Journal of Multidisciplinary Engineering Science Studies (JMESS)
ISSN: 2458-925X
Vol. 9 Issue 8, August - 2023

Relativity Of Light: No Special Treatment Required

(Hidden Equation that Reveals Where, What, Why, and How Special Relativity Went Wrong)

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

***Abstract*—If time is forced to be relative as Einstein did in Special Relativity, the Relativity Factor or the Time Dilation Factor will not be constant for an inertial frame and the relative time will be directional and dependent on the angle to the direction of motion of the frame and hence there are infinitely many relativity factors for an inertial frame. The path of light can only be altered by the change of medium. The path of light cannot be altered relative to observers, both internal and external. A vertically moving arrow in a moving train is vertical relative to all observers. A vertically moving arrow does not tilt relative to observers both on the train and off the train. A Light burst is a massless and momentumless arrow. The time it takes for an arrow to hit the ceiling is not relative.**

Average Relativity Factor in Special Relativity for forward and return time is not applicable for one-way motion. Einstein's lateral plane Relativity Factor cannot be forced onto other directions for one-way motion. Einstein's Relativity Factor that was derived for a direction orthogonal to the motion of the frame is not constant for the entire inertial frame. If time is relative, time will be directional and depends on the angle to the direction of motion of the frame and the polarity of the speed of the frame. Directional motion cannot generate non-directional time or a non-directional Relativity Factor. Time must be non-directional and hence cannot be relative.

In Special Relativity, Einstein forced the lateral plane Relativity Factor onto the direction of motion of the frame by redefining the time as the average forward and backward time of a beam of light, and by forcing the average forward and backward length in the direction of motion to contract by the inverse of the lateral plane Relativity Factor. The forcing of Einstein's Relativity Factor, which was derived for a direction orthogonal to the direction of motion of the frame, onto the direction of motion of the frame cannot make it the constant Relativity Factor for the entire frame.

Special Relativity is self-contradictory. A theory that claims that the speed of light is observer independent cannot contain the terms (c-v) and (c+v). The Relativity Factor in Special Relativity contains the terms (c-v) and (c+v). The terms (c-v) and (c+v) cannot exist unless the speed of light is observer dependent. The presence of both terms (c-v) and (c+v) also indicates that Special Relativity is based on the average forward and return motion. Real-time systems do not operate on average forward and return dynamics. Special Relativity cannot describe real-time systems that operate on instantaneous time.

The average has to be calculated off-line by taking separate measurements for forward and reverse motion. Average is not available for measurement. Average does not exist for instantaneous time. On-line systems do not run on average forward and return time of a beam of light. Motion dynamics of an object is not determined by the average forward and backward motion. A theory based on average forward and return time, and average forward and return length contraction cannot model real-time systems that run on one-way instantaneous time and one-way instantaneous distance. Dynamic systems do not operate on average forward and return motion dynamics. A moving object has no information on the average forward and return time and the average forward and return distance.

Clocks do not run on the average forward and return time of a beam of light. Clocks are incompatible with Special Relativity. Measuring sticks do not measure average forward and backward travel distance. Time is a definition. Clocks do not determine the time. We define a time width, a day or a year, and engineer clocks to break it down into finer intervals. Clocks measure time delay, not the time itself, Time delay is independent of an instance of time. Distance traveled is independent of space coordinates. Space and time cannot be brought into the equation. Average forward and backward time and length exist on paper in textbooks, not in real-time dynamic systems. Special Relativity exists on paper as both mathematically and conceptually invalid theory, not as a dynamic system that operates in nature.

The forcing of Einstein's Relativity Factor, which is derived for a direction orthogonal to the motion of the frame, onto the direction of motion of the frame cannot make it the Relativity Factor

for all the other infinitely many directions. Einstein's Relativity Factor that is derived for one direction and forced onto one more direction is not applicable for infinitely many other directions. Einstein's Relativity Factor is the Relativity Factor only for the directions orthogonal to the direction of motion of the frame. There is no one single constant Relativity Factor for an entire frame. Relativity Factor is direction dependent. If time is assumed to be relative, relative time is directional. A non-directional relative time cannot be generated by directional motion. Time must be non-directional.

Time dilation is not necessary in Special Relativity. Special Relativity without time dilation is possible. Time does not have to be relative in Special Relativity since the relative time can be made absolute by allowing angle dependent contraction in all directions. If the distance at any angle is allowed to contract by the inverse of the Relativity Factor at that angle, the time will be absolute, frame independent. The mass of an object is absolute and frame independent.

The mass of an object is not determined by observers. Observers measure the mass. If the measured mass of an object varies with its speed, it is the measuring instrument that is speed dependent, not the mass itself. What is relative is the measuring instrument, not what is being measured. The rate of a clock is not determined by observers; it is determined by engineers. The path of a moving entity is not determined by observers. It is the relative position of the path that is displaced against the observer motion while the path remains unaltered. Relative displacement of the path relative to observers does not alter the path and the speed of an entity on its path. Observers cannot derail trains.

Special Relativity does not deal with space and time. What Special Relativity deals with is the distance traveled and the time delay taken to travel the distance. The distance traveled and the time delay taken to travel the distance are independent of the coordinates in space and instances of time. Distance-delay is not space-time. Space and time are mutually independent. Space and time cannot be brought to the equation since there is no frame of reference independent of space and time. Time is independent of space coordinates.

The massless has no momentum. Light does not have momentum and does not behave as golf balls. Emission of light cannot generate momentum. There is no radiation pressure on a radiation-source in a vacuum. The radiation pressure is due to the temperature gradient generated by emitted electromagnetic waves in the presence of medium, charge particles. Light cannot generate energy, temperature, and pressure in a vacuum. In Special Relativity, the derivation of momentum and energy relationships based on radiation pressure are invalid, and the mass of an object is not relative. Light cannot be forced upon a momentum by proclamation. If the mass of an object is relative, the energy will not be real and unique. The rest energy of an object of mass m in Special Relativity is imaginary, E=j(mc)c.

Light cannot be relative since both the speed and the path of light are constants that can only be altered by the change of the medium. An entity that has no standstill existence cannot have momentum. Light does not propagate relative to observers since light has no momentum. Maxwell equations cannot be transformed onto an inertial frame. The Lorentz Transform cannot transform Maxwell equations onto an inertial frame uniquely. If the Lorentz Transform is used for the transformation of Maxwell equations, the magnitudes of transformed electromagnetic fields are unbounded as the speed of the frame reaches the speed of light. Neither the direction nor the speed of light can be altered relative to observers or gravity. Gravity has no effect on light in the absence of a medium. Gravity has no effect on the massless.

It is the distance to the path of light that varies with the motion of observers. It is the path that is displaced against the motion of observers relative to observers. The relative displacement of the path of a moving entity relative to observers does not alter the path and the speed on its path. The path and the speed on its path are unaltered relative to any observer, inside or outside. Observers cannot derail light. The path of a moving entity cannot be altered relative to observers. A vertically traveling arrow in a train does not tilt onto an angular path relative to external observers. A vertically traveling arrow in a train travels vertically while it is displaced in the direction of the train relative to external observers.

Galileo Relativity derails trains. Einstein's Special Relativity derails light. Special Relativity is a result of not realizing the fundamental mistake in the Galileo Relativity. Galileo Relativity is incorrect since a moving entity must remain on its path relative to all observers. Relative velocity cannot be obtained by the simple vector addition used in Galileo Relativity since a train cannot be derailed relative to any observer.

There is no time dilation or contraction. The path of any motion is unaltered relative to all observers. The relativity of light and the relativity of objects of mass are polar opposites since light has no momentum. We cannot force a momentum on light by proclamation as Einstein did in Special Relativity. Observers in a train can determine the speed of the train by using a light burst. If nature allows us to determine the speed of an inertial frame from within using a beam of light naturally, why do we have to go to the extreme and concoct a hypothetical theory that is invalid both mathematically and conceptually to deny that

natural capability, which is exactly what Einstein did in Special Relativity. Special Relativity derailed light to achieve that. Observers cannot derail a train. Gravity and acceleration are not the same. Einstein's equivalence principle does not hold. Gravity cannot bend light. If space is warpable it is the volume of an object that warps the space, not the mass of an object. Space is not warpable. General Relativity is meaningless.

Special Relativity is a result of mathematical and conceptual blindness. There is no science in Special Relativity; Special Relativity appears to have taken hold as a religion, not as a science. Special Relativity brought an abrupt end to the reality in science. The perceived relative displacement of an object relative to observer motion does not alter the path and the speed of the object on its path. No physical change can take place relative to observers.

Relativity is all about the motion of light bursts, not about the propagation of light. A light burst is a massless and momentumless moving arrow. The motion of a light burst is not governed by Maxwell equations. It is the propagation of light that is governed by Maxwell equations. The motion of a light burst is relative. The propagation of light is not relative. A massless moving arrow lags behind with the motion of an observer while the path and the speed of the massless arrow remain unaltered.

A moving arrow does not tilt relative to observers on the frame or off the frame. The path and the speed of a light burst on its path are observer independent naturally. Every inertial frame is not a stationary frame for light since light has no momentum. Two fundamental mistakes in Special Relativity are the forcing of a hypothetical momentum on light by proclamation where it does not belong and the derailment of light relative to observers. The path of a moving entity cannot be altered relative to observers. Light cannot carry momentum. A moving arrow does not tilt relative to observers. Special Relativity based on blind physics brought a tragic end to science and the dawn of voodoo science with relative time, relative mass, particle waves, Higgs field, gravitational waves, speed dependent aging, expanding universe and many more. The most outrageous of all is the particles in multiple places simultaneously, which is no different from a religious creation folktale, antiscience.

Keywords—Energy; Light; Frame; Einstein; Time Newton; Gravity; Special; General; Relativity; Clock; Galileo; Momentum; Maxwell; Waves; Particles

I. INTRODUCTION

"Clocks do not determine time. We define the time width, a day, and engineer clocks to break it down into finer intervals. We do not grow old by the clocks that we engineer."

Theorem: Dilation Factor $\eta(\theta)$ at Angle θ

When time is forced to be relative, the relative time is directional. The time dilation factor in Special Relativity is directional. For a burst of light traveling at an angle θ to the direction of motion of the Einstein train, the relative time t' and relative distance d' are given by, $t'=\eta(\theta)t$ $d'=\eta(\theta)d$, where d is the distance traveled at time delay t at an angle θ. The time dilation factor $\eta(\theta)$ at any angle θ in Special Relativity, the hidden equation, is given by,

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

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

The Hidden Equation in Special Relativity:

The Relativity Factor $\eta(\theta)$ at any angle θ is the hidden equation in Special Relativity,

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

All the properties and what, where, and how it all went wrong in Special Relativity is encoded in this equation. If this equation had been known to Einstein, we would have never heard about Special Relativity. The Relativity Factor $\eta(\theta)$ also allows time to be absolute in Special Relativity with volume contraction based on the direction dependent length contraction by the contraction factor $1/\eta(\theta)$ for all θ, $-\pi\leq\theta\leq\pi$.

It is the γ^2 term present in the Relativity Factor $\eta(\theta)$ that allowed Einstein to deceivingly manipulate the transformation of the Maxwell equations onto an inertial frame using the Lorentz Transform mathematically by applying a redundant multiplication factor γ to pretend that the Maxwell equations are transformable onto an inertial frame even though Lorentz Transform cannot transform Maxwell equations equations onto an inertial frame [6].

Lemma:

In Special Relativity, Einstein derailed light relative to observers and forced time to be relative by choice even though Einstein could have equally made time absolute or observer independent by allowing the volume to contract in all directions. Time can be made absolute in Special Relativity by allowing the length of a moving entity in any direction θ to contract by the reciprocal of the Relativity Factor $1/\eta(\theta)$ in that direction for all θ, where $-\pi\leq\theta\leq\pi$.

Question:

If an arrow travels in a moving train vertically, what is the direction of the arrow relative both passengers and external observers?

A light burst is a massless arrow. Modern Physics got the answer to this question wrong. The relative displacement of an arrow or a light burst relative to observers does not alter the direction of the arrow or the light burst. The direction of the arrow or the light burst is unaltered relative to all the observers, both inside and outside.

The Real Folly in Modern Physics:

The real folly in Modern Physics is the bending of light relative to observers and the forcing of an artificial momentum on light. Both Special Relativity and Galileo-Newton Relativity bend a path of a moving entity relative to observers. Observers cannot bend a path of a moving entity. Observers cannot bend light. Light has no momentum. Special Relativity forces an artificial momentum on light. Light cannot be forced upon a momentum even hypothetically since light has no standstill existence. Any entity with momentum must be stoppable. Light is not stoppable.

Natural Relativity:

Relativity is natural. Relativity is the relative displacement of the path of a moving entity against the motion of observers relative to observers without the path being altered. The path of a moving entity and the speed of the entity on its fixed path are observer independent naturally. Speed of light is observer independent naturally. Speed of a train on its track is observer independent naturally. No special theory is required for relativity.

Lemma:

Special Relativity is invalid in its foundation. Observers cannot derail light. Maxwell equations for propagation of light cannot be transformed onto an inertial frame uniquely [6]. Einstein's Relativity Factor ɣ is not a constant for an entire inertial frame. Relativity Factor in Special Relativity is direction dependent. It also depends on the polarity of the inertial frame ±v.

"The path of a moving entity is unaltered relative to all the observers, both inside and outside. A vertically driven arrow in a moving train does not tilt (reorient) itself onto an angular path relative to external observers. If you don't believe it, try it."

"A light burst is a massless arrow and hence, a vertical light burst in a moving train does not reorient itself onto an angular path relative to observers, both inside and outside. The relative displacement of a light burst relative observers does not alter the path of a light burst and the speed of the light burst on its constant path. The path of light is unaltered relative to observers. Observers cannot bend light. Gravity cannot bend light in a vacuum."

"Time cannot be relative. The time it takes for a train to travel from New York to Los Angeles is observer independent. Observers cannot derail a train. Vehicles do not end up in ditches relative to observers. Galileo-Newton Relativity derailed trains. Einstein derailed light."

"Light travels on a fixed track at constant speed. The time it takes for a vertical light burst in a moving train to travel from the floor to ceiling on its fixed vertical path is independent of observers. Observers cannot derail light. It is the rails that can be displaced relative to observers."

