in the frame where light naturally propagates; it is not an inertial frame. The intention of the Lorentz Transform is to transform the light from the frame where light naturally propagates onto an inertial frame. The x' and t' are not observer perceptions, they are what they are in the inertial frame. In the Lorentz Transform, the x and t exist only in the frame where the light naturally propagates, a frame in space. This is different from the motion of a mass where x and t can be relative to any inertial frame. Any inertial frame is not a stationary frame for light. That is the reason why Special Relativity and the Lorentz Transform are polar opposites.

In the direction of motion of the frame, Special Relativity is $x'=x/ɣ+vt'$ where as the Lorentz Transform is $x'=x/ɣ-vt'$; they are polar opposites. The Lorentz Transform has no existence for motion out of line of the motion of the frame. Special Relativity for motion out line of motion of the frame is given by $d'=d+vt'$. Special Relativity is not Lorentz transform compliant; they are completely opposite of each other. In Special Relativity, for motion orthogonal to the motion of the frame, $y'=y+vt'$. It is only for the motion orthogonal to the motion of the frame that the average forward and return distance and average forward and return time are given by x'(ave)=ɣx(ave) and t'(ave)=ɣt(ave) in Special Relativity. In Special Relativity, for any other angle θ, x'(ave)=η(θ)x(ave), t'(ave)=η(θ)t(ave).

Lorentz Transform provides the state of an object on a moving frame. To determine what happens to the distance and time with motion on the moving frame, we have to obtain the time axis t' and the space axis x' on the moving frame. The time axis t' is given when $x'=0$. The distance axis x' is given when $t'=0$. In the Lorentz Transform, when $x'=0$, we have the time axis $t'=t/ɣ$ and when $t'=0$, we have the distance axis $x'=x/ɣ$. The relationship $t'=t/ɣ$ represents a relative time axis contraction in the Lorentz Transform. The relationship $x'=x/ɣ$ represents a relative distance axis contraction in the Lorentz Transform.

Distance traveled in a given time delay is not space. Time delay taken to travel the distance is not the time itself. The distance-delay is not space-time. It is not possible to bring space-time into the equation. What Special Relativity and the Lorentz Transform deal with is distance-delay, not space-time.

Special Relativity claims time dilates and length contracts with motion. If time dilates and length contracts, the speed of light cannot be a constant. For the speed of light to be a constant in Special Relativity, both time and length must contract, both time and length must dilate, or both time and length must remain unaffected with motion. What is contained in the Lorentz Transform and Special Relativity is a time axis contraction and length axis contraction, $t'=t/ɣ$, $t'≠ɣt$, and $x'=x/ɣ$, $x'≠ɣx$.

Special Relativity is built on the Lorentz Factor. The Lorentz Factor is built on the terms (c-v) and (c+v). The terms (c+v) and (c-v) represent the frame-dependent speeds of light; they indicate that the speed of light is dependent on the frame speed. The derivation of the Lorentz Factor is based on the assumption that the speed of light is frame dependent. The Lorentz Factor that has been derived under the assumption that the speed of light is dependent on the frame of reference cannot be used to prove that the speed of light is independent of the frame of reference; it is self contradictory. Any theory that claims the speed of light is independent of the frame of reference cannot contain the terms (c-v) and (c+v). The Lorentz Transform and Special Relativity claims that speed of light is independent of the frame of reference, but they contain the terms (c-v) and (c+v); which is self contradictory and deceitful.

The term (c-v) indicates a beam of light traveling at speed (c-v) in the forward direction toward the direction of the motion of the frame. The term (c+v) indicates a beam of light traveling in the reverse direction against the direction of motion of the frame of reference. A single beam cannot travel both forward direction and reverse direction at the same time. Both terms (c-v) and (c+v) cannot appear in any real time system. One-directional motion dynamics cannot be described by a system of equations that contains both (c-v) and (c+v). Motion dynamics cannot be described by the Lorentz Transform with a Lorentz Factor containing terms (c-v) and (c+v).

The derivation of the Lorentz factor has the assumption that the speed of light is frame dependent. The Lorentz Factor is a result of defining the time as the average return time (both forward and backward

time) of a beam of light under frame-dependent speed. A theory based on the average return time of a beam of light cannot be used to describe the motion of objects or the propagation of light. The massless are not relative. Light is not relative. The Lorentz Transform, Special Relativity, and General Relativity are false in their foundation.

Time does not exist. Time is a definition. We define the length of time as a day or a year. Time is not relative. The mass of an object is not relative. Propagation of light is not relative. Special Relativity does not deal with time itself. Special Relativity deals with the observed time delay of an event. The observed time delay of an event depends on the position of the observer relative to the event. If the observer is moving towards the event, the observed time delay of the event decreases. If the observer is moving away from the event, the time delay of the observed event will increase. If the observer is far away from the event, the observed time delay of the event will be larger. If the observer is closer to the event, the observed time delay will be smaller.

Observed time delay of an event says nothing about the time itself. Observed time delay of an event is relative. The time itself is not relative. Special Relativity and General Relativity deal with the observed time delay of events. Special Relativity and general Relativity do not deal with the time itself. We cannot bring space and time into the equation.

Time delay of an event is not the time itself. The x in Special Relativity are not coordinates in space. The coordinates in space do not have associated time. It is the distance traveled that has an associated time. The distance traveled in a given time delay is not coordinate dependent. Time delay to travel a distance is independent of the instant of time. The x and t in Special Relativity are independent of spacetime coordinates.

What Special Relativity deals with is distance-delay, not space-time. The relative distance x′ and the relative time t′ are independent of the frame of reference, x′=x and t′=t if the Lorentz Factor is $γ^2$. Einstein forced the time dilation factor γ for the lateral plane in y-direction on the motion of the frame in x-direction where it does not belong. It is this forcing of Einstein's time dilation factor γ that made the Lorentz Transform frame dependent. The Lorentz Transform is only for x-direction. The γ is only for (y,z) plane. It is this forcing of Einstein's time dilation factor γ on the Lorentz Transform that made the relative distance and relative time in the Lorentz Transform frame dependent. It is this invalid forcing of Einstein's time dilation factor γ on the Lorentz Transform that made the relative electromagnetic fields in the Lorentz Transform dependent on the Lorentz Factor.

If Einstein had allowed the lateral dimensions to contract, y′=y/γ and z′=z/γ and use the Lorentz Transform with Lorentz factor $γ^2$ so that x′=$γ^2$(x-vt) and t′=$γ^2$(t-vx/c^2), the time would have been observer independent or absolute in Special Relativity; the relative distance axis **x′** and the relative time axis **t′** would have been frame independent, **x′=x** and **t′=t**.

However, if light is not forced upon a false momentum, we do not have to make the lateral dimension to contract. Since light has no momentum, the path of a vertical burst of light is unaltered relative to external observers. Both the path of light and speed of light on its path must be constant relative to moving frames. Special Relativity purposely altered the path of light by forcing a false momentum on light. The Lorentz Transform is in compliance with the fact that the path of light and speed of light are constants and must be observer independent.

Proper Universal Relativity with the Proper Universal Transform, which is the Lorentz Transform with the Lorentz factor $γ^2$, will maintain the speed and the path of a light burst constant relative to moving frame without dilation or contraction. The relative axes in the Proper Universal Relativity are **x′=x** and **t′=t**, observer independent.

Time cannot be relative. Directional motion cannot generate non-directional relative time. If time is relative, time will be directional; we cannot avoid that. We cannot force the time dilation factor γ that is only valid on the lateral plane (y,z) onto the other directions. If time is relative, other directions have their own time dilation factors. The time dilation factor for motion off the lateral plane is dependent on the polarity of the speed of the frame ±v.

The Lorentz Transform requires the direction of motion to be in line with the motion of the frame. The Lorentz Transform requires both speed and the path of light to be frame independent, which is a contradiction to the Special Relativity since Special Relativity requires the path of light to be frame dependent.

Time cannot be relative. If time is relative, time cannot be non-directional. For an entity moving at an angle θ to the direction of motion of the frame, the time dilation factor η(θ) depends on the angle θ. Einstein obtained the time dilation factor γ=η(90°) for θ=90° for the lateral plane (y,z,θ=±90°) orthogonal to the direction of motion of the frame (orthogonal to the x-axis, θ=0° or θ=180°) and tried to force it in the direction of motion of the frame where θ=0° and θ=180°. Time dilation factor η(θ) for any θ depends on the polarity of the speed of the frame ±v except when θ=±90°. It is only when θ=±90°, the time dilation factor is given by γ is independent of the polarity of the speed of the frame ±v.

It is only the time dilation factor γ on the lateral plane that does not depend on the polarity of the speed of the frame ±v. The time dilation factor for one direction cannot be forced in another direction since they are different and depend on the polarity of ±v. Time dilation factor depends on the angle of motion, the angle between the direction of motion of an entity and the direction of motion of the frame. There is no one time dilation factor that fits for all the directions.

For all the directions, it is the average forward and return relative time that is related by t′(average)=η(θ)t(average), not the instantaneous one directional time, t′≠ɣt, where θ is the angle between the direction of motion of the entity and the direction of motion of the frame. For all the directions, it is the average forward and return relative distance and average relative time that is related by d′(ave)=η(θ)d(ave), t′(average)=η(θ)t(ave) or d′=ɣ$_{ave}$(θ)d, t′=ɣ$_{ave}$(θ)t, not the instantaneous one directional relative distance and relative time, d′≠ɣd, t′≠ɣt, where η$_{ave}$(θ) is the average forward and reverse dilation factor at any angle θ.

The time dilation factor in the direction of motion of the frame has nothing to do with ɣ, which is the dilation factor for the lateral plane in Special Relativity. Time dilation factor against the direction of motion of the frame has nothing to do with ɣ. When the motion is in line with the motion of the frame, on-way dilation factor is not ɣ. The forward dilation factor is different from the reverse dilation factor at any angle of motion.

When the motion is in line with the motion of the frame, the average forward and return time dilation factors is given by ɣ^2. To make the average time dilation factor to be ɣ for motions in line with the motion of the frame, Einstein forced a length contraction, which is also associated with time contraction. Einstein forced lateral plane time dilation factor ɣ where it does not belong. The lateral plane time dilation factor ɣ does not belong in the Lorentz Transform, where the motion is in line with the motion of the frame.

Real-time systems do not run on average time. Real time one-way motion cannot have average time contraction and distance contraction. Average exists on paper. We have to calculate the average. We cannot measure the average. Average distance contraction does not apply to real time systems. Clocks do not run on average forward and return time of a beam of light. The average is only available with a time delay that is required in obtaining the average. Clocks are incompatible with Special Relativity. Real-time dynamic systems cannot be modeled by Special Relativity and General Relativity that run on average forward and return time of a beam of light.

Gravity is not equivalent to acceleration. There is no acceleration without the change of position and hence an object of mass m at rest on earth has no acceleration, a=0. Newton's law m=F/a does not apply for a=0 when an object is at standstill on earth, where F is the gravitational force on mass m. Newton's law m=F/a applies only for moving objects at an acceleration. An apple on a tree has a force, but no acceleration, a=0. A falling apple has an acceleration. Einstein's Principle of Equivalence does not hold. General Relativity is invalid.

The mass of an object cannot warp space even if space is warpable. If space is warpable, it is the volume of an object that warps the space. Space is not warpable. An object of mass cannot interact with space; that is why perpetual motion is possible, Propagation of light does not interact with space, that is why propagation is possible. Motion of an object does not interact with space, that is why the motion in space without any hindrance possible. Gravity cannot bend light in a vacuum since the path light is a constant that can only be altered by the change of medium density. If mass warps space, orbiting systems will collapse. Special Relativity and General Relativity are a result of twisting nature to fit a theory; not a scientific effort to discover the working of nature. Special Relativity, General Relativity, and Quantum Mechanics, Modern Physics in general, are a hindrance to any Scientific progress. Today, Modern Physics is practiced and promoted as a religious ideology.