Lemma:

Time is not relative. The travel time of a light burst is frame independent, observer independent. The path of a moving entity is displaced relative to observers against the motion of observers while the path remains unaltered. The travel time of a moving entity on its path is observer independent.

Lemma:

A burst of light in a train lags behind against the direction of the train relative to the passengers in a moving train by the speed of the train since light has no momentum. The path remains unaltered relative to observers, both inside and outside.

"A light burst lags behind relative to the motion of observers."

Theorem:

Galileo-Newton relativity is incorrect. Observers cannot derail a train. A moving train must remain on its track relative to all observers.

Lemma:

If train-A travels at velocity **u** and train-B travels at velocity **v**, the relative velocity **w** of train-A relative to a passenger on train-B cannot be given by **w**=**u**-**v** since there is no train track in the direction of **w**, **w**≠**u**-**v**.

Lemma:

What is relative is the measuring instrument, not what is being measured. The length, Time, and mass are not relative. What is wrong with Special Relativity is the transferring of the dependence of the measuring instruments on the frame of reference onto nature. Constant speed of light does not require the length, time, and mass to be relative since the path of a moving entity is never altered relative to observers. Light does not bend relative to observers.

If an arrow is fired vertically in a moving train, the arrow does not tilt onto an angular path relative to external observers (if you do not believe it, try it). Relative to external observers, the arrow travels vertically while shifting on a forward angular line since the arrow also has the speed of the train relative to external observers. The path of the arrow and the speed on its path remain unaltered relative to both passengers on the train and observers outside the train. The arrow always travels vertically relative to both passengers and external observers.

The arrow is displaced relative to external

observers. Relative displacement of the arrow in the direction of motion of the train relative to external observers has no effect on the motion of the arrow. The relative displacement of the arrow relative to external observers does not change the speed of the arrow on its path. The time taken for the arrow to hit the ceiling remains the same for all observers, internal and external, for passengers and on-lookers. For a burst of light, it is the polar opposite since a burst of light is a massless arrow that has no momentum.

A vertically traveling burst of light in a train lags behind against the motion of the train relative to the passengers on the train since light has no momentum. Hence, a vertically traveling light burst shifts on a reverse angular line relative to passengers on the train; this relative angular line is not the path of light. Relative to external observers, the light burst remains vertical without horizontal displacement since light has no momentum. The path and speed of a light burst on its path remain unaltered relative to all the observers, internal and external. The time taken for the light burst to hit the ceiling is the same relative to all observers, internal and external.

What is unstated in Special Relativity is the assumption that the Galileo-Einstein Relativity is correct. Galileo-Newton Relativity is not correct since it derails trains. What is stated in Special Relativity is the false assumption that light has momentum and behaves as golf balls. Under these assumptions, Einstein considered a vertical beam of light in a moving train relative to passengers and relative to external observers. If light is assumed to have momentum and behave as golf balls, a vertical beam of light travels vertically relative to passengers in the train just like a golf ball. If light travels distance d, the time t taken to travel the distance d is given by t=d/c, where c is the speed of light, which is constant. Under the unstated assumption that the Galileo-Newton Relativity is correct, relative to an external observer, Einstein claimed that the light travels on a forward angular path, d′=d+vt′, where d′ is the distance d relative to the external observer, t′ is the time t relative to external observer, v is the speed of the train.

Since distance vector **d** and velocity of the frame **v** are orthogonal by Einstein's choice of a vertical beam of light in a moving train and d/t=c, d′/t′=c, the relative time t′ taken to travel relative distance d′ relative to external observers is given by t′=ɣt, where $ɣ=1/(1-v^2/c^2)^{1/2}$. If Einstein had allowed the height of the moving train to contract by the factor 1/ɣ, the time would have been absolute, t′=t, in Special Relativity. When a vertical beam of light is used on a moving frame, the time taken to travel a distance in the forward direction is the same as the time taken to travel the same distance in the backward direction. The relative time is independent of the polarity of the speed ±v for a beam of light orthogonal to the direction of motion of the frame. This is not the case for a beam of light that is at an angle to the direction of motion of the frame. For a beam of light that is not orthogonal to the direction of motion of the frame, the relative time t′ is not given by t′=ɣt. It is given by t′=η(θ)t, which is dependent on the polarity of the speed of the frame, ±v, and the angle of the light beam to the direction of motion of the frame, θ. Einstein Relativity Factor ɣ=η(θ) for θ=π/2. The relativity factor depends on the polarity of the speed of the frame ±v and the angle θ.

The $ɣ=1/(1-v^2/c^2)^{1/2}$ is the ubiquitous Relativity Factor, which is also known as the Lorentz Factor since the use of it as the Transformation Factor in the Lorentz Transform appeared to retain the form of the Maxwell equations after the transformation onto an inertial frame. However, the claim that the Maxwell equations are transformable onto an inertial frame using Einstein's Relativity Factor ɣ in the Lorentz Transform as the Transformation Factor is a mathematical oversight. Einstein's Relativity Factor ɣ does not belong in the Lorentz Transform. Maxwell equations cannot be transformed onto inertial frames [6]. The Lorentz Transform cannot transform Maxwell equations onto an inertial frame.

After obtaining t′=ɣt for a vertical beam of light in a moving train, Einstein falsely presumed that the Relativity Factor ɣ is a constant for an entire inertial frame and the relationship t′=ɣt holds for an entire inertial frame in general in any direction. When he realized that it does not hold for a beam of light in the direction of the frame, he twisted the nature to fit the relationship t′=ɣt.

When a beam of light is released in the direction of the motion of the train, the time taken for the beam of light to travel in a distance in the forward direction is different from the time taken to travel the distance in the backward direction relative to observers. In order to overcome this discrepancy between the forward and backward relative times, Einstein redefined the time as the average forward and backward time of a beam of light. When Einstein realized he still could not get the relationship t′=ɣt to hold in the direction of motion of the frame without further concessions, Einstein forced the length to contract by the inverse of the Relativity Factor, 1/ɣ, in order to make the relationship t′=ɣt holds for a beam of light in line with the motion of the frame.

Einstein equally could have made relative time absolute or t′=t by allowing the length in the direction of motion of the frame to contract by the contraction factor $1/ɣ^2$ just as he could have made the time absolute or t′=t in a direction orthogonal to the direction of motion by allowing the height to contract by the contraction factor 1/ɣ.

Every decision in Special Relativity is arbitrary; you can make time absolute and allow length in all directions to contract or you can keep time relative by whatever relationship you want and allow length to contract partially to maintain that relative time relationship. Einstein opt for choosing time dilation relationship t′=ɣt and allow the partial contraction of length along the direction of motion of the frame. However, in Special Relativity, the relationship t′=ɣt is valid only for direction orthogonal to the motion by its derivation and in the direction of motion of the frame by its forcing in that direction; the relationship t′=ɣt is

invalid in any direction other than those two.

After redefining the time as the average forward and backward time of a beam of light and forcing a length contraction in the direction of the frame by the factor 1/ɣ, Einstein proclaimed that the relative time on an inertial frame is given by t′=ɣt. Einstein derived the relationship t′=ɣt for a beam of light orthogonal to the direction of motion of the frame and forced it on one other direction, the direction of motion of the frame, by forcing the nature to alter itself so that t′=ɣt holds in the direction of motion of the frame. But the problem is that the direction of motion of the frame is not the only other direction t′=ɣt must hold if we want to claim that the relationship t′=ɣt holds for the entire inertial frame. We have to show that the relationship t′=ɣt holds for all the other directions, for infinitely many directions.

To claim that t′=ɣt holds on a moving frame, we have to show that the relationship t′=ɣt holds for a beam of light at any angle θ to the direction of motion of the frame; this is what Einstein failed to do. If Einstein had considered a beam of light at an angle to the direction of motion of the frame, instead of a vertical beam of light in a moving train, he should have realized the mockery of Special Relativity.

Einstein either failed to notice the dependence of the relativity factor on the angle or purposely disregarded that dependence and tried to force it on the direction of motion of the frame using whatever additional assumptions required for it to hold. The problem is that it is not possible to make Einstein's Relativity Factor ɣ, which is derived for a direction orthogonal to the direction of motion of the frame and forced it to be valid in the direction of motion of the frame, be the Relativity Factor of an inertial frame. The Relativity Factor ɣ is not a constant for an inertial frame.

Here, we derive the General Time Dilation Relationship for a beam of light released from a moving frame at an angle θ to the direction of motion of the frame under the same false assumption that light is relative and behave as golf balls to demonstrate the fallacy of Special Relativity. If Einstein had done that he should have realized the fallacy of the time dilation and the mockery of Special Relativity, the invalidity of Special Relativity. The rest of the world would have realized how they were fooled by the concept of time dilation, mass dilation, length contraction nonsense in Special Relativity.

II. GENERAL RELATIVITY FACTOR η(θ) AT AN ANGLE θ TO THE DIRECTION OF MOTION OF THE INERTIAL FRAME IN SPECIAL RELATIVITY

Let us consider a beam of light released at an angle θ to the direction of the train traveling at constant speed v. Under the same false assumption that light is relative and behaves as golf balls in Special Relativity, the beam of light takes a straight path at the angle θ and travels a distance d at time t relative to passengers on the train given by,

$$d=ct \qquad (2.1)$$

where, c is the speed of light.

In Special Relativity, relative to external observers, the same beam of light travels distance d′ at time t′ given by,

$$\mathbf{d}'=\mathbf{d}+\mathbf{v}t' \qquad (2.2)$$

This equation $\mathbf{d}'=\mathbf{d}+\mathbf{v}t'$ in Special Relativity is incorrect; it comes from Galileo-Newton relativity under the assumption light has momentum. Galileo-Newton Relativity is incorrect since it derails a train. A train cannot be derailed relative to observers. Einstein derailed light. Light cannot be derailed relative to observers. However, our aim in this section is to show that the Relativity Factor or the Time Dilation Factor in Special Relativity is not a constant for an inertial frame and it is angle dependent, and hence we follow the derivation in the Special Relativity with all its false assumptions. Mathematical and conceptual mistakes in Special Relativity will be considered later. The blindness to the reality in Special Relativity is clearly visible in the equation $\mathbf{d}'=\mathbf{d}+\mathbf{v}t'$ since observers cannot derail a train.

Einstein considered a beam of light orthogonal to the motion of a train traveling at speed v along the x-axis, where $\mathbf{y}'=\mathbf{y}+\mathbf{v}t'$. Here, we consider a beam of light at an angle θ to the direction of motion of a train traveling at speed v along the x-axis, where $\mathbf{d}'=\mathbf{d}+\mathbf{v}t'$. The graphical representation of $\mathbf{d}'=\mathbf{d}+\mathbf{v}t'$ in Special Relativity for a beam of light at an angle θ is given below in Figure-1.

A train is moving at speed v in the direction OQ.
A Beam of Light OP is released in the train.
POQ=θ.
OP=d, which is the distance light beam travels at angle θ in time delay t relative to passengers in the train if light is falsely assumed to be relative and behave as golf balls.
OP'=d′, which is the distance the light beam travels relative to observers outside the train if light is falsely assumed to be relative and behave as golf balls.

"What happens in reality is polar opposite to what happens in Special Relativity since light has no momentum and does not behave as golf balls. Light cannot behave as golf balls since light has no standstill existence. If a moving entity has momentum, that entity must be able to be brought to a halt by applying equal and opposite momentum. Light is not stoppable and hence cannot carry momentum."

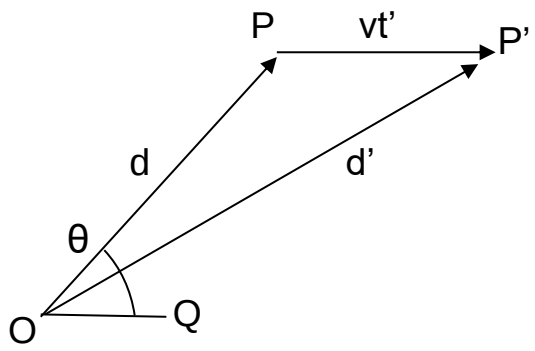

Figure-1: Einstein's Beam of Light in a Moving Train

Thought Experiment when the Light Beam is at an Angle θ to the Direction of the Train Under the False Assumption that Light Has Momentum.

According to Special Relativity, relative to external observers, the distance d′ traveled in relative time t′ is given by,

$$d'=ct' \quad (2.3)$$

A pole thrown vertically in a moving train does not turn at an angle relative to observers. A light beam traveling on path OP cannot turn onto path OP′ relative to external observers just as a pole traveling on path OP cannot turn onto path OP′ relative to external observers.

If an entity has momentum, that entity must be able to be brought to a stop by applying equal and opposite momentum. To bring an entity to a halt, that entity must have a stand still existence. An entity that has no standstill existence cannot be brought to a halt and hence cannot have momentum. Light has no standstill existence and hence light has no momentum and cannot behave as golf balls.

Both the path and the speed of light are constants that can only be altered by the change of medium. Light cannot be bent relative to observers. A light beam cannot tilt or turn at an angle relative to observers. As a result, Special Relativity is conceptually and mathematically false. No Special Relativity is required since the path of a moving object is unaltered relative to all observers, both internal and external, passengers and on-lookers.

Special Relativity uses its Time Dilation Factor or the Relativity Factor ɣ as if it is a constant for the entire inertial frame. To demonstrate that Einstein's Time Dilation Factor or the Relativity Factor ɣ is not a constant for the entire inertial frame in Special Relativity, we follow the same assumptions that Einstein used in Special Relativity even though those assumptions are invalid and false.

From triangle OPP′, we have,

$$(d')^2=(d\cos(\theta)+vt')^2+(d\sin(\theta))^2 \quad (2.4)$$

$$(d')^2=d^2+(vt')^2+(2dvt'\cos(\theta)) \quad (2.5)$$

Since d′/c=t′ and d/c=t, we have,

$$(t')^2=t^2+(v^2/c^2)(t')^2+(2v/c)tt'\cos(\theta)) \quad (2.6)$$

$$(1-v^2/c^2)(t')^2=t^2+(2v/c)tt'\cos(\theta)) \quad (2.7)$$

$$(t')^2=(1/(1-v^2/c^2))t^2+(2v/c(1-v^2/c^2))tt'\cos(\theta)) \quad (2.8)$$

Since $ɣ=1/(1-v^2/c^2)^{1/2}$, we have,

$$(t')^2=ɣ^2t^2+(2v/c)ɣ^2tt'\cos(\theta)) \quad (2.9)$$

$$(t'-(v/c)ɣ^2t\cos(\theta))^2=ɣ^2t^2+(v/c)^2ɣ^4t^2\cos^2(\theta) \quad (2.10)$$

$$(t'-(v/c)ɣ^2t\cos(\theta))^2=ɣ^2t^2[1+(v/c)^2ɣ^2\cos^2(\theta)] \quad (2.11)$$

$$(t'-(v/c)ɣ^2t\cos(\theta))^2=ɣ^4t^2[(1-(v/c)^2\sin^2(\theta)] \quad (2.12)$$

$$t'-(v/c)ɣ^2t\cos(\theta)=\pm ɣ^2[(1-(v/c)^2\sin^2(\theta)]^{1/2}t \quad (2.13)$$

$$t'=ɣ^2[(v/c)\cos(\theta)\pm[(1-(v/c)^2\sin^2(\theta)]^{1/2}t \quad (2.14)$$

Since t′>0,

$$t'=\eta(\theta)t \quad (2.15)$$

where,

$$\eta(\theta)=[1/(1-v^2/c^2)][(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (2.16)$$

Theorem: General Relativity Factor

In a moving frame in Special Relativity, the relative time t′ at an angle θ to the direction of motion of the frame is given by,

$$t'=\eta(\theta)t$$

where,

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

$$-\pi\le\theta\le\pi.$$

In Special Relativity, a vertical beam of light turns onto an angular path relative to external observers. A path of light cannot tilt or turn relative to observers, neither relative to passengers nor relative to external observers. If we throw a pole vertically, the pole does not tilt itself onto an angular path relative to external observers. A vertical pole remains vertical relative to passengers and external observers. As a result, the time t taken for a pole to travel distance d remains the same relative to both passengers and external observers. Time is not relative. The assumption that a vertical pole turns onto an angular path relative to external observers is one of the fundamental mistakes in Special Relativity.

Special Relativity is based on the fallacy that the path of light can bend relative to observers. Observers cannot bend light. The path of Light cannot bend relative to observers irrespective of whether the light is relative or not, irrespective of whether light is assumed to have momentum or not. The fallacy of Special Relativity is clear from the above Figure-1. A pole traveling on OP cannot tilt onto OP′ relative to observers.

A light burst is not anchored to a source. A light burst as a whole shifts by vt′ in the direction of the train relative to external observers since light is assumed to have a false momentum in Special Relativity, while the light burst moves vertically at speed c relative to all observers on the frame and outside the frame.

Since light has no momentum, what is actually happening in reality is that a light burst lags behind relative to passengers by the speed of the frame against the direction of the frame while the direction, path, and the speed of light on its path remain unaltered relative to all observers, both on the frame and outside the frame. A light burst is displaced on a reverse angular line relative to passengers while the path remains unaltered relative to all observers, both inside and outside. The angular line that the light burst shifted on is not the path of light. The path of light and the speed of light are unaltered relative to passengers on the moving frame and relative to external observers. As a result, the distance a light burst travels in time t is the same relative to both the passengers and the external observers, t′=t. There is no time dilation or distance dilation. Both path and speed of light are constants, unaffected by observer motion. The relative displacement of the path of a moving entity relative to observers does not alter its path. The path of a moving entity is unaltered relative to all observers, on the frame and out of the frame.

Lemma:

A light burst traveling on path OP cannot tilt onto path OP′ relative to all observers, both on the frame and off the frame. Once a light burst is released from

a source, the light burst is not anchored to the source. It is the light burst as a whole that shifts relative to observers, not just the leading tip of the light burst.

III. EINSTEIN'S RELATIVITY FACTOR ɣ FROM η(θ)

Einstein started Special Relativity by forcing a momentum on light so that light becomes relative and behaves as golf balls relative to observers. Although the path of light is a constant that can only be altered by the change of the medium, Einstein allowed the path of light to tilt or alter relative to observers. In Special Relativity light bends relative to observers. In Special Relativity although the speed of light is constant, the path of light is observer dependent. Since light has been given a false momentum in Special Relativity, a vertical light beam in a moving train travels vertically relative to passengers in the train while the path takes a forward angular path relative to external observers.

Special Relativity also makes another invalid assumption that one end of a light beam is always attached to the source. This assumption is false. Light cannot propagate if it is anchored to the source. An arrow cannot take flight if it is anchored to the bow. A source emits light in bursts. Once a light burst is released from a source, the light burst has no attachment to the source. It is this mistake of keeping one end of a light beam attached to a source that led to the false concept of time dilation. When an arrow is released vertically using a bow on a moving train, the arrow has no attachment to the bow. It is the whole arrow that has the speed of the train relative to an outside observer, not just the tip of the arrow.

Under these bizarre and false assumptions in Special Relativity, Einstein claimed that time is relative and time dilate by Relativity Factor ɣ relative to external observers even though he should have equally claimed that the height of train contracts by factor 1/ɣ and time remains unaltered. Einstein derived the time dilation t′=ɣt for a vertical beam of light in a train moving at constant speed and tried to force the relationship t′=ɣt everywhere on the train, which is impossible.

We have already shown that if time is assumed to be relative, time is directional and every direction has its own unique time dilation factor. The time dilation factor for angle θ to the direction of motion of the frame is η(θ), a function of θ and the speed of the frame v. The relative time t′ and relative distance d′ at an angle θ in Special Relativity are given by,

$$t'=\eta(\theta)t \quad (3.1)$$

$$d'=\eta(\theta)d \quad (3.2)$$

where,

$$\eta(\theta)=[1/(1-v^2/c^2)][(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (3.3)$$

We get Einstein's Relativity Factor ɣ when $\theta=\pm90^o$,

$$\gamma=[1/(1-v^2/c^2)][(v/c)\cos(90^o)+(1-(v^2/c^2)\sin^2 90^o)^{1/2}] \quad (3.4)$$

$$\gamma=[1/(1-v^2/c^2)]^{1/2} \quad (3.5)$$

Einstein's Relativity Factor ɣ is applicable only for $\theta=90^o$. Einstein's Relativity Factor ɣ does not apply for any other direction or when $\theta\neq\pm90^o$. Einstein's Relativity Factor ɣ is independent of the polarity of the speed of the frame, ±v. For any other direction, the relativity factor η(θ) is dependent on the polarity of the frame, ±v.

If we want to make the Relativity Factor independent of the polarity ±v, then we have to define the time as the average of the forward and the backward of a beam of light; that is exactly what Special Relativity has done. A theory based on the average forward and backward values is useless for real-time systems. Real-time systems do not work on average forward and backward time of a beam of light.

In Special Relativity, the relative time t′ and relative distance d′ are written as,

$$t'=\gamma t \quad (3.6)$$

$$d'=\gamma d \quad (3.7)$$

These two relationships are not general relationships that apply on an entire inertial frame. They apply only in the directions orthogonal to the direction of motion of the frame, $\theta=\pm90^o$. Einstein's Relativity Factor is only applicable on the lateral plane in Special Relativity.

IV. IF TIME IS RELATIVE, RELATIVE TIME WILL BE DIRECTIONAL

In Special Relativity, the relative time t′ and the relative distance d′ at any direction θ is given by,

$$t'=\eta(\theta)t \quad (4.1)$$

$$d'=\eta(\theta)d \quad (4.2)$$

where,

$$\eta(\theta)=[1/(1-v^2/c^2)][(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (4.3)$$

The relative time depends on the angle θ. There is no single angle independent relative time for an entire inertial frame. If time is relative, time will be directional. The directional motion cannot produce non-directional relative time if time is assumed to be relative. The relative time t′ also depends on the polarity of the speed of the frame ±v since the Relativity Factor η(θ) at an angle θ depends on the speed of the frame v. The relative time t′ for a given direction for the speed +v of the frame is not the same as the relative time t′ for the same direction for the speed -v of the frame. Time cannot be directional. Time cannot depend on the polarity of the frame speed ±v. Time cannot be relative. Special Relativity and its time dilation are false. Observers do not determine the time. The time it takes for earth to orbit the sun is observer independent. The time it takes for the earth to make one spin is independent of the observers.

V. FOR THE RELATIVITY FACTOR ɣ TO BE A CONSTANT IN A MOVING BODY, MOVING BODY MUST CONTRACT IN EVERY DIRECTION, NOT JUST IN THE DIRECTION OF MOTION

Special Relativity derived the Relativity Factor ɣ for the lateral plane orthogonal to the direction of motion of the frame and then forced ɣ on the direction of motion of the frame by redefining the time as the average of the forward and backward time of a beam

of light and forcing the length to contract by the factor 1/ɣ, and then go on to claim that the Relativity Factor ɣ is a constant for the entire inertial frame and it holds on the frame everywhere. We cannot make the Relativity Factor ɣ a constant that applies all over the inertial frame just by forcing it on the direction of motion of the frame. If we want to make the lateral plane Relativity Factor ɣ a constant on an entire inertial frame, we have force the Relativity Factor ɣ onto all the infinitely many directions.

If we want the Relativity Factor at any angle to be ɣ, then we have to force the direction dependent part of the Relativity Factor η(θ) onto the distance as a distance alteration with motion. For any angle θ, the Relativity Factor η(θ) is given by,

$$\eta(\theta)=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (5.1)$$

The Relative Distance d′ is given by,

$$d'=\eta(\theta)d \quad (5.2)$$

Substituting for η(θ), we have,

$$d'=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}]d \quad (5.3)$$

Let us allow the distance d to alter (or contract) so that,

$$d\leftarrow d/\gamma[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (5.4)$$

Then, we have,

$$d'=\gamma d \quad (5.5)$$

$$t'=\gamma t \quad (5.6)$$

For the lateral plane Relativity Factor ɣ to be the Relativity Factor of the entire frame, the distance at angle θ has to contract by the Contraction Factor □ given by,

$$\square=(1-v^2/c^2)^{1/2}/[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (5.7)$$

In Special Relativity, it is not just the length along the direction of motion of the frame that must contract, the length must contract at every angle. The length contraction factor at any angle θ is dependent on the angle θ, speed of the frame v, and polarity of the speed of the frame ±v. For the lateral plane Relativity Factor ɣ to be the Relativity Factor of the entire frame, the volume must contract, not just the length along the direction of motion of the frame.

The question is, why in the world do we want the make the Relativity Factor ɣ a constant for the entire frame? Why in the world do we want the time dilation relationship t′=ɣt to hold for a moving frame? Why do we want time to be relative, if we can avoid time being relative in Special Relativity in the first place? If we can allow the length to partially contract so that t′=ɣt hold on the entire frame, why don't we allow the length to contract so that the time is observer independent or absolute so that t′=t. You do not bring unnecessary time dilation t′=ɣt if we can avoid it and make t′=t by allowing moving body to contract in all directions in Special Relativity.

VI. SPECIAL RELATIVITY IN ABSOLUTE TIME

On a moving frame, at any angle θ, we have,

$$d'=\eta(\theta)d \quad (6.1)$$

$$t'=\eta(\theta)t \quad (6.2)$$

where,

$$\eta(\theta)=[1/(1-v^2/c^2)][(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (6.3)$$

Now, let us allow the length at angle θ to contract so that,

$$d\leftarrow d/\eta(\theta) \quad (6.4)$$

$$d\leftarrow\square d \quad (6.5)$$

where, the Contraction Factor □ is given by,

$$\square=1/\eta(\theta) \quad (6.6)$$

Then, we have,

$$d'=d \quad (6.7)$$

$$t'=t \quad (6.8)$$

In Special Relativity, if the distance at an angle θ contracts with motion by the factor □=1/η(θ), then, the time and distance will be frame independent, t′=t and d′=d. Clocks and Measuring Sticks will be universal in Special Relativity if the moving body contracts in all directions by the contraction factor □=1/η(θ).

Lemma:

Time in Special Relativity is absolute or frame independent if the volume of a moving object contracts in all directions by the contraction factor □=1/η(θ), -π≤θ≤π.

VII. AVERAGE FORWARD AND RETURN TIME AT AN ANGLE θ IN SPECIAL RELATIVITY

The relativity factor at any angle θ is given by,

$$\eta(\theta)=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (7.1)$$

The relative time at any angle θ in Special Relativity is given by,

$$t'=\eta(\theta)t \quad (7.2)$$

In the backward direction, $\theta+180^o$, we have,

$$t'=\eta(\theta+180^o)t \quad (7.3)$$

where,

$$\eta(\theta+180^o)=\gamma^2[(-v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (7.4)$$

The Relativity Factor η(θ) at angle θ is different from the Relativity Factor $\eta(\theta+180^o)$ at angle $\theta+180^o$ in the backward direction. As a result, the relative time in one direction is different from the relative time in the reverse direction. Relative time at any angle θ is directional. If time is relative, relative time is directional. This is expected since the motion is directional. Directional motion cannot generate non-directional relative time.

If time is defined as the average forward and backward return time of a beam of light, the average forward and backward Relativity Factor $\eta_{ave}(\theta)$ is given by,

$$\eta_{ave}(\theta)=(\eta(\theta)+\eta(\theta+180^o))/2 \quad (7.5)$$

Substituting for η(θ) and $\eta(\theta+180^o)$ from equations (7.1) and (7.4) , we have,

$$\eta_{ave}(\theta)=\gamma^2(1-(v^2/c^2)\sin^2\theta)^{1/2} \quad (7.6)$$

The average forward and backward Relativity Factor $\eta_{ave}(\theta)$ is independent of the polarity of the speed of the frame ±v. However, even the average forward and backward Relativity Factor $\eta_{ave}(\theta)$ depends on the angle θ. The dependence of the relative time on the angle is unavoidable in Special Relativity.