The claim that space is expanding based on the redshift of a star in a galaxy is not science. Taking a clock on a plane around the world to claim that time is relative is not science. Taking a clock onto a mountain to claim time depends on gravity is not science. Attributing the snow on an off-tuned old television to a big bang is not science. The claim that cosmic background radiation is remnant from a hypothetical big bang is not science. The claim that a particle can be in multiple places simultaneously is nonsense. E=hf is nonsense. Frequency has no existence without amplitude. Frequency has no energy. The claim that particles are waves and waves are particles is meaningless. Momentum cannot come in quanta. Spins cannot come in quanta. Vectors cannot come in quanta. Energy cannot come in quanta. Any entity with belonging cannot come in quanta without an identification header.

Physics has turned into a voodoo-practice. The genesis of voodoo-physics is Einstein's false claim that light has a momentum and behaves as golf balls. Light cannot behave as golf balls since the path of light is a constant that can only be altered by the change of medium. Propagation of light is not relative. It is the motion of light bursts that is relative. The mathematical blunder is in Einstein's transformation of Maxwell equations onto an inertial frame [6]. Einstein's Relativity Factor ɣ does not belong in the Lorentz Transform; it does not belong anywhere but the lateral plane.

XVI. **NO SPECIAL RELATIVITY IS REQUIRED**

As we have already seen, Galileo Relativity is incorrect. The relative speed of an object cannot be obtained by simple vector addition since it results in bending the path of an object or wave. The path of an object cannot be bent relative to observers. A train traveling on its track at any speed or direction must remain on its track relative to observers irrespective of the speed and the direction of the observers. The Galileo-Newton Relativity is incorrect since it does not take into account the fact that the path of a moving

entity cannot be altered relative to observers.

However, Galileo-Newton Relativity appears to be correct when the path of the motion of an entity is parallel to the observer motion. When the motion of an entity is parallel to the motion of an observer, the moving entity remains on its path independent of the speed of the observer and as a result the simple vector addition provides the relative speed. Although the Galileo-Newton Relativity provides the correct relative speed when the motion of an entity is parallel to the observer motion, the fundamental explanation in Galileo-Newton Relativity is incorrect. The speed of a moving object on its path cannot change relative to observers. The speed of a moving object on its path is observer independent. It is the path as a whole that moves relative to the motion of an observer, not the moving object on its path.

Relative to an observer, the observer gets the impression that the path of a moving object moves against the observer motion carrying whatever that is traveling on its path since the distance to the path varies with the observer motion. We cannot combine the motion of the path relative to an observer with the motion of an object on its path since such combining leads to bending of the path or derailing a train. A train does not derail relative to observers. Light cannot bend relative to observers. So, relative motion cannot be expressed in a single speed unless the path of a moving object or wave is parallel to the path of the observer.

Relative speed of a wave or an object must be expressed in two velocities. If an entity is moving at velocity **u** and observer is moving at speed **v**, then, we can use the Galileo-Newton Relativity and say that the entity is traveling relative to observer at speed u-v only if vectors **u** and **v** are parallel or the paths are parallel. If the velocities u and v are not parallel or the paths are oblique, then we cannot use the Galileo-Newton Relativity. We cannot say the relative velocity **w** is **u-v** since there is no path in the direction of **w**. The object cannot be off its path relative to observers. We can only say that the object is traveling at velocity **u** unaltered on its path relative to the observer while the path is traveling at velocity -**v** relative to the observer. You cannot add two vectors **u** and -**v** since there is no path in that direction for the object to travel relative to the observer.

The motion of an object of mass on its path is independent of the motion of an observer. Observer cannot change reality. If a train is traveling at 100km/hour on its track, it does not matter the direction or the speed of an observer, **v**, relative the observer, train is still on its track and the speed of the train on its track is unaltered at 100km/hour while the observer has the impression of train tack moving at velocity -**v** relative to the observer. It is just that the train-track moves relative to observers against the motion of the observer while whatever is moving on the track remains unaltered. No Special Relativity is required. Einstein Relativity is unnecessary. Galileo-Newton Relativity must be amended [8].

Lemma:

It is the path that moves against the motion of an observer while whatever is moving on the path remains unaltered relative to the observer. What is traveling on its path has no freedom to change the path relative to observers [4]. Observers cannot derail a train.

The relativity of the motion of light bursts and the relativity of the motion of objects are completely opposite. Every moving frame is not a stationary frame for light whereas every moving frame is a stationary frame for objects of mass. A vertical burst of light, the massless, that is released from a moving frame travels vertically relative to passengers on the frame as well as relative to observers outside. However, the vertical light burst shifts against the motion of the frame relative to passengers on the frame. A light burst shifts on a reverse angular path relative to passengers on the frame while light is propagating vertically within the burst. Relative to an external observer, the light burst takes a straight vertical path, travels unaltered. The distance the light burst travels when the burst hits the ceiling is the same relative to passengers and relative to external observers. The time taken for the light burst to hit the ceiling is the same relative to the passengers on the frame and relative to any external observer on any moving frame [4].

The propagation of light is observer independent. The speed and the path of light are observer independent, universal. Clocks and measuring sticks are universal. Relative axes are universal, frame independent. There is no distance contraction or dilation. There is no time dilation or contraction. Coordinates in space do not have associated time. Only a distance traveled has an associated time. Distance travel is independent of the coordinates in space and time. Time delay taken to travel a distance is independent of the coordinates in space and time. Delay-distance is not space-time. It is only the distance-delay we can bring into the equation. We cannot bring space-time into the equation.

We cannot even know if space-time is relative since there is no frame of reference independent of space-time to observe it. Propagation of light is not relative. Maxwell equations are not transformable into inertial frames. Maxwell equations are absolute. The speed and path of light are observer independent. Theories that are based on average forward and return time cannot model real-time systems. Special Relativity and General Relativity are not only theoretically false, they cannot even model the real-time systems since they are based on the average forward and return time of a beam of light.

Average length contraction exists in notebooks, not in reality. Average has to be calculated, not measured. Average for forward and return motion is not available on-line for measurement; it has to be calculated off-line. Average time dilation factor cannot exist beyond notebooks. Average length contraction cannot exist beyond notebooks. Average has no

existence beyond notebooks. Special Relativity, General Relativity, and Quantum Mechanics are bad nightmares that we cannot get away from for more than a century just like religions. As long as there are people making a living out of them, the fallacy will linger on well guarded.