VIII. EINSTEIN'S SPECIAL RELATIVITY

In Special Relativity, Einstein obtained the Relativity Factor η(θ) for $\theta=90^o$, which is ɣ, and forced it in the direction of motion of the frame, $\theta=0^o$. He disregarded all the other directions even though each

direction at angle θ has its own distinct Relativity Factor η(θ). The forcing of ɣ in the direction $\theta=0^o$ does not make ɣ to hold in other directions. Einstein's Relativity Factor ɣ is given by,

$$ɣ=η(θ) \text{ for } \theta=90^o \text{ or } ɣ=η(90^o) \quad (8.1)$$

where,

$$η(θ)=ɣ^2[(v/c)\cos(θ)+(1-(v^2/c^2)\sin^2θ)^{1/2}] \quad (8.2)$$

For $\theta=0^o$, we have,

$$η(0^o)=ɣ^2(1+v/c) \quad (8.3)$$

$$η(0^o)≠ɣ \quad (8.4)$$

The Relativity Factor $η(0^o)$ in the direction of motion, $\theta=0^o$, is not the same as the Einstein's Relativity Factor ɣ, $\theta=90^o$.

For $\theta=180^o$, we have,

$$η(180^o)=ɣ^2(1-v/c) \quad (8.5)$$

$$η(180^o)≠ɣ \quad (8.6)$$

The Relativity Factor $η(180^o)$ in the direction of motion, $\theta=180^o$, is not the same as the Einstein's Relativity Factor ɣ, $\theta=90^o$. The Relativity Factor in the direction of motion of the frame $η(0^o)$ is not the same as the Relativity Factor against the direction of motion of the frame $η(180^o)$,

$$η(0^o)≠η(180^o)≠ɣ \quad (8.7)$$

If light is falsely assumed to have momentum, the relative time t_f' in the direction of motion of the frame to travel a distance is not the same as the relative time t_b' against the direction of motion of the frame to travel the same distance,

The forward path relative time t_f' is given by,

$$t_f'=ɣ^2(1+v/c)t \quad (8.8)$$

The backward path relative time t_b' is given by,

$$t_b'=ɣ^2(1-v/c)t \quad (8.9)$$

If time is relative, relative time in the forward path is different from the relative time in the backward path. Although, Einstein wanted to force his Relativity Factor ɣ on the direction of motion of the frame, it was not possible since the relativity factor depends on the polarity of the speed of the frame.

To overcome this inconsistency, Einstein defined the relative time in Special Relativity as the average forward and return time of a beam of light,

$$t'(ave)=(t_f'+t_b')/2 \quad (8.10)$$

Substituting for t_f' and t_b' from equations (8.8) and (8.9), we have,

$$t'(ave)=ɣ^2t \quad (8.11)$$

$$x'(ave)=ɣ^2x \quad (8.12)$$

In Special Relativity, Einstein wanted to maintain the lateral plane time dilation relationship t′=ɣt on the line of the motion of the frame. He realized that he could achieve that if he allows the length to contract so that he could replace x by x/ɣ,

$$x←x/ɣ \quad (8.13)$$

When x is replaced by x/ɣ, the time t must also be replaced by t/ɣ.

When x and t are replaced by x/ɣ and t/ɣ, we have,

$$t'(ave)=ɣt \quad (8.14)$$

$$x'(ave)=ɣx \quad (8.15)$$

By proclaiming that the average forward and return length contracts with motion by the factor 1/ɣ and redefining the time as the average forward and return time of a beam of light, Einstein could force relative time relationship t′=ɣt that is only applicable for the lateral plane (y,z) onto the direction of motion, x-axis. So, in Special Relativity, t′=ɣt and d′=ɣd are only valid for $\theta=\pm90^o$ and $\theta=0^o,\pm180^o$. The relative time relationship t′=ɣt does not hold for any other direction θ, even though there are infinitely many other directions are there.

In Special Relativity, the relative time and relative distance relationships t′=ɣt and d′=ɣd refer to the average forward and return time and the average forward and return distance, not the one-way time and one-way distance. Special Relativity is not applicable for one-way motion.

The concocted average forward and reverse length contraction in Special Relativity is an unrealistic trick Einstein employed to force the time dilation relationship on the lateral plane (y,z) in the direction of motion, x-axis. Real-time systems do not run on average values. Real-time systems run on instantaneous time. The average has to be calculated off-line. A theory based on average forward and return time and average forward and return distance is useless for real-time systems.

The relative time t′=ɣt in Special Relativity applies only for the lateral plane (y,z), for the directions orthogonal to the direction of motion of the frame, x-axis. Einstein forced the relative time t′(ave)=ɣt on the direction of motion of the frame, x-axis, not the instantaneous relative time t′=ɣt. The instantaneous relative time t′=ɣt does not apply any direction outside the lateral plane. The average relative time t′(ave) and average relative distance x′(ave) relationships, t′(ave)=ɣt and x′(ave)=ɣx, are not applicable for $\theta≠\pm90^o, 0^o, \pm180^o$.

It is not possible to claim that the relative time on a moving frame is given by t′=ɣt unless the relationship t′=ɣt holds for all the infinitely many directions. The relationship t′=ɣt does not hold for all the directions. It only holds for $\theta=\pm90^o$. It is only the average forward and backward relationship t′(ave)=ɣt that holds for $\theta=\pm90^o, 0^o, \pm180^o$. The average forward and backward relationship t′(ave)=ɣt do not hold for all the directions on a moving frame.

"Einstein's time dilation relationship t′=ɣt is not a constant relationship for the entire frame. Einstein's Relativity Factor ɣ is a not a constant for the entire frame. It applies only for $\theta=\pm90^o$."

a). **How to Make** t′(ave)=ɣt **Direction Independent and Applicable All Over a Moving Frame**

The average forward and return relative time t′(ave) and the average forward and return relative distance d′(ave) at an angle θ are given by,

$$t'(ave)=η_{ave}(θ)t \quad (8.1.1)$$

$$d'(ave)=\eta_{ave}(\theta)d \quad (8.1.2)$$

where,

$$\eta_{ave}(\theta)=\gamma^2(1-(v^2/c^2)\sin^2\theta)^{1/2} \quad (8.1.3)$$

If we want to claim that the relationship $t'(ave)=\gamma t$ holds all over on an inertial frame independent of direction θ, all we have to do is allow the distance d at any angle θ to contract by the factor □(θ) with motion so that,

$$d\leftarrow(\theta)d \quad (8.1.4)$$

where,

$$(\theta)=(\gamma/\eta_{ave}(\theta)) \quad (8.1.5)$$

$$(\theta)=1/\gamma(1-(v^2/c^2)\sin^2\theta)^{1/2} \quad (8.1.6)$$

$$(\theta)=[(1-(v^2/c^2)/(1-(v^2/c^2)\sin^2\theta)]^{1/2} \quad (8.1.7)$$

Since □=1 for $\theta=\pm90^o$, □<1 for $\theta\neq\pm90^o$, □ is a contraction factor.

When d is replaced by (θ)d and t is replaced by □(θ)t, in equations (8.1.1) and (8.1.2), we have,

$$t'(ave)=\gamma t \quad (8.1.8)$$

$$d'(ave)=\gamma d \quad (8.1.9)$$

If the distance at any angle θ contracts by the contraction factor □(θ) for all θ, then, we can say that the average forward and return time on an inertial frame is given by the relationship $t'(ave)=\gamma t$. The distance contraction factor at angle θ is given by,

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

The relationship $t'(ave)=\gamma t$ is not applicable for one-way motion.

For $\theta=\pm90^o$, □=1. There is no change in distance for $\theta=\pm90^o$.

For $\theta=0^o$ and $\pm180^o$, the contraction factor is □=1/γ or $□=(1-v^2/c^2)^{1/2}$.

Lemma:

The average forward and return relative time relationship $t'(ave)=\gamma t$ in Special Relativity can hold all over on an inertial frame if the average forward and reverse distance is allowed to contract by the Contraction Factor □(θ), where,

$(\theta)=[(1-(v^2/c^2)/(1-(v^2/c^2)\sin^2\theta)]^{1/2}$, ∀θ.

Special Relativity applies for average forward and reverse relative time and average forward and reverse relative distance. However, now we have the Relativity Factor η(θ) for any direction θ, we can force the instantaneous relative time relationship $t'=\gamma t$ to hold all over the inertial frame independent of the direction θ. That is the beauty of having the Relativity Factor for an angle θ.

Special Relativity, which is based on the average forward and return relative time, is incompatible with clocks since clocks do not run on the average forward and return time of a beam of light. Special Relativity is also not applicable to real-time systems since real-time systems run on instantaneous one-way time. Real-time systems do not run on average forward and return time of a beam of light. The average forward and return time is available off-line. The average forward and return time have to be calculated; it is not available to be measured. Universe does not run on average forward and return time of a beam of light. Real-time system dynamics cannot be modeled by Special Relativity. Special Relativity is useless for real-time dynamics.

b). **How to Make Instantaneous Relative Time $t'=\gamma t$ Direction Independent So that It is Applicable on an Entire Moving Frame**

The relativity factor at any angle θ is given by,

$$\eta(\theta)=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (8.2.1)$$

The relative time t′ and relative distance d′ at any angle θ in Special Relativity is given by,

$$t'=\eta(\theta)t \quad (8.2.2)$$

$$d'=\eta(\theta)d \quad (8.2.3)$$

Now, we want to make the relationships $t'=\gamma t$ and $d'=\eta(\theta)d$ to hold all over an inertial frame irrespective of the angle θ. To make that happen, all we have to do is allow the distance d to contract so that,

$$d\leftarrow(\theta)d \quad (8.2.4)$$

where,

$$(\theta)=\gamma/\eta(\theta) \quad (8.2.5)$$

$$(\theta)=1/\gamma[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (8.2.6)$$

$$□(\theta)=(1-(v^2/c^2)^{1/2}/[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (8.2.7)$$

Here, the distance Contraction Factor (θ) depends on the polarity of the speed of the inertial frame ±v. The distance Contraction Factor (θ) also depends on the polarity of the angle, ±θ.

When d is replaced by (θ)d and t is replaced by □(θ)t, from equations (8.2.2) and (8.2.3), we have,

$$t'=\gamma t \quad (8.2.8)$$

$$d'=\gamma d \quad (8.2.9)$$

When we allow the distance at angle θ to contract by the factor □(θ), the Relativity Factor γ derived for the lateral plane orthogonal to the direction of motion of the frame will also be valid for the entire frame and the instantaneous relative time on the entire frame is given by $t'=\gamma t$ as Einstein wanted. The relationship $t'=\gamma t$ applies for the instantaneous time if the distance is allowed to contract at angle θ by the Contraction Factor (θ) given by,

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

Lemma:

The instantaneous relative time relationship $t'=\gamma t$ in Special Relativity can hold for an entire inertial frame if the instantaneous distance is allowed to contract by the Contraction Factor □(θ), where,

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

However, we cannot refrain from asking the question: why do we want to go through all these troubles to force the relationship $t'=\gamma t$ on the entire frame? No reason! What is so special about $t'=\gamma t$? Nothing! If we can force the relationship $t'=\gamma t$ over an entire inertial frame, we should be able to easily force the relationship $t'=t$ over an entire inertial frame making time absolute, observer independent in Special Relativity. It is possible to make the time absolute in Special Relativity.

c). **Special Relativity in Absolute Time**, $t'=t$

The relativity factor at any angle θ is given by,

$$\eta(\theta)=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (8.3.1)$$

The instantaneous relative time t′ and instantaneous

relative distance d′ at any angle θ in Special Relativity is given by,

$$t'=\eta(\theta)t \quad (8.3.2)$$

$$d'=\eta(\theta)d \quad (8.3.3)$$

If we allow the distance at an angle θ to contract so that,

$$d\leftarrow(\theta)d \quad (8.3.4)$$

where,

$$(\theta)=1/\eta(\theta) \quad (8.3.5)$$

$$(\theta)=1/\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (8.3.6)$$

$$(\theta)=(1-v^2/c^2)/[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (8.3.7)$$

When d is replaced by (θ)d and t is replaced by □(θ)t, in equations (8.3.2) and (8.3.3), we have,

$$t'=t \quad (8.2.8)$$

$$d'=d \quad (8.2.9)$$

If the distance at angle θ contracts by the Contraction Factor (θ), where,

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

then, the instantaneous relative time will be independent of the frame of reference, and hence time will be absolute, t′=t.

Lemma:

The instantaneous relative time in Special Relativity can be frame independent or absolute, if the volume of a moving object is allowed to contract in all directions by the Contraction Factor □(θ), ∀θ where,

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

IX. THERE IS NOTHING SPECIAL ABOUT EINSTEIN'S RELATIVITY FACTOR γ

If time is assumed to be relative as Special Relativity does, time is directional and the relative time t′ at any angle θ is given by,

$$t'=\eta(\theta)t \quad (9.1)$$

The relative distance d′ is given by,

$$d'=\eta(\theta)d \quad (9.2)$$

where,

$$\eta(\theta)=(1/(1-v^2/c^2))[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (9.3)$$

Einstein's Relativity Factor is one out of infinitely many. Einstein's Relativity Factor γ is η(θ) for θ=±90°. The γ is the smallest Relativity Factor out of infinitely many Relativity Factors on a moving frame. The largest Relativity Factor is γ^2 when θ=0° or θ=±180° The bounds of η(θ) is given by,

$$\gamma\leq\eta(\theta)\leq\gamma^2 \quad (9.4)$$

The relative time depends on the angle θ in Special Relativity. The Relativity Factor on an inertial frame is not a constant for the entire frame. The minimum Relativity Factor is on the lateral plane where θ=±90°. The maximum Relativity Factor is in line with the motion of the frame where θ=0° or θ=±180°. Einstein Relativity Factor γ is the minimum Relativity Factor on the lateral plane orthogonal to the direction of motion of an inertial frame.

Einstein derived the time dilation factor or Relativity Factor γ for the lateral plane orthogonal to the direction of motion of an inertial frame. Then, by redefining the time as the average forward and return time of a beam of light and forcing the average forward and return length in the direction of motion to contract, Einstein forced the lateral plane Relativity Factor for θ=±90° onto the direction of motion of the frame for θ=0° or θ=±180°.

However, that does not change the fact that relative times for the rest of the directions are given by t′=η(θ)t. We cannot make Einstein Relativity Factor γ a constant for an entire inertial frame simply by enforcing it on the direction of motion of the frame for θ=0° or θ=±180°. Every direction θ has its own unique Time Dilation Factor or a Relativity Factor. Every direction θ is equally special, not just the direction where θ=±90°.

There is no special reason to force the Relativity Factor for θ=±90° onto the direction of motion of the frame where θ=0° or θ=±180°. We cannot make the Relativity Factor γ for θ=±90° the Relativity Factor for the entire frame for any direction θ just by forcing it on the direction of motion of the frame where θ=0° or θ=±180°. If we want to force the Relativity Factor γ as a constant for the entire inertial frame, then we have to force it on all the directions θ by allowing the distance in the direction θ to contract by the factor γ/η(θ). If we can do that, the elephant in the room is; why do we want to make the Relativity Factor γ the Relativity Factor for the entire frame? No reason!

Why don't we make time absolute or frame independent by allowing the distance at angle θ to contract by the factor 1/η(θ) for all θ. In other words, by allowing the volume to contract by the Contraction Factor □(θ)=1/η(θ) for all θ, we can make time absolute in Special Relativity, t′=t. Time can be made absolute in Special Relativity by allowing the volume of a moving body to contract in all directions by the Contraction Factor □(θ)=1/η(θ). Although this can be done in Special Relativity, it is not necessary since Special Relativity is utter nonsense. Nature does not require Special Relativity. Time is observer independent naturally. No Special Relativity is required.

Light travels on a fixed path at fixed speed that can only be altered by the change of medium and hence the speed and the path of light are observer independent naturally. Observers cannot alter the path of light and the path of a moving object. Observers cannot derail a train. Observers cannot derail light. Einstein's Special Relativity derailed light. A burst of light cannot alter its path relative to observers. It is only that the path as a whole can shift or displace relative to observers since the distance to the path changes with the motion of observers. No Special Relativity is required [4,6].

IX. TIME IS NOT RELATIVE AND TIME CANNOT BE RELATIVE

Time is a definition. We define a time interval, a day or a year. We design clocks to break down the time interval, a day or a year, into finer intervals. A day or year is independent of observers. A day or year is not determined by the clocks. We do not age by the clocks that we engineer.

Time must be non-directional. As we have seen, if

time is relative, time will be directional. The directional motion cannot generate non-directional time. The vertical light beam in a moving train thought experiment Einstein used to show time is relative is fundamentally incorrect. A light burst is a massless and momentumless arrow.

Light has no momentum. Any entity with a momentum must be able to be brought to a complete halt or stop by applying equal and opposite momentum. Any entity with momentum must respond to a force. A force has no effect on light. You cannot even apply a force on light. Light has no standstill existence and hence cannot have momentum. Any entity with momentum cannot propagate. There is no massless momentum. The path of light cannot be altered relative to observers. In fact, the path of any moving entity cannot be altered relative to observers. Observers cannot derail a train.

The collision of entities with momentum generates temperature. No matter how much light is there in a vacuum, a vacuum has no temperature. Light has no temperature. Light has no energy. Light has no entropy. Light is useless without charge particles. What light has is electromagnetic potential. Electromagnetic potential cannot be converted to energy in the absence of charge particles. If light had had momentum, energy, temperature, space would not have been such a cold place.

Light has no momentum. Irrespective of whether light has momentum or not, the path and the speed of light on its path are constants that can only be altered by the change of medium. If a fake momentum is forced upon light hypothetically as Einstein did in Special Relativity, the path of light in a train is displaced in the direction of motion of the train relative to external observers while the path of light is unaltered relative to all observers. In actual fact, since light has no momentum, the path of a light burst in a train is lagged behind relative to passengers on the train while the path of light remains unaltered relative to all observers. Observers cannot derail a train [4,6].

We can see where Einstein's thought experiment went wrong by considering an Arrow fired vertically using a bow from the bottom of a moving train and a light burst emitted by a source from the bottom of a moving train. A light burst is a massless arrow.

a). **A Vertically Traveling Arrow in a Moving Train**

Let us consider a train traveling at constant speed v. Assume that the train has a passenger with a bow and arrow. The passenger fires an arrow vertically at the speed u, where u is a function of time, u=f(t). The speed of the arrow does not matter. The arrow can be at constant speed or at an acceleration.

Figure-2 shows the motion of a vertical arrow in a moving train relative to passengers and external observers.

OP is the arrow relative to passengers.

O'P' is the arrow relative to external observers.

v is the speed of the train.

OQ is the forward angular line along which the arrow O'P' is shifted relative to external observers while traveling vertically at speed u.

"*The angular line OQ is NOT the path of the arrow relative to external observers*."

O(t)O'(t)(horizontal)=vt, which is the displacement of the arrow in the direction of motion of the train relative to external observers at time t.

O(0)O'(t)(vertical) is the vertical distance the arrow travels vertically at time delay t; it is independent of the speed of the frame v. The vertical distance an arrow travels is independent of observers.

"*The direction of motion of the Arrow is unaltered relative to observers*."

Lemma:

The displacement of an arrow relative to observers does not alter the path of the arrow.

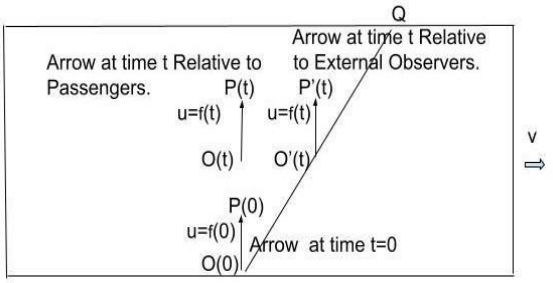

Figure-2: The path of a vertically moving arrow at speed u=f(t) in a train relative to Passengers (OP) and relative to External Observers (O'P').

The displacement of the Arrow relative to external observers (O'P') at time t is towards the direction of motion of the frame by horizontal distance vt. The vertical motion of the Arrow remains unaltered.

It does not matter what the speed of the train is, the arrow has vertical speed u=f(t) at any time t relative to both passengers as well as relative to external observers.

Since the arrow has momentum, Arrow also has a horizontal displacement in the direction of motion of the train at speed v relative to external observers. Arrow travels at speed u=f(t) vertically unaltered relative to external observers while having a horizontal displacement in the direction of the train at speed v. The horizontal displacement of the Arrow does not affect the path and the speed of the arrow.

Irrespective of the horizontal displacement of the Arrow in the direction of the train at speed v, relative to external observers, the Arrow remains vertical and travels at speed u=f(t). Relative to passengers on the train, the Arrow travels vertically at speed u=f(t); there is no displacement of the arrow in the direction of the train relative to passengers. The Arrow travels vertically at the same speed u=f(t) unaltered relative to both passengers and external observers. As a result, the time taken for the Arrow to hit the ceiling will be the same for both passengers on the train and external observers, t′=t.

The vertical speed of the arrow relative to the passengers is the same as the vertical speed of the arrow relative to external observers. The distance arrow travels vertically until it hits the ceiling is the same relative to passengers and external observers, d′=d. The time taken for the arrow to hit the ceiling will be the same relative to the passengers and external observers, t′=t. The distance is independent of observers. Time is independent of the observers. The mass of an object is independent of observers.

b). **A Vertically Traveling Light Burst Under the False Assumption that Light Has a Momentum**.

Now, instead of an Arrow, let us consider a light burst. We replace the arrow with a light burst. A light burst is a massless arrow. Assume we force upon a fake momentum on light just as Einstein did in Special Relativity. If light is given a fake momentum, the scenario is exactly the same as the scenario of an Arrow, no difference.

Figure-3 shows the motion of a vertical Light Burst under the false assumption that light is relative in a moving train relative to passengers and external observers.

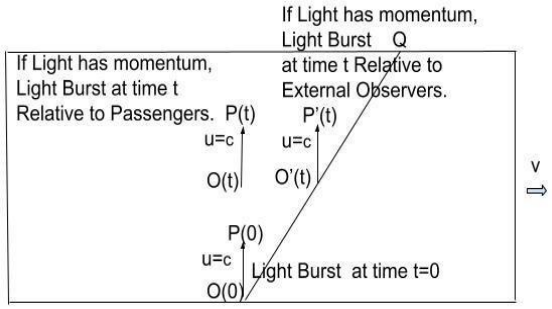

Figure-3: If light is forced upon a fake momentum, the path of a vertically moving Light Burst in a train relative to passengers (OP) and relative to external observers (O'P').

"*The direction of motion of the Light Burst is unaltered relative to observers*."

"OQ is the forward angular line along which the Light Burst O'P' is shifted relative to external observers while traveling vertically at speed u=c."

OP is the arrow relative to passengers.
O'P' is the arrow relative to external observers.
v is the speed of the train.

O(t)O'(t)(horizontal)=vt, which is the displacement of the Light Burst in the direction of motion of the train relative to external observers under the false assumption that light has momentum.

O(0)O'(t)(vertical)=ct, which is the vertical distance the light burst travels at speed c vertically at time delay t; it is independent of the speed of the frame v. The vertical distance a light burst travels is independent of observers.

Lemma:

The displacement of a light burst relative to observers does not alter the path of light.

"*The angular line OQ is NOT the path of the Light Burst relative to external observers*."

Light Burst does not propagate along the line OQ relative to observers. A vertical Light Burst always propagates vertically relative to any observer, both inside and outside. Observers cannot derail light.

"Einstein considered the line OQ to be the path of light relative to external observers in Special Relativity. That is a fundamental mistake in Special Relativity. OQ is not the path of light relative to external observers. OQ is the line on which the vertical light burst shifts relative to external observers."

The displacement of the Light Burst relative to external observers (O'P') at time t is towards the direction of motion of the frame by horizontal distance vt since light is falsely assumed to have momentum. The vertical motion of the Arrow remains unaltered.

The light burst travels vertically at the speed c relative to external observers while having a horizontal displacement at speed v in the direction of the train. Horizontal displacement of the light burst relative to an external observer does not alter the path of the light burst or the speed of the light burst on its path. The vertical speed of the light burst remains at c relative to both passengers and external observers. The distance the light burst travels to hit the ceiling will be the same for both passengers on the train and the external observers. The time taken for the light burst to hit the ceiling will be the same for both passengers and external observers, t′=t.

There is no time dilation or contraction relative to observers. Time is observer independent, t′=t. Distance is observer independent, d′=d. Mass is observer independent, m′=m. Energy is observer independent. A mass does not have rest energy, $E\neq mc^2$. In Special Relativity, the so-called rest energy is imaginary, $E=jmc^2$. An object of mass at rest has no kinetic energy. Rest energy is an oxymoron. An object of mass cannot have speed c relative to light since light is not relative. If $p=\gamma mv$ and $E=\gamma mc^2$ as it is the case with Special Relativity, then E is not real, E is not unique, and E is given by $E=pc\pm jmc^2$. In Special Relativity energy is not real [10]. Energy must be real. Energy must be unique. Energy relationship is Special Relativity is meaningless. Special Relativity is not just invalid, it is utter nonsense.

Lemma:

The speed of light has nothing to do with the energy of a mass unless the mass travels at speed c.

Lemma:

Light has no momentum. Light cannot be forced upon a momentum even hypothetically since light has no standstill existence. The massless has no momentum.

c). **A vertically Traveling Light Burst in a Moving Train Since Light Has No Momentum**.

Light has no momentum. Light cannot have momentum since light has no standstill existence. If an entity has momentum, that entity must be able to be brought by applying an equal and opposite momentum. For that to happen, the entity must be stoppable. Any entity that has no standstill existence is not stoppable. Light has no stand still existence and hence light cannot carry momentum. Light has no momentum.

Figure-4 shows the motion of a vertical Light Burst (without the false assumption that light has momentum) in a moving train relative to passengers and external observers.

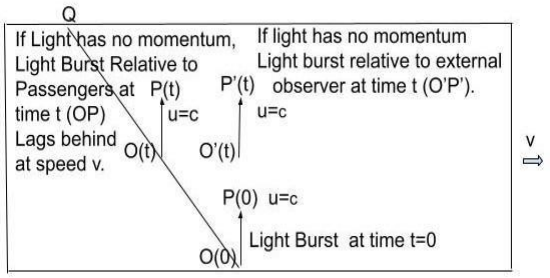

Figure-4: The path of a vertically moving Light Burst in a train relative to passengers (OP) and relative to external observers (O'P') since light has no momentum.

OP is the arrow relative to passengers.
O'P' is the arrow relative to external observers.
v is the speed of the train.

"*The direction of motion of the Light Burst is unaltered relative to all observers*."

The Light Burst does not propagate on the line OQ. A vertical Light Burst always propagates vertically relative to any observer, both inside and outside.

OQ is the reverse angular line along which the Light Burst OP is shifted upon relative to the passengers on the train while traveling vertically at speed u=c.

"*The angular line OQ is not the path of the Light Burst relative to observers*."

"The displacement of the Light Burst relative to passengers on the train (OP) at time t is against the direction of the frame by horizontal distance -vt since light has no momentum. Train leaves the light burst (OP) behind by the distance -vt since light has no momentum. The vertical motion of the light burst, which is a massless and momentumless arrow, remains unaltered."

O'(t)O(t)(horizontal)=-vt, which is the displacement of the Light Burst against the direction of motion of the train relative to passengers on the train since light has no momentum.

O(0)O'(t)(vertical)=ct, which is the vertical distance the light burst travels vertically at constant speed c in time delay t; it is independent of the speed of the frame v. The vertical distance a light burst travels is independent of all observers, both on the train and off the train.

Since light has no momentum, a vertical light burst in a train takes a vertical path relative to external observers. Relative to external observers, a vertical light burst travels vertically without horizontal displacement at the speed of the train in the direction of the train. However, a vertical light burst lags behind at speed -v relative to passengers since light has no momentum. The light burst has a horizontal displacement against the direction of motion of the train relative to passengers on the train. The vertical speed of the light burst remains unaltered relative to both passengers and external observers. The distance the Light Burst has to travel to hit the ceiling is the same relative to both passengers and external observers. The time taken for a vertically traveling Light Burst to hit the ceiling is the same relative to passengers as well as relative to external observers. The distance is not relative. Time is not relative, t′=t.