XVII. **RELATIVITY IS NOT REALITY; REALITY IS OBSERVER INDEPENDENT**

Every inertial frame is not a stationary frame for propagation of light. Light does not propagate relative to inertial frames. A burst of light in a train moving at speed v lags behind at speed -v relative to passengers on the moving train while the path and the speed of propagation of light on its path remain unaltered relative to both passengers inside and observers outside the train. Observers cannot bend light.

Every inertial frame is a stationary frame for objects of mass. The path of a moving object of mass in a train moving at speed v advances at speed +v relative to an observer outside the train while the path of motion and the speed on its path remain unaltered relative to both passengers inside as well as observers outside. Observers cannot derail a train.

A mathematical oversight in the transformation of Maxwell equations onto an inertial frame led to the false belief that light propagates relative to moving frames. Maxwell equations cannot be transformed onto inertial frames [6]. Motion and propagation are not the same and cannot be unified. Motion is not Propagation. Propagation is not Motion.

Relativity is only for observers' eyes and ears only. Relativity cannot change reality. Time is not relative. Mass is not relative. Time delay of an event is not the time itself. Time delay of an event is independent of the spacetime coordinates. The distance to an event is not the space itself. The distance to an event is independent of the spacetime coordinates. The distance-delay is not space-time. Fundamental properties of matter are unaffected by the motion. The speed of an object of mass is unaffected by the speed of light. Space is unaffected by the objects of mass. Time is unaffected by relative speed. Measuring sticks are unaffected by relative speed. Relativity cannot define reality. Relativity is for observers' eyes and ears only. Speed of light is speed of light; there is nothing more to it. Speed of light cannot limit the speed of objects of mass. Speed of light is not the speed limit of the universe.

XVIII **PASSENGERS IN A CLOSED CABIN CAN DETERMINE ITS SPEED**

Passengers in a closed cabin can determine the speed of the cabin using a burst of light. This fact was obvious in the Michelson-Morley experiment but they failed to notice it. Michelson and Morley had no understanding of what they were doing. If you do not know what gold is and you are looking for coal in a gold mine, you find neither the coal nor gold. That is exactly what happened with Michelson and Morley. If you do not know the theory behind an experiment, it

does not matter how good experiment builders you are, your interpretation of observation is not going to represent reality.

Michalson and Morely were looking for coal in a gold mine. Michelson-Morley's expected theoretical phase shift, which has been repeated in every physics textbook since then, is wrong. Nobody dared to question the validity of Michelson-Morley calculations since they have won the prize for that. Winning the prize is not a seal of approval that what they have done is correct. An interferometer does not provide an interference pattern for phase shift between two separate locations or two separate orientations. It only provides the interference pattern for the phase shift between two arms. Visually, the interference pattern does not vary with the polarity of the phase difference. Their expected phase shift is wrong. Their observation interpretations were wrong. They missed the obvious in their observations because they did not know the obvious.

Unlike the blunder in Einstein's transformation of Maxwell equations onto an inertial frame using the Lorentz Transform where the blunder is titanic and camouflage, the blunder in the Michelson-Morley experiment is in the open for anyone to see, not hidden, not camouflaged, but it is so subtle that one may easily miss it. Textbook writers have paid no attention to derivation except copying the derivation verbatim.

Whether the phase shift between the arms is $+\theta$ or $-\theta$, the interference pattern is the same; there is no visual difference. That is exactly what is observed. The observed interference pattern at any location gives the speed of the frame in the direction of the source-arm of the Michelson-Morley Experiment; they fail to notice that. There was an interference pattern in the Michelson-Morley experiment. They were looking for the wrong thing using the wrong calculation. The Michelson-Morley experiment cannot provide an interference pattern for the phase shift between two locations or two separate orientations. At any location or orientation, it only provides the interference pattern for the phase shift between the two arms; it has no location information or orientation information. If the phase shift between arms in one orientation is $+\theta$ and the phase shift between two arms in another orientation is $-\theta$, the interference patterns in two orientations will be the same visually, no visual difference. You cannot expect an interference pattern of 2θ phase difference when the apparatus is changed from one orientation to the other; that is silly. An interferometer does not have a memory. Passengers on an inertial frame can determine the speed of the frame using the Michelson-Morley experiment.

We do not have to force the light to comply with pre-historic Galileo's claim. Galileo never claimed that it is not possible for passengers in a closed cabin to determine the speed of the cabin using a burst of light. Galileo's claim exclusively refers to the motion mechanics of objects of mass; it does not refer to the propagation mechanics of electromagnetic waves. Motion mechanics of objects of mass is not the same

as the propagation mechanics of electromagnetic waves. Motion mechanics of objects of mass cannot be unified with the propagation mechanics of the massless electromagnetic waves. We cannot force momentum on massless. The forcing of a fake momentum on light is the biggest mistake in modern physics. Einstein forced a fake momentum on light where it does not belong.

XIX. **CONCLUSIONS**
- Time taken (time delay) to travel a distance is independent of time itself.
- The distance traveled is independent of space.
- The general relativity factor for any angle θ is $\eta(\theta)=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}]$,
    where, $\gamma=1/(1-v^2/c^2)^{1/2}$.
- $\gamma=\eta(90^o)$.
- Relativity Factor γ is only for θ=90°. Einstein's relativity factor γ cannot be ubiquitous.
- Time is Not Determined by Propagation of Light.
- Distance traveled and time taken to travel the distance are independent of the spacetime coordinates.
- Space and time cannot be brought into the equation. Distance-delay is not space-time.
- Time taken by an object or a wave to travel a distance on its fixed path is observer independent.
- A train does not derail relative to observers.
- The motion of an entity A can take place relative to the motion of an entity B if and only if the entity B is stoppable.
- Nothing can travel relative to light since light has no standstill existence.
- The mass of an object cannot depend on its speed.
- Light has no momentum and cannot be forced to carry a momentum since light is not stoppable.
- A beam of light cannot be a frame of reference since light has no standstill existence.
- Spacetime is not relative. There is no spacetime independent frame to observe the spacetime.
- Space and time are independent. Distance traveled and time delay taken to travel the distance are mutually dependent.
- Mass cannot warp space even if the space is warpable. It is the volume that warps space if space is warpable.
- No entity can interact with space, neither a mass nor a wave. Space is not warpable.
- Space cannot expand. Universe is not expanding. Even if the universe is assumed to expand, an expanding universe cannot alter the distance between gravitationally bound objects in the universe, cannot stretch the wavelength of a wave, since they are not anchored to space.
- Tiem is absolute. Mass is absolute. Mass is conserved.
- Mass cannot be converted to energy since energy has no existence independent of mass. Light has no energy, temperature.
- $E\neq mc^2$, $E\neq hf$, $\lambda\neq h/p$, $E\neq pc$, $m'\neq\gamma m$, $m'=m$.