The time taken for a light burst in a train in any direction to travel a given distance is the same relative to all the observers since the path and the speed of light on its path are unaltered relative to observers. Relative to observers, all that is there is a relative path displacement, not a path bending, not a path tilting. The relative path displacement relative to observers does not alter the path of a light burst. The path displacement relative to observers does not alter the speed of the light burst on its path.

Lemma:

Time is observer independent, t′=t. If a light burst is released in a train, what takes place relative to passengers on the train is a path displacement, not a bending of the path. The relative displacement of the path does not alter the time it takes for a light burst to hit the ceiling.

Corollary:

The relative displacement of a moving entity relative to observers does not alter the path of the moving entity and the speed of the entity on its path.

Lemma:

The distance a light burst travels on its path at any given time delay is independent of observers irrespective of whether light is assumed to have

momentum or not.

d) **A Light Burst in a Train and an Arrow in a Train are Similar but Polar Opposite Since Light Has No Momentum and an Arrow Has Momentum**

A light burst is no different from an arrow except that light burst has no momentum and an Arrow has momentum. When a passenger in a train fires a light burst instead of an arrow, it is only the relative horizontal displacement that differs. In the case of an arrow, horizontal displacement is relative to external observers. In the case of a light burst, the horizontal displacement is relative to passengers.

Once a light burst is out of a source, it has no attachment to the source just as an arrow has no attachment to the bow that fired the arrow. The tail end of a light burst is not attached to the source just as the tail end of an arrow is not attached to the bow that fired the arrow. An arrow cannot leave the bow if the tail end of the arrow is attached to the bow. Similarly, a light burst cannot propagate if the tail end of the light burst is attached to the source just as an arrow cannot take flight if the tail end of the arrow is attached to the bow that fired the arrow.

It is the whole arrow that has the speed of the train in the direction of the train, not just the tip of the arrow. Both the tip and the tail end of the arrow have the speed of the train. Although there is a displacement of the arrow relative to external observers, the path of the arrow is unaltered relative to passengers as well as observers. A vertically fired Arrow remains vertical while it shifts on an angular line relative to external observers since the arrow has momentum in the direction of the train in this case.

Relative to passengers, a vertically fired arrow in a train travels vertically. There is no displacement of the arrow in the direction of the train relative to the passengers on the train. It does not matter what the speed of the train is, it does not matter whether the arrow is traveling at constant speed or at an acceleration, relative to both passengers and external observers, the arrow travels on the same path the same distance at the same speed and hits the ceiling at the same time. There is no time dilation or distance dilation relative to external observers. There is no time contraction or distance contraction relative to external observers.

Scenario of a Light Burst differs from the scenario of an Arrow only for the fact that a Light Burst has no momentum and no force can act upon light whereas an arrow has momentum and a force can act upon an Arrow. Since a Light Burst has no momentum, a Light Burst lags behind relative to passengers on the train. The lagging of a Light Burst relative to passengers on a train does not affect the motion of light burst on its path. The path of a light burst is unaltered relative to all observers. The displacement of the path of a moving entity relative to observers does not alter the path of the moving entity. Speed of a light burst on its path is unaltered relative to all observers.

A vertically fired light burst in a train travels vertically while shifting on a reverse angular line relative to passengers on the train if the train travels at constant speed. An arrow travels vertically while shifting on a forward angular line relative to external observers if the train travels at constant speed. A light burst travels vertically relative to external observers while an arrow travels vertically relative to passengers on the train. The behavior of an arrow and the behavior of a burst of light are polar opposite since light has no momentum, and light cannot be forced upon a momentum even hypothetically.

Every inertial frame is a stationary frame for an object of mass whereas for light every inertial frame is not a stationary frame. The only stationary frame for light is where light naturally propagates, the space. Maxwell equations for light cannot be transformed onto an inertial frame uniquely. Light does not propagate relative to inertial frames. 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 a good indication that light propagates in space.

Lemma:

The path of a moving entity is observer independent. The speed of an entity on its path is observer independent. The travel time of an entity on its path is observer independent. The travel time of a light burst is observer independent. The mass of an object is observer independent.

The motion of a mass has nothing to do with the speed of light c. The motion of a mass is independent of the speed of light. The energy of a moving object of mass has nothing to do with the speed of light. The speed of an object of mass is not limited by the speed of light.

Lemma:

Every inertial frame is NOT a stationary frame for light. Every inertial frame is a stationary frame only for an object of mass.

X. GALILEO RELATIVITY IS INCORRECT; THE PATH OF AN OBJECT CANNOT BE ALTERED RELATIVE TO OBSERVERS

Lemma:

Galileo-Newton Relativity is incorrect. Observers cannot derail a train. Galileo-Newton Relativity derails a train relative to observers.

Galileo-Newton relativity is shown in Figure-5. In Galileo-Newton Relativity, if a train-A travels at velocity **u** and train-B travels at velocity **v**, the relative velocity **w** of train-A relative to passengers on train-B is given by simple vector addition **w**=**u**-**v**.

Lemma:

There is No Train Track in the Direction of Vector **w** for Galileo-Newton Relativity to be Valid. A train must be on its track relative to all observers.

Relative velocity **w** cannot be given by **w**=**u**-**v** if **u**

and **v** are not parallel since there is no train track in the direction of **w**, **w≠u-v**. A moving train must be on its track relative to any observer. The relative speed **w** of train-A relative to passenger on train-B cannot be expressed by the relationship **w=u-v** unless **u** and **v** are parallel. When **u** and **v** are parallel, even though they appear to be given by the vector addition, the actual mechanism of relativity behind the scene is not the vector addition. Even when **u** and **v** are parallel, it is the track itself as a whole that is displaced by the speed of the Train-B against the motion of the train-B relative to observers in Train-B while the Track-A and the speed of the Train-A on its track remains unaltered.

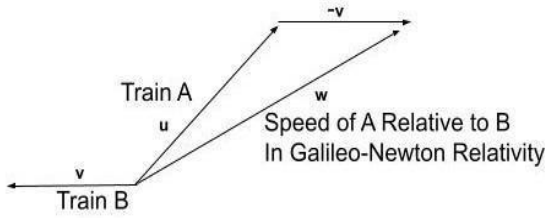

Figure-5: Velocity of Train-A Relative to Train-B in Galileo-Newton Relativity, **w=u-v**.

It is the train track that is displaced relative to observers against the motion of observers while the train track and speed of the train on its track remains unaltered. Irrespective of whether the moving entity is an object or a wave burst, the path of a moving entity and the speed of the entity on its path are observer independent. It is the path that is displaced against the motion of observers while the speed and the direction of the moving entity on its path remain unaltered. A moving observer cannot change the speed of a train on its track relative to the observer. We cannot change the speed of a train on its track by running.

The time it takes for a train to travel a given distance on its path is observer independent. The distance a train travels on its track in a given time delay is observer independent. A train track cannot bend relative to observers. A light cannot bend relative to observers. A gravitational object cannot bend light in a vacuum. The path and the speed of light cannot be relative since the path and the speed of light are constants that can only be altered by the change of the medium.

Lemma:

Observers cannot bend light. Observers cannot derail a train. Vehicles do not end up in ditches relative to observers. Gravity cannot bend light in a vacuum.

Lemma:

Observers cannot derail light. Einstein derailed light in Special Relativity. Special Relativity is not science; it is utter nonsense.

XI. MAXWELL EQUATIONS FOR PROPAGATION OF LIGHT ARE NOT TRANSFORMABLE TO AN INERTIAL FRAME USING LORENTZ TRANSFORM; LORENTZ TRANSFORM DOES NOT EXIST

The basic equation for transforming Maxwell equations onto an inertial frame is $x'=x-vt$ and the fact that $x'=ct'$ and $x=ct$. The relative time equation $t'=t-vx/c^2$ is redundant. The relative time equation $t'=t-vx/c^2$ is not required for the transformation of Maxwell equations; it does not add any new information. The relative time equation $t'=t-vx/c^2$ can be derived from $x'=x-vt$ using the fact that $x'=ct'$ and $x=ct$. The General Transform is given by $x'=\eta(x-vt)$, where the transformation factor η is not predefined and it emerges from the transformation itself since the transformation has to maintain the form of the Maxwell equations [6].

However, Einstein predefined the Transformation Factor η to be the Relativity Factor $\eta(90^o)=\gamma$ from Special Relativity. Einstein got lucky since the Proper Transformation Factor η that transforms Maxwell equations onto an inertial frame happens to be $\eta(0^o)=\gamma^2$. He could show that his choice of Relativity Factor as the Transformation Factor in the Lorentz Transform works by multiplying all the equations by a redundant factor γ; in fact, that is exactly what Einstein did. Einstein's transformation of Maxwell equations using the Lorentz Transform is a pure deception.

Einstein's deception is buried in so much rhetoric it went unnoticed for more than a century. The predefinition of the Transformation Factor $\eta=\gamma$ in the Lorentz Transform made the transformation not unique and the relative electromagnetic fields dependent on the Relativity Factor γ. The Lorentz Transform is not unique [6]. The mathematical beauty of the transformation preempted any real suspicion and prevented others from seeing what was rotten inside in Einstein's transformation of Maxwell equations onto an inertial frame.

Einstein's transformation of Maxwell equations onto an inertial frame using the Lorentz Transform is either a cunning mathematical manipulation or an innocent mathematical blunder. Whatever it is the case, the damage that has been done is irreversible. It turned physics into voodoo physics. The reluctance of the physics community to accept it is understandable. Spent a lifetime working in Special Relativity and its off-shoots only to be told what nonsense Special Relativity is hard to digest. So, they block any criticism of Special Relativity from their Propaganda Journals.

Lorentz did not use a transformation factor. Lorentz set $\eta=1$ and as a result his transformation does not retain the form of the Maxwell equations. Without non-trivial Transformation Factor η, Maxwell equations cannot maintain the form of the Maxwell equations. Transformation Factor η is an essential part of the Transformation and it determines if the form of the Maxwell equations is retained, if the relative axes are universal, and if the relative electromagnetic fields are bounded for any speed of the frame. For the transformation to be realistic, the transformation must

be unique and the relative electromagnetic fields must be bounded for any speed of the frame.

Since the Transformation Factor η determines if the relative axes are universal or frame independent, it also determines if meter sticks contract and if clocks run slow. Einstein's choice of improper Transformation Factor made clocks run slow and meter sticks contract in his Lorentz Transform in Special Relativity. We can make clocks and meter sticks universal by the proper choice of the Transformation Factor in the Lorentz Transform [11]. If the Transformation Factor in the Lorentz Transform is chosen to be $\eta=\gamma^2$, relative axes are universal and hence clocks and meter sticks are universal.

Both Lorentz and Einstein also failed to take into account the necessary conditions that emerged from the transformation. It is this negligence that led to Special Relativity. If they had taken the necessary conditions into account, we would have never heard of the Lorentz Transform, Special Relativity, and General Relativity. Physics would not have turned into voodoo physics.

Lemma:

The Lorentz Transform cannot transform Maxwell equations onto an inertial frame.

a). Original Lorentz Transform:

Lorentz thought he transformed Maxwell equations for propagation of light onto an inertial frame using the transform,

$$x'=x-vt \quad (11.1.1)$$
$$t'=t-vx/c^2 \quad (11.1.2)$$
$$y'=y \quad (11.1.3)$$
$$z'=z \quad (11.1.4)$$

The x in the Transform is the distance traveled in time delay t. The x and t in the Transform are not the space and time. Distance-delay is not space-time. Space and time cannot be brought into the equation. There is no spacetime here.

In this transform, the relative time axis is $\mathbf{t'=t/\gamma^2}$ and relative distance axis is $\mathbf{x'=x/\gamma^2}$, where $\gamma=1/(1-v^2/c^2)^{1/2}$. This transform is equivalent to $x'=x/\gamma^2-vt'$. Which is not the same as the Special Relativity where $x'=x/\gamma+vt'$. Special Relativity is not only the polar opposite of this transform, it also differs by the Contraction Factor. The Contraction Factor in Special Relativity is $1/\gamma$ whereas the Contraction Factor in this transform is $1/\gamma^2$. In this transform, the relative axes are contracted by contraction factor $1/\gamma^2$. The relative distance contracts by $1/\gamma^2$. Relative time contracts by factor $1/\gamma^2$. In this transform, meter sticks contract and clocks run slow by the factor $1/\gamma^2$.

This transform cannot transform Maxwell equations onto an inertial frame. This transform does not maintain the form of the Maxwell equations completely after the transform. It contains an additional term that disturbs the form of the Maxwell equations. Einstein introduced his Relativity Factor γ into this transform as a Transform Factor in order to remedy the situation.

"Time at a coordinate in space is meaningless. Coordinates in space have no time signature attached to them. There is no time delay unless there is a distance traveled. Time is independent of space. Space is independent of time."

"Space and time cannot be brought into the equation. What we bring into the equation is the distance-delay, not space-time. Distance-delay is independent of space-time."

b). Lorentz-Einstein Transform:

Einstein introduced his Relativity Factor $\eta(90^o)=\gamma$ from Special Relativity as the Transformation Factor, which is also known as the Lorentz Factor γ, to modify the transform,

$$x'=\eta(90^o)(x-vt) \quad (11.2.1)$$
$$t'=\eta(90^o)(t-vx/c^2) \quad (11.2.2)$$
$$y'=y \quad (11.2.3)$$
$$z'=z \quad (11.2.4)$$

where $\eta(90^o)$ is $\eta(\theta)$ at $\theta=90^o$, $\eta(\theta)$ is the Relativity Factor at angle θ to the direction of motion of the frame,

$$\eta(\theta)=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (11.2.5)$$
$$\gamma=1/(1-v^2/c^2)^{1/2} \quad (11.2.6)$$
$$\eta(90^o)=\gamma \quad (11.2.7)$$

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

The mismatch of the Lorentz Transform with Einstein's Special Relativity is obvious since in Special Relativity $\gamma=\eta(\theta)$ is at $\theta=90^o$ where as in the Lorentz Transform the Relativity Factor must be $\eta(0^o)$, which is $\eta(\theta)$ at $\theta=0^o$. In the Lorentz Transform $\theta=0^o$ whereas in Special Relativity γ is at $\theta=90^o$; they are 90^o out of phase.