- Particles are not waves. Waves are not particles. Particles cannot behave as waves.
- Any entity that propagates cannot have momentum. Any entity with momentum cannot propagate.
- Motion is not propagation. Propagation is not motion. Light waves propagate. A burst of light moves. The motion of a light burst is not governed by Maxwell equations for propagation of light.
- Light propagates in space even in the presence of a medium. If the medium is pulled out, light does not move with the medium.
- Mass cannot warp space even if space is warpable. If space is warpable, it must be the volume of an object that warps the space. Space is not warpable.
- Galileo-Newton Relativity is incorrect. Trains do not derail relative to observers. It is the train track that moves against the motion of observers relative to the observer. The speed and the path of the train are unaltered relative to observers. No Special Relativity is required.
- Propagation of light is absolute. Light does not propagate relative to inertial frames.
- Every inertial frame is not a stationary frame for light. Maxwell equations cannot be transformed onto inertial frames.
- Light does not behave as golf balls. Light cannot be forced to behave as golf balls. Light has no momentum. Light cannot be forced to carry momentum.
- The Eigenspace of the Position Operator in Quantum Mechanics is not unique. The eigenspace of the momentum operator is also an eigenspace of the Position Operator and hence position and momentum are simultaneously measurable to any achievable precision. There is no precision tradeoff between position and momentum. The Heisenberg Uncertainty Principle is false [9].
- No Special Relativity is Required.
- Gravit cannot bend light in a vacuum.
- Gravity has no effect on time. Gravity affects the time delay taken for an object to travel a distance. Time delay taken to travel a distance is independent of time.
- Universe is not expanding [8].

In Special Relativity, the energy of a particle of mass m with momentum p is given by $E^2=(pc)^2+(mc^2)^2$. The Foundation of Modern Physics lies on the relationship $E^2=(pc)^2+(mc^2)^2$. This relationship cannot exist. If it exists, the energy E will be given by the pair of vectors (**E**,**E***), where **E**$=pc\pm jmc^2$. The energy E must be real and hence the energy of a particle cannot be given by $E^2=(pc)^2+(mc^2)^2$. Special Relativity cannot exist.

The relationship $E^2=(pc)^2+(mc^2)^2$ is a result of the mass of an object being dependent on its speed by Einstein's Relativity Factor, which is also referred to as the Lorentz Factor, in Special Relativity. When the

mass of an object is dependent on its speed by the Lorentz Factor, both the momentum and energy will be dependent on the Lorentz Factor. If both the momentum and energy are dependent on the Lorentz Factor, that will lead to the energy relationship $E^2=(pc)^2+(mc^2)^2$, which is a contradiction since energy cannot be real and unique. Energy of a particle must be real, positive, and unique. As a result the mass of an object cannot depend on its speed. The relative momentum and relative energy cannot coexist. There is no relative mass of an object. The mass is the mass irrespective of its speed.

In Special Relativity, energy of a particle is given by **E**$=pc\pm jmc^2$. The real component $E_R=(pc)$ is meaningless. It does not represent the energy of a particle. The imaginary component $E_I=jmc^2$ has no real existence since it is imaginary. Einstein's celebrated equation $E=mc^2$ is not real, and in fact the relationship should be $E=jmc^2$. The relationship $E=mc^2$ has no existence.

The real energy component $E(real)=pc$ is not the E when m=0 since p is also zero when m=0. The product pc is meaningless since it indicates a particle of mass m having two speeds, the real speed v generating momentum p and the speed c relative to light acting on momentum p generating energy. The speed of a particle must be unique and hence the product (pc) cannot represent the kinetic energy of a particle of mass m moving at speed v. A mass with momentum p cannot have relative speed c since light is not relative, and hence energy $E=pc$ relative to a beam of light cannot exist.

The imaginary energy component $E(imag)=j(mc)c$ is the rest energy of the particle for p=0. The energy given by Einstein's famous equation $E=(mc)c$ is imaginary and has no real existence; it is $E=j(mc)c$. It has no existence since light is not relative. A mass cannot have a relative speed c relative to light since light has no standstill existence. A mass cannot have a relative speed relative to an entity that has no standstill existence. Light that does not have a standstill existence cannot be relative, and hence a stationary mass cannot have speed c relative to light. A rest mass cannot have real kinetic energy. The rest energy of a mass m in Special Relativity is imaginary, $E=j(mc)c$, not real.

"Light cannot be a frame of reference for the motion of objects of mass."

The claim in Special Relativity that there is no absolute frame is a self contradiction of Special Relativity. There is an inherent hypothetical absolute frame hidden in Special Relativity. Special Relativity uses a hypothetical beam of light orthogonal to the motion of an object as the absolute frame. It is this hypothetical absolute frame that brought the speed of light c into the motion of mass giving the mass imaginary rest energy $E=jmc^2$. It is this hypothetical absolute frame that brought the speed of light c into the motion of mass giving it the energy $E=pc$, which is meaningless. $E=pc$ does not represent the energy of a particle with momentum p. The mass of an object cannot depend on its speed by Einstein's Relativity Factor or the Lorentz Factor. The mass of an object is speed independent. The energy of a particle of mass m with momentum p must be given by $E=p^2/2m$. The kinetic energy of an object of mass has nothing to do with speed of light unless the object is moving at the speed of light.