In the Lorentz Transform, the angle between the beam of light and the direction of motion of the frame is $\theta=0^o$. We cannot use $\eta(\theta)$ at $\theta=90^o$ where $\eta(\theta)$ at $\theta=0^o$ is needed. Einstein's Relativity Factor γ for $\theta=90^o$ does not belong in the Lorentz Transform where $\theta=0^o$. The use of the Relativity Factor γ as the Transformation Factor in the Lorentz Transform is a contradiction in its inception.

In the Lorentz Transform, a beam of light travels in the direction of motion of the frame, $\theta=0^o$. As a result, the Proper Transformation Factor must be the Relativity Factor in the direction of motion of the frame, $\eta(\theta)$ at $\theta=0^o$, which is different from the Relativity Factor γ orthogonal to the direction of motion of the frame, $\eta(\theta)$ at $\theta=90^o$. Relativity Factor in the direction of motion of the frame is $\eta(0^o)=\gamma^2$. As a result, the Transformation Factor $\eta(90^o)=\gamma$ in the Lorentz Transform falls short of making the Transform frame-independent.

For the transformed Maxwell equations to uniquely retain the form of the Maxwell equations, the relative axes must be frame independent. The job of the Transformation Factor in the Lorentz Transform is to make the transformation frame independent so that the form of the Maxwell equations is uniquely retained after the transform. If the Transform is unique and frame independent, then, the form of the Maxwell equations is uniquely retained after the transform. The Lorentz Transform with Relativity Factor γ as the

Transformation Factor cannot achieve that. To achieve that, we need the Relativity Factor $\eta(\theta)$ at $\theta=0^o$, which is $\eta(0^o)=\gamma^2$ as the Transform Factor in the Transform.

The purpose of the Transformation Factor in the Lorentz Transform is to make the relative axes frame independent so that the transformation of the Maxwell equations onto an inertial frame maintains the form of the Maxwell equations. The Lorentz Transform with the Transformation Factor γ contracts the relative distance axis $\mathbf{x'=x}/\gamma$ and relative time axis $\mathbf{t'=t}/\gamma$. Special Relativity uses this contraction of the relative distance axis $\mathbf{x'=x}/\gamma$ to claim that meter sticks contract with motion. There would be no relative axis contraction if the Transformation Factor in the Lorentz Transform is properly chosen, $\eta(0^o)=\gamma^2$.

Meter sticks do not contract with the motion. Clocks do not slow down with motion. It is the improper choice of the Transformation Factor in the Lorentz Transform that made meter sticks contract and the moving clocks slow down. It is the failure of Special Relativity to use the proper Transformation Factor in the Lorentz Transform that led to clocks slowing down and meter sticks contraction with motion. The ticking of a clock is not relative. The length of a meter stick is not relative.

The Lorentz Transform with the Transformation Factor γ is equivalent to $x'=x/\gamma-vt'$. This is not the same as the Special Relativity where $x'=x/\gamma+vt'$. Special Relativity is the polar opposite of the Lorentz Transform. This is expected since light has no momentum in the Lorentz Transform, whereas in Special Relativity, light is forced to have momentum. In the Lorentz Transform with the Transformation Factor γ, the relative axes are contracted by Contraction Factor $1/\gamma$. The meter sticks contracts by the Contraction Factor $1/\gamma$. Relative time contracts by Contraction Factor $1/\gamma$. As far as the contractions of the relative time axis and the relative distance axis are concerned, the Lorentz Transform with the Transformation Factor γ is the same as the Special Relativity even though Special Relativity and the Lorentz Transform are polar opposites.

The Lorentz Transform with the Transformation Factor γ, which is also referred to as the Lorentz Transform [1], cannot transform Maxwell equations onto an inertial frame uniquely and the relative electromagnetic fields in this transform are unbounded as the speed of the frame reaches the speed of light [6]. Since the Lorentz Transform is not unique, there are infinitely many transforms that lead to the same result. You can replace γ by γ^n, you still get the same result for any n, where n can be any real value or any integer. The relative electromagnetic fields in the Lorentz Transform depend on γ making them infinite as the speed of the frame reaches the speed of light. The relative electromagnetic fields cannot be unbounded in the transform.

If the Transformation Factor in the Lorentz Transform had been the Relativity Factor for the direction of motion of the frame, $\eta(\theta)$ at $\theta=0^o$, instead of the Relativity Factor γ for the direction orthogonal to the direction of motion of the frame, $\eta(\theta)$ at $\theta=90^o$, the transformation could have been achieved in absolute time with relative time axis $\mathbf{t'=t}$ and relative distance axis $\mathbf{x'=x}$, which is the Proper Transform [11]. The Lorentz Transform applies in the direction of motion of the frame and hence the Transformation cannot be the Relativity Factor γ for the direction orthogonal to the frame.

The Transformation Factor in the Lorentz Transform must be the Relativity Factor in the direction motion of the frame, $\eta(\theta)$ at $\theta=0^o$. The Relativity Factor in the direction of motion of the frame, $\eta(\theta)=\gamma^2$ at $\theta=0^o$, is not the same as the Relativity Factor in the direction orthogonal to the direction of motion of the frame, $\eta(\theta)=\gamma$ at $\theta=90^o$.

The Relativity Factor in the direction of motion of the frame, $\eta(\theta)=\gamma^2$ at $\theta=0^o$, is the Proper Transformation Factor for the Lorentz Transform. The Lorentz Transform with the Proper Transformation Factor, $\eta(\theta)=\gamma^2$ at $\theta=0^o$, is the Proper Transform. The Proper Transformation Factor for the Lorentz Transform is the Relativity Factor $\eta(\theta)$ at $\theta=0^o$, not $\eta(\theta)$ at $\theta=90^o$. The Proper Transformation Factor for the Lorentz Transform is the Relativity Factor $\eta(\theta)$ at $\theta=0^o$, which is $\eta(0^o)=\gamma^2$, not $\eta(\theta)$ at $\theta=90^o$, which is $\eta(90^o)=\gamma$ that Einstein used in the Lorentz Transform.

Lemma:

Einstein's Relativity Factor γ does not belong in the Lorentz Transform. What belong in the Lorentz Transform is the Relativity Factor $\eta(\theta)$ at $\theta=0^o$, which is $\eta(0^o)=\gamma^2$.

Lemma:

Even though the Lorentz Transform with the Transformation factor γ cannot transform Maxwell equations onto an inertial frame, it can be made to look like it transforms the Maxwell equations while the form of Maxwell equations is retained by multiplying both the left-hand side and right-hand side of every equation by a redundant multiplication factor γ, a pure mathematical deception. That is exactly what Einstein did in Special Relativity.

"Einstein's transformation of Maxwell equations using the Lorentz Transform is pure deception."

Lemma:

The Lorentz Transform and Special Relativity are polar opposites since Special Relativity requires the assumption that light has momentum whereas no such assumption requires in the Lorentz Transform. Light has no momentum in the Lorentz Transform.

Lemma:

The path of light is unaltered relative to observers in the Lorentz Transform whereas the path of light is altered relative to observers in Special Relativity.

Lemma:

The Lorentz Transform is only applicable for propagation of light along the path of a moving frame.

Lorentz Transform does not apply for light propagating off the path of a moving frame.

c). Proper Transform:

The Proper Transform that transforms Maxwell equations uniquely onto a moving frame is given by [11],

$$x'=\eta(0^o)(x-vt) \quad (11.3.1)$$
$$y'=y \quad (11.3.2)$$
$$z'=z \quad (11.3.3)$$

where, $\eta(0^o)$ is $\eta(\theta)$ at $\theta=0^o$, and $\eta(\theta)$ is the Relativity Factor at angle θ to the direction of motion of the frame,

$$\eta(\theta)=\gamma^2[(v/c)\cos(\theta)+(1-(v^2/c^2)\sin^2\theta)^{1/2}] \quad (11.3.4)$$
$$\gamma=1/(1-v^2/c^2)^{1/2} \quad (11.3.5)$$
$$\eta(0^o)=\gamma^2 \quad (11.3.6)$$

The relative time relationship $t'=\eta(t-vx/c^2)$ is redundant for the transformation of Maxwell equations onto an inertial frame [6] since $x'=ct'$ and $x=ct$. Although the relative time relationship $t'=\eta(t-vx/c^2)$ holds in Special Relativity, it does not add any new information. It is a derived relationship from $x'=\eta(x-vt)$ using the fact that $x'=ct'$ and $x=ct$ [6]. There is no harm in having it though for better clarity even though it serves no purpose in the transformation of Maxwell equations onto an inertial frame.

Proper Transform with the Transformation Factor $\eta(0^o)=\gamma^2$ transforms Maxwell equations uniquely even though the Lorentz Transform with Relativity Factor $\eta(90^o)=\gamma$ as the Transformation Factor cannot transform the Maxwell equations uniquely. In the Proper Transform, the relative time axis is **t′=t** and the relative distance axis is **x′=x**. In the Proper Transform, relative axes are frame independent, absolute. The relative time axis and relative distance axis are unaltered in the Proper Transform. Relative axes are universal in the Proper Transform.

There are no meter sticks contractions here, **x′=x**. There are no clocks slowing down here, **t′=t**. The ticking of clocks is observer independent. The length of meter sticks is observer independent. The mass of an object is observer independent. Light does not propagate relative to observers. Propagation of light is independent of observers. The path of light is independent of observers. The speed of light on its fixed path that can only be altered by the change of the medium is independent of observers. Observers cannot tilt a moving arrow. Observers cannot tilt a light arrow, a light burst. Observers cannot derail light. Observers cannot derail a train.

The motion of light bursts is not determined by Maxwell equations. It is the propagation of light that is determined by Maxwell equations. Propagation of light is observer independent. The motion of a light burst is observer dependent just as the motion of an arrow is observer dependent except that the dependence is polar opposite. The only difference between the motion of an arrow and the motion of a light burst is that an arrow has momentum whereas a light burst is a massless and momentumless arrow.

We cannot force an artificial momentum on light as Einstein did in Special Relativity since light has no stand still existence. We do not have to go to an extreme to deny this natural polar difference between an arrow and a light burst as Einstein did in Special Relativity. Einstein wanted to force light to behave as golf balls. Light cannot behave as golf balls since light has no standstill existence. We cannot force momentum upon light where it does not belong by proclamation. Well, it is a nice try, but it is not going to stick except in voodoo physics. In voodoo physics anything goes since it is a place where particles are waves, and particles are in multiple places simultaneously. Nobody even seems to know what is waving in particle waves; then again, it is not a concern in voodoo physics where anything goes.

The x and t in the Lorentz Transform are not coordinates in spacetime. The x is the distance traveled at time delay t. The (x,t) is not spacetime. Time at a coordinate in space is meaningless. Coordinates in space have no time attached to them. Coordinates in space do not have a time signature. If there is a distance traveled, then, there is a time delay, and vice versa. The x and t are independent of coordinates in space and instances of time.

There is space. There is no time. There is no time delay until we define a time width, a day or year. Clocks do not determine time. Clocks are engineered to break down the time width, a day, we have defined into finer intervals. Clocks do not give time. We use clocks to measure time delay.

Speed of clocks is determined by engineers who designed them, not observers. Special Relativity is incompatible with clocks since Special Relativity is based on the average forward and return time of a beam of light that is not given by clocks. Average forward and return time of a beam of light is available off-line for the past; it is not instantaneous time. Real-time systems run on the instantaneous time. Special Relativity that runs on average forward and return time of a beam of light is not applicable to Real-time systems.

Lemma:

Relative axes are universal in the Proper Transform, **t′=t** and **x′=x**.

d). Maxwell Equations for Propagation of Light are Not Transformable onto Inertial Frames:

The above transforms appear to transform Maxwell equations for propagation of light onto an inertial frame. The appearance can be deceiving. They appear to transform Maxwell equations because both Lorentz and Einstein either did not notice or failed to take into consideration the necessary conditions that emerged from the transformation. The necessary conditions prevent the transformation of Maxwell equations for propagation of light onto an inertial frame [11].

Maxwell equations for propagation of light cannot be transformed onto an inertial frame uniquely [6]. Light does not propagate relative to inertial frames. Propagation of light is not relative. No mass has relative speed c relative to light since light has no

stand still existence. Light has no momentum. Neither the path of light nor the path of an object of mass can be altered relative to observers.

If anybody says Maxwell equations are transformable onto an inertial frame, it must be someone who has never transformed it by himself or herself; it must be someone who is just memorizing what is in the religious text. Both Lorentz and Einstein thought they transformed Maxwell equations onto an inertial frame because they disregarded the necessary conditions that emerged from the transformation. They were either just plain blind to them or just disregarded them purposely because these necessary conditions render their work useless. If they had taken those necessary conditions into account; there wouldn't be a Lorentz Transform, there wouldn't be Special Relativity or General Relativity, they wouldn't have enjoyed the fame they had enjoyed. The necessary conditions that emerge from the transform prevent transforming Maxwell equations onto inertial frames [6].

e). Why do Lorentz Transform, Special Relativity, and General Relativity exist?

The only reason they exist is our ignorance of the Lorentz Transform. The Lorentz Transform, Special Relativity, and General Relativity have no existence if we have not been ignorant about the necessary conditions of the Lorentz Transform that emerges from the transformation of Maxwell equations for propagation of light onto an inertial frame [11]. Both Lorentz and Einstein either purposely or unknowingly disregarded the necessary conditions that emerged from the transform of the Maxwell equations onto an inertial frame with disastrous consequences. If the necessary conditions that emerged from the transform had been taken into account, there would be no Special Relativity, General Relativity, or Lorentz Transform; physics would have not have taken such an unrealistic path, $E \neq mc^2$.

XII. FUNDAMENTAL MISTAKES IN EINSTEIN'S SPECIAL RELATIVITY

Lemma:

There would be no Special Relativity unless light is derailed. It was Einstein's derailing of light that led to relative time. There would be no Relativity Factor without light being derailed relative to observers. Observers cannot derail a train. There cannot exist a relative time or Relativity Factor since light cannot be derailed by observers."

"*Observers cannot derail light. Einstein derailed light in Special Relativity*."