Space is not warpable. Even if the space is assumed to be warpable, a mass cannot warp space since it is not the mass that occupies the space. It is the volume that occupies the space. If the space is warpable, it is the volume that must warp the space, not the mass. If the space is warpable, according to General Relativity, the warp of the space by an object of mass m with volume v is the same as the warp of the space by the object of the same mass m with bigger volume V; this cannot be true since warp by an object of volume v cannot be the same as the object of bigger volume V. A bigger volume occupies more space and hence the warp must be steeper if the space is assumed to be warpable. General Relativity is self contradictory. The mass of an object cannot warp the space even if the space is warpable. Space is not warpable. It is the medium that is warped by the mass of an object, not the space. General Relativity has no existence.

An apple on a tree does not have an acceleration. A falling apple has an acceleration. Newton's law m=F/a does not apply for a=0, where a is the acceleration, F is the force, and m is the mass. There is no acceleration without motion, without change of the position. An object sitting at standstill on a gravitational object has a gravitational force, but it has no acceleration. A cabin moving at an acceleration not equivalent to a cabin sitting standstill on a gravitational object. Einstein's equivalence principle is false. General Relativity has no existence.

Einstein started Special Relativity by considering a thought experiment where a vertical beam of light is released from the bottom of a train moving at constant speed. He proclaimed that the propagation of light is relative, light has momentum, and light behaves as an object of mass. In Special Relativity, a vertically released beam of light travels vertically relative to passengers on the train while the same beam light travels on a forward angular path relative to external observers outside the train.

Einstein forced the light to be relative and behave as golf balls. Einstein used the Lorentz Transform to show that the light is relative and maintains the form of Maxwell equations for the propagation of light relative to inertial frames. Einstein overlooked the fact that the Lorentz Transform and Special Relativity are polar opposites. The Lorentz Transform is not the same as the Special Relativity for motion in the direction of motion of the frame. Einstein's time dilation factor does not belong in the Lorentz Transform. Einstein's forcing of time dilation factor for the lateral plane onto the Lorentz Transform made the Lorentz Transform not unique. Lorentz Transform is not unique and cannot transform Maxwell equations

for propagation of light onto an inertial frame. Lorentz Transform does not exist.

The Lorentz Transform and Special Relativity are polar opposites. The Lorentz Transform physically transforms the Maxwell equations for propagation of light onto an inertial frame from a frame where light naturally propagates in space. The Lorentz Transform is not an observer's perception; it is an actual transform. The relative distance and relative time on a moving frame in the Lorentz Transform are the actual values on the frame, the values a passenger on the moving frame measures. The relative time and relative distance in the Lorentz Transform are not perceptions of external observers. Transformation of Maxwell equations onto an inertial frame is not an external observer perception, it is an actual brick and mortar transform.

The Lorentz Transform does not assume light to carry a momentum. In the Lorentz Transform, both the path and speed of light are frame independent. The Lorentz Transform applies only for motions in line with the motion of the frame, alone the frame or against the direction of the frame. Einstein's relative time dilation factor in Special Relativity that is derived for motion in the lateral plane does not apply for motion in line with the motion of the frame. Time dilation factor ɣ in Special Relativity does not belong in the Lorentz Transform.

When the Lorentz factor is properly chosen (Proper Universal Transform), relative distance and relative time are frame independent in the Lorentz Transform. In the Lorentz Transform with the Proper Universal Transformation factor, the relative axes are universal, not relative, frame independent, $x'=x$ and $t'=t$. The Proper Universal Transformation Factor in the Proper Universal Transform is $ɣ^2$.

Only the speed of light is frame independent in Special Relativity. The path of light is frame dependent in Special Relativity, by proclamation, by choice. The path of light cannot be frame dependent since the path of light is a constant that can only be altered by the change of the medium just as the speed of light is a constant that can only be altered by the change of medium. Special Relativity forces a false momentum on light. Special Relativity forces its time dilation factor ɣ for the lateral plane (y,z) that is orthogonal to the direction of motion (x-axis) of the frame on the Lorentz Transform where motion is in line with the direction of motion of the frame (x-axis). Einstein's lateral plane time dilation factor ɣ does not belong in the Lorentz Transform.

Time dilation factor is directional. The time dilation factor for motion in the direction of the frame is not the same as the time dilation factor for motion against the direction of the frame. It is for the average forward and return motion that Special Relativity is equivalent to the Lorentz Transform. For one-way motion, the Lorentz Transform and Special Relativity are not the same; they are polar opposites.

The time dilation factor ɣ for lateral plane in Special Relativity cannot be applied for any other directions. If time is assumed to be relative, time cannot be non-directional. The relative time varies with the polarity of the speed of the frame. Time dilation for speed +v of the frame is different from the time dilation factor for the speed -v of the frame. It is the average forward and return time dilation factor that is independent of the polarity of the speed of the frame. Special Relativity and the Lorentz Transform that run on the average forward and return time cannot be applied to real-time systems. Real-time systems run on one-way time. Special Relativity and the Lorentz Transform do not run on one-way time.

It is a mathematical oversight of both Lorentz and Einstein that led to the wrong conclusion that the Maxwell equations for propagation of light are relative. Both Lorentz and Einstein failed to take into account the necessary conditions that emerged from the transformation of the Maxwell equations onto an inertial frame. Maxwell equations for propagation of light do not apply relative to inertial frames. Light is not relative. Light does not behave as golf balls relative to passengers on a train. A vertically released beam of light from the bottom of a train traveling at constant speed does not take a straight vertical path relative to the passengers on the train; light cannot behave as golf balls. A vertically released light burst lags behind relative to the passengers on the train while the light wave in the burst propagates vertically on its path. The distance light propagates within a burst is the same for both passengers inside and for external observers outside the train. The time it takes a vertical beam to hit the ceiling will be the same for passengers in the train as well as for external observers.

Vertically propagating light burst shifts on a reverse angular path relative to passengers on the train while propagating vertically within the burst. The time it takes for a vertically released light burst from the bottom of the train to hit the ceiling is t=h/c since light propagates vertically while the burst is shifting at speed -v relative to passengers on the train, where h is the height of the train. A passenger in a closed cabin in a train can determine the speed of the cabin using a beam of light. Every inertial frame is not a stationary frame for light. Every inertial frame is a stationary frame for motion of objects of mass, not for the massless light. The massless light cannot be given momentum by proclamation.

A vertically released beam of light from the bottom of a train traveling at constant speed does not take a forward angular path relative to external observers outside the train since propagation of light is not relative. Light does not behave as golf balls relative to external observers. Observers cannot bend light. Observers cannot derail a train. A vertically released beam of light from the bottom of a train traveling at constant speed takes a vertical path relative to external observers outside the train and the time it takes for the light burst to hit the ceiling relative to an external observer is t=h/c, which is same as the time it takes for the burst to hit the ceiling relative to passengers on the train.

There is no time dilation. There is no path dilation.

There is no distance dilation. There is no mass dilation. There is no length contraction. The perception of a passenger that a vertical light burst shifts against the motion of the train at -v speed while propagating vertically does not alter the reality; it facilitates a passenger on the train to determine the speed of the train. A vertical light burst propagates vertically relative to all the observers both inside and outside the train. Even though a passenger on a train cannot determine the speed of the train by throwing golf balls, a passenger on a train can determine the speed of the train by using a beam of light.

The time in Special Relativity is the average forward and return time of a beam of light, which is not given by the clocks. Clocks are not compatible with the Special Relativity. Average forward and return time can only be calculated off-line. Average forward and return time is not given by one-way clocks. Clocks that we use in our day to day tasks are useless for Special Relativity. If Einstein had considered a beam of light at an angle to the direction of the moving train, he should have realized the fallacy of Special Relativity, the blunder beneath.

For motion in line with the motion of a frame, Special Relativity ($x'=x/ɣ+vt'$) and the Lorentz Transform ($x'=x/ɣ-vt'$) are polar opposites. Special Relativity is not Lorentz Transform compliant for one-wary motion and vice versa. They are mutually compliant only for the average forward and return motion, but the meanings are different. In the Lorentz Transform, relative distance contracts for motion in the direction of motion of the frame while distance dilates against the direction of the frame relative to passengers on the frame, whereas in Special Relativity, relative distance dilates in the direction of motion of the frame while relative distance contracts for motion against the direction of motion of the frame relative to external observers. However, both Special Relativity and the Lorentz Transform have average forward and return distance dilation and average forward and return time dilation although what they represent are different.

"The relative axes contract with motion in the Lorentz Transform."

Time width is a definition. Time does not exist. There is no flow of time until we define a time width. We define the time width using the motion of objects. We define a time width in earth days and earth years. Clocks are engineered to break down the time, a day or a year into smaller intervals. The time, a day or a year, is not determined by clocks. The display of a clock is meaningless unless the clock is in synchrony with the time, a day or a year. If a clock runs faster or slower without being in synchrony with the day or the year, then that clock does not represent the time; the clock has to be recalibrated to be in synchrony with the day or the year for it to represent the time. Clocks do not determine the time.

Clock is an engineered device. The display of the clocks depends on the environment the clocks are operated on. Unless clocks are calibrated for the environment the clocks are in, clocks do not represent the correct time. It is the mechanism of a clock that is relative, not the time itself. A day or a year is not relative. The time, a day or a year is independent of the motion. Time is not relative. There is no entity called time for it to be relative. Clocks do not run slower or faster relative to observers. Observers cannot change the path of light. Observers cannot change the distance light travels. Observers cannot alter the speed of clocks by running away from clocks. Speed of light has nothing to do with clocks unless the mechanism of the clock is based on the propagation of a beam of light. Ordinary clocks that we use have nothing to do with the speed of light. Time has nothing to do with speed of light c. Speed of light does not determine the speed of other entities. Speed of light is not the speed limit of the universe.

Speed of light cannot limit the speed of objects of mass. The speed of light is the speed of light, nothing more. Universe has no speed limit. Once a burst of light is out of a source, the velocity of light can only be altered by a medium. Both speed and the path of light are constants that can only be altered by the change of medium. The path and speed of light are observer independent. The path and speed of light are independent of gravity. Despite how colosal a mass is, light is unaffected by a mass in a vacuum. The propagation of light is not relative.

Modern Physics is hanging on a single thread, a false premise, that light behaves as golf balls. If light is relative and behaves as golf balls, the energy will not be real and unique. Energy in Special Relativity is a complex vector, not scalar. Special Relativity and General Relativity cannot exist. Since light is not relative and the equivalence principle is false, Special Relativity, General Relativity, Quantum Mechanics, and Modern Physics in general are false.

"Observers cannot derail a train. Observers cannot change the path of light."

Special Relativity is based on the hidden assumption that a hypothetical beam of light orthogonal to the motion of an object is the absolute frame. No object of mass can have a motion relative to light since light is not relative and has no standstill existence. An entity that has no standstill existence cannot be a frame of reference, cannot be relative. Special Relativity that is based on a hypothetical beam of light as the absolute frame of reference cannot exist.

"The motion of an object in Special Relativity is described relative to a hypothetical beam of light that is orthogonal to the motion of the object."

"If Special Relativity holds, the energy of a particle is a complex vector, not real."

Special Relativity is invalid since energy is a vector in Special Relativity. Special Relativity is invalid since

time cannot be non-directional if time is relative. To see the fallacy of Special Relativity, all you have to do is to consider a beam of light at angle to the direction of the motion of the frame instead of a vertical beam of light. Then, you will realize the fact that the relative time is directional and Einstein's Relativity Factor for the lateral plane does not hold for other directions.

Special Relativity runs on the average forward and return time of a beam of light. Special Relativity is invalid since clocks do not run on average forward and return time of a beam of light. General Relativity is invalid since there is no acceleration without motion. An apple on a tree has no acceleration, a falling apple has an acceleration. The principle of equivalence is invalid. A horizontal beam of light in a stationary cabin sitting on a gravitational object takes a horizontal path. Gravity has no direct effect on light. Gravity has no effect on the massless. Gravity cannot bend light in a vacuum.

General Relativity is invalid since it is the volume of an object that occupies the space, not the mass of an object. For an entity to warp the space, that entity must occupy the space. Mass of an object does not occupy the space. If space is warpable, it is the volume of an object that warps space, not the mass of an object. If the space is warpable, the mass of an object has no effect on the amount of warp by an object. Space is not warpable. If space is warpable, perpetual motion of planetary systems is not possible, and planetary systems will collapse.

Lemma:
If the space is warpable by an object of mass, the amount of warp is a function of the volume of an object, not a function of the mass of an object.

General Relativity is invalid since gravity has no effect on light in a vacuum. General Relativity is invalid since light cannot propagate at constant speed on a curved path. General Relativity is invalid since light cannot propagate on geodesics; a beam of light orthogonal to the geodesics does not travel on geodesics. General Relativity is invalid since time cannot be relative. General Relativity is invalid since space and time are mutually independent and there is no spacetime as a single entity of space and time. Space and time cannot be brought to the equation since there is no frame of reference independent of space and time.

The distance-delay in Special Relativity and General Relativity is not space-time. The distance x traveled is not space. The time delay, t, taken to travel the distance is not the time itself. The x and t in the Lorentz Transform and Special Relativity are not the coordinates in space and time. Space and time has nothing to do with Special Relativity and General Relativity. The x is the distance traveled in time delay t. The x and t are independent of spacetime coordinates. When Special Relativity is invalid, the motion mechanics based on Special Relativity is invalid. The motion mechanics cannot be modeled by Special Relativity since Special Relativity operates on

the average forward and return time of a beam of light. Einstein's Relativity theories are not valid for one-way motion in real-time. Since Quantum Mechanics stems from Special Relativity, when Special Relativity has no existence, Quantum Mechanics has no existence.

"When energy of a particle of mass m with relative momentum p is given by $E^2 = (pc)^2 + (mc^2)^2$, energy is not real and not unique."

The Lorentz Factor that contains the frame dependent speeds (c+v) and (c-V) cannot be used to prove that the speed of light is frame independent. The presence of the terms (c+v) and (c-v) is an indication that Special Relativity assumes that speed of light is frame dependent in order to prove speed of light is frame independent, a self contradiction. The terms (c+v) and (c-v) cannot be present in Special Relativity and in the Lorentz Transform if the speed of light is frame independent.

A beam of light traveling one-way cannot have two speeds (c+v) and (c-v) simultaneously and hence the Lorentz Factor is based on the two-way average forward and return time of a beam of light. Clocks do not tick the average forward and return time of a beam of light. Clocks are incompatible with the Lorentz Transform, Special Relativity, and General Relativity. The presence of the Lorentz Factor containing (c+v) and (c-v) in the Lorentz Transform, Special Relativity, and General Relativity that claim the speed of light is frame independent is self contradictory.

Any entity that moves or propagates on a fixed path is frame independent. Galileo-Newton Relativity ia invalid since Galileo-Newton Relativity alters relative path. The path of a moving entity cannot be altered relative to observers. Special Relativity is based on the false assumption that the Galileo-Newton Relativity is correct.

Maxwell equations are absolute. Maxwell equations cannot be transformed onto moving frames. Light does not propagate on moving frames. Light propagates in space. Light propagates in space even in the presence of a medium. If the medium is pulled out, light does not move with the medium is an indication that the light propagates in space. The path and the speed of light are constants that can only be altered by the medium, and hence light is naturally frame independent. No Special Relativity is required. Special Relativity is a result of both Mathematical and Conceptual oversight.

Although the motion of an object of mass is relative since an object of mass has a standstill existence and hence stoppable unlike light, the mass of an object itself cannot be relative and cannot depend on its speed. The Lorentz Transform, $x' = x/ɣ - vt'$, is what a passenger on the moving frame measures; it is based on the fact that light has no momentum. Both speed and path of light are frame independent in the Lorentz Transform. Special Relativity, $x' = x/ɣ + vt'$, is what an external observer measures under the false assumption that light has a momentum. Only the

speed of light is frame independent in Special Relativity, the path of light is frame dependent in Special Relativity even though the path of light is constant that can only be altered by the change of the medium.

Special Relativity ($x'=x/ɣ+vt'$) and the Lorentz Transform ($x'=x/ɣ-vt'$) are polar opposites. Relative distance axis and the relative time axis contract with motion in the Lorentz Transform, $x'=x/ɣ$ and $t'=t/ɣ$. In the Proper Universal Relativity ($x'=x-vt'$) relative distance and relative time axes are absolute, frame independent, $x'=x$ and $t'=t$. There is no dilation or contraction in the Proper Universal Relativity, clocks and meter sticks are universal.

The Proper Universal Relativity,
  $x'=η(x-vt)$
  $t'=η(t-vx/c^2)$
where, Proper Universal Transformation Factor $η=ɣ^2$.

Proper Universal Relativity is equivalent to $x'=x-vt'$. Light has no momentum. Both the path and speed on its path are observer independent. A burst of light lags behind relative to the passengers on a moving frame by speed -v while propagation of light within the burst is unaltered. Relative to an outside observer the path and speed of a light burst are unaltered. Light is not relative. A passenger on a moving frame can determine the speed of the frame using a burst of light. An inertial frame is not a stationary frame for light.

"Lorentz Transform is the Polar Opposite of Special Relativity for On-Way Motion."

Time is not relative. The mass of an object is independent of its speed. Special Relativity does not deal with spacetime. Spacetime cannot be brought to the equation. The distance traveled and the time delay taken to travel the distance are independent of spacetime coordinates. Einstein's Relativity Factor does not hold for any direction except for the motion orthogonal to the frame of motion. Einstein's Relativity Factor does not belong in the Lorentz Transform. Maxwell equations are not transformable onto inertial frames. Light does not behave as golf balls. Since $E=jmc^2$, mass and energy are not equivalent. Mass cannot be converted to energy since energy has no existence without mass. Mass is conserved $E≠mc^2$. Special Relativity, General Relativity, and the Lorentz Transform are self contradictory and cannot exist even hypothetically.

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