"Special Relativity forced a fake momentum on light by proclamation. Light cannot be forced upon a momentum even hypothetically. Light cannot carry momentum. Light has no momentum. Light cannot propagate if light has momentum. The motion in propagation is orthogonal to the direction of propagation. The motion of a light burst is in the direction of propagation. The motion of a light burst is not governed by Maxwell equations for propagation of light."

"Newtonian dynamics do not apply for light. Newtonian dynamics do not apply for the massless. Special Relativity does not apply to light since the path of light, which can only be altered by the change of medium, cannot be altered relative to observers. The path of any moving entity, irrespective of whether it is a motion of an object or the motion of a light burst, cannot be altered relative to observers."

Relativity deals with the motion of light bursts. Relativity does not deal with the propagation of light. Propagation of light that is governed by Maxwell equations is not relative. The motion of light bursts is relative. The motion of light bursts is not governed by Maxwell equations. There is no speed limit to the motion of a light burst relative to observers since the motion of light bursts is not governed by Maxwell equations for propagation of light. Maxwell equations for propagation of light cannot be transformed onto moving frames.

Light does not propagate relative to inertial frames. Light bursts move relative to observers or relative to reference frames. The relative speed of light bursts does not have to be a constant since the motion of light bursts are not governed by Maxwell equations. The path of motion is never altered relative to observers. The path of motion is displaced against the motion of observers. The displacement of the path relative to observers does not alter the path or the speed of a moving entity on its path.

"*Light does not propagate relative to observers. Light bursts move relative to observers. Motion and propagation are not the same. Motion is relative. Propagation is not relative.*"

Just visualize a vertically moving arrow in a train. Arrow does not tilt relative to observers inside the train or outside the train. An arrow is displaced against the motion of an observer while the motion of the arrow is unaltered. A light burst is a massless and momentumless arrow. A light burst, which is a massless arrow, is displaced relative to observers. The path of a light burst or a massless arrow is unaltered relative to observers. However, a light burst or massless arrow lags behind relative to observers while the path of the arrow is unaltered relative to observers. An arrow does not tilt relative to observers.

Observer motion cannot change the path of an arrow or the speed of an arrow on its path. It is only

that an arrow is displaced against the motion of observers while the path of the arrow and the speed of the arrow on its path are unaltered. The fundamental mistake in Special Relativity is the tilting of the light arrow relative to observers. Observers cannot derail a train. It is the unrealistic tilting of light or Einstein's derailing of light that led to the Relativity Factor $\gamma=1/(1-v^2/c^2)^{1/2}$ in Special Relativity. Observers cannot derail light. There would be no Relativity Factor unless light is derailed. Einstein derailed light, that is where Special Relativity went wrong.

Relativity does not require the transformation of Maxwell equations onto an inertial frame since Relativity deals with the motion of light bursts, not the propagation of light. Relativity of light deals with the motion of massless and momentumless arrows. Maxwell equations have nothing to do with the motion of massless and momentumless arrows.

Some of the ills of Special Relativity include but not limited to:

1). Maxwell equations cannot be transformed onto an inertial frame:

The necessary conditions that emerge from the transformation prevents the transformation of Maxwell equations onto an inertial frame. Both Lorentz and Einstein disregarded the necessary conditions either knowingly or unknowingly. If the necessary conditions had been taken into account, there would not have been Special Relativity. The Lorentz Transform does not exist. Light does not propagate relative to inertial frames. Light does not propagate relative to observers. Every inertial frame is not a stationary frame for light. Light propagates in space, which is the absolute frame for light.

2). If space is warpable, a mass cannot warp space:

If space is warpable, it is the volume of an object that warps space, not the mass. It is the volume that occupies the space, not the mass. If the gravity is the curvature of the space, the gravity is determined by the volume of an object in General Relativity, not the mass of an object. Space is not warpable. Warping of space is meaningless.

3). Clocks do no determine time:

We do not grow old by the clocks that we engineer. We cannot engineer how we age. Clocks that we engineer cannot determine the time. Clocks break down a time interval, a day or a year, that we have already defined into finer intervals.

4). Observers cannot derail trains:

No physical change can take place relative to observers. What takes place relative to observers is simply a relative displacement. Relative displacement relative to observers does not change the path or the speed of an entity on its path. Clocks are useless unless they are in synchrony with the defined time with, a day or a year. Clocks have nothing to do with the speed of light unless the mechanism of the clock is based on the propagation of light. There is no clock that has a mechanism based on the propagation of light. A clock based on the average forward and return time of a beam of light cannot give instantaneous time. Average has to be calculated off-line. The time in Special Relativity is incompatible with time given by clocks.

5). Time is observer independent:

The time it takes for a train to travel from New York to Los Angeles is independent of observers. You can run in any direction, at any speed you want, that does not change the time it takes for the train to travel from New York to Los Angeles relative to you. It is the same for a burst of light that travels from New York to Los Angeles. No difference. The motion of a train or beam of light on track is independent of all observers.

6). Observers cannot derail trains or light. Reality is observer independent:

It is the mechanism of a measuring instrument that is relative, not what is being measured. What is being measured is observer independent. Time is observer independent. The mass of an object is observer independent. The path of a moving entity and the speed of the moving entity on its path are observer independent. Observers cannot bend light. Observers cannot derail trains. Observers cannot ditch vehicles.

7) The path of a moving entity is unaltered relative to all observers:

In Special Relativity, the relative time dilation factor, which is the Relativity Factor, is not constant for an entire initial frame. Einstein's Relativity Factor γ is valid only for directions orthogonal to the direction of motion of the frame in Special Relativity. Observers cannot bend or tilt the path of a moving entity. The path of a moving entity is displaced relative to observers, not altered or tilted. If an arrow is fired vertically in a moving train, the arrow DOES NOT TILT onto an angular path relative to observers. Arrow travels vertically relative to all observers, both inside and outside.

However, the vertically moving arrow is displaced relative to external observers in the direction of motion of the train since the arrow has momentum, and hence the arrow shifts on a forward angular line relative to external observers while traveling vertically. The forward angular line is not the path of the arrow. The path of a moving entity is unaltered relative to all observers, both inside and outside. The arrow hits the ceiling at the same time relative to all observers, passengers and external observers alike, since the path of the arrow is unaltered relative to all observers. Observers cannot derail a train. Galileo Relativity derailed a train. Galileo-Newton Relativity is incorrect.

8) Light cannot bend or tilt relative to observers:

A light burst is a massless arrow. The scenario of a vertically traveling light burst in a moving train is similar to the scenario of an arrow but polar opposite since light has no momentum. A vertically traveling

light burst in a train travels vertically relative to all observers, both inside and outside. However, the light burst lags behind against the motion of the train relative to passengers on the train since light has no momentum, and hence the light burst shifts on a reverse angular line while traveling vertically relative to passengers on the train. The reverse angular line is not the path of the light burst.

A light burst CANNOT TILT onto an angular path relative to observers. The time taken for the light burst to hit the ceiling is the same for all observers, both inside and outside. Time is not relative. The fundamental mistake in Special Relativity is the mistaking of the angular line that the light burst is shifting on relative to observers as the actual path of light. Observers cannot derail light. Einstein derailed light.

"A vertically fired light burst in a moving train does not take an angular path relative to observers."

9). Special Relativity is blind physics:

There is nothing in Special Relativity that is correct. Special Relativity is false both mathematically and conceptually. Special Relativity is a mathematical and conceptual blunder. Einstein should have realized what a blunder it had been, if he had considered a beam of light at an angle to the direction of motion of the train, instead of considering a beam of light orthogonal to the motion of the train.

10). Space and time cannot be brought to the equation:

Time taken to travel a distance is not the time. The distance traveled in a given time delay is not space. The distance traveled and time taken to travel the distance are independent of the space coordinates and an instance of time. Space and time cannot be brought to the equation. Distance-Delay is not Space-Time. What is in the Lorentz Transform is distance-delay, not space-time. What is in Special Relativity is distance-delay, not space-time. Distance-delay is independent of spacetime coordinates. Spacetime cannot be relative since there is no spacetime independent frame of reference.

"Space and time cannot be brought into the equation."

11). Clocks do not determine time:

Time is a definition. We define a time interval, a day or a year. We engineer clocks to break down the time interval we have defined into finer intervals. Clocks do not determine time. We do not age by the clock. Time cannot be defined as the average forward and return time of a beam of light since the average is not the instantaneous time. Average does not exist on-line, instantaneously. Average has to be calculated off-line. Average exists on our notebooks, not in reality. Average exists for the past.

12). Real-time systems do not run on average forward and return time dynamics:

A theory based on average forward and return time of a beam of light cannot describe the motion dynamics of real-time systems. Special Relativity based on the average forward and return time of a beam of light is useless for real-time systems. Clocks do not provide the average forward and return time of a beam of light. Clocks are incompatible with Special Relativity.

13). The mass of an object cannot warp the space even if space is warpable:

Einstein's claim that a mass warps space is simply hilarious, utter nonsense. First of all, space is not warpable. If space is warpable, the mass of an object cannot warp the space. If space is warpable, it must be warped by an entity that occupies the space. It is the volume of an object that occupies the space, not the mass. If space is warpable, it is the volume of an object that must warp space, not the mass. If the space is warpable, the curvature of the space by an object on mass M and volume V is not the same as an object of the same mass M with smaller volume v.

14). Space is not warpable:

If space is warpable, If the gravity is the curvature of the space, then, the gravity will be determined by the volume of an object, not by the mass of an object. If the space is warpable by an object, the motion of an object generates a changing warp that resists the motion of the object resulting in the collapse of orbiting systems. The whole concept of General Relativity and its claim that the mass of an object warps space is simply nonsensical, blind physics.

15). The diffraction of light near the sun has nothing to do with General Relativity:

Space is not warpable. It is the medium that is warped by the mass of an object, not the space itself. The warping of the medium by a gravitational object generates a density gradient around the gravitational object. This gravity generated density gradient diffracts light near a gravitational object. The diffraction of light near a gravitational object has nothing to do with Einstein's General Relativity. Arthur Eddington misinterpreted the diffraction or bending of light near the sun by the density gradient of the medium around the sun to falsely justify General Relativity. It does not matter how strong the gravity is near a gravitational object, light does not diffract near a gravitational object in a vacuum. Gravit has no effect on the massless. The massless has no momentum. Light has no momentum. Light cannot be given momentum even hypothetically.

"Gravity cannot bend light in a vacuum."

16). Einstein's equivalence principle is false:

Since acceleration $a=d^2x/dt^2$, there is no acceleration unless there is a change of position, $dx\neq0$. There is no acceleration without motion. Gravity

is not acceleration. An object at standstill on a gravitational object has no acceleration. An apple on a tree has no acceleration. A falling apple has an acceleration. Gravity is not acceleration. An object falling under gravitational force has an acceleration. Gravity cannot bend light in a vacuum. Gravity has no effect on the massless. A horizontal light beam in a stationary cabin on a gravitational object travels horizontally unaltered. Gravity cannot bend light in a vacuum. Einstein's principle of equivalence is false.

17). Fundamental mistakes in Special Relativity:

Fundamental mistakes in Special Relativity are the forcing of a fake momentum on light, where it does not belong, and the bending of light relative to observers, which cannot be done. Momentum cannot be forced upon the massless even hypothetically. The path of any moving entity is observer independent. Trains do not derail relative to observers. Vehicles do not end up in ditches relative to observers. An entity that cannot react upon a force cannot have a momentum. An entity that cannot be stopped cannot have momentum. An entity that has no standstill cannot have momentum. Light has no momentum. Light cannot be forced upon a momentum even hypothetically.

18) Observers cannot change the reality:

No physical change can take place relative to observers. Observers cannot derail a train. We cannot force a momentum on massless by proclamation. We cannot force momentum on light even hypothetically; it is not going to stick. It does not matter if it is a motion of an object of mass or motion of a light burst, the path of a moving entity is not going to be altered relative to observers. A vertically traveling arrow will be a vertically traveling arrow relative to any observer. It does not matter if an arrow is traveling at constant speed or accelerating, a vertically traveling arrow is a vertically traveling arrow in a train relative to the passengers inside the train and relative to observers outside the train.

19) Galileo-Newton Relativity is incorrect. Special Relativity is utter nonsense:

Both Galileo-Newton Relativity and Einstein Relativity are incorrect. A moving arrow is not anchored to the bow. A propagating light burst cannot be anchored to the source. Any observer effect on light must be on the whole light burst, not just the leading end of a light burst. If the leading edge of an arrow or light burst is displaced by speed v of the train, the trailing end of the arrow or the light burst must also be displaced by the speed v of the train. It is the whole arrow that is displaced relative to observer motion. It is the whole light burst that is displaced relative to observers. The direction of the light burst is unaltered relative to observers. A light burst is a massless arrow traveling at speed c in a vacuum.

A source does not release a light beam as a single beam. A light beam consists of light bursts. Light bursts are not anchored to the source. In Einstein's envisioning of Special Relativity, relative to an external observer, the leading tip of the light beam has shifted by distance vt′ while the trailing end is attached to the source, $\mathbf{y'=y+vt'}$, which is indeed incorrect. Light burst attached to a source by the tail end is not a light burst, not a propagating wave. For a train traveling along x-axis, Einstein used $\mathbf{y'=y+vt'}$ for a vertical light burst to obtain his Relativity Factor ɣ and claim that time is relative and t′=ɣt holds for the entire frame. The relationship $\mathbf{y'=y+vt'}$ is false; it bends light relative to observers. Observers cannot bend light. The relationship $\mathbf{y'=y+vt'}$ does not apply to light. The relationship $\mathbf{y'=y+vt'}$ does not apply to a moving arrow. The relationship $\mathbf{y'=y+vt'}$ is not relativity. The Relativity Factor ɣ derived for the lateral plane does not apply for any other direction. Every direction has its own Relativity Factor in Special Relativity. Einstein's relative time is directional.

A light burst has no attachment to the source once the light burst is released. A light burst remains as a single unit and hence $\mathbf{y'\neq y+vt'}$. Einstein's Relativity Factor ɣ and his time dilation relationship t′=ɣt are meaningless since $\mathbf{y'\neq y+vt'}$. The relationship $\mathbf{d'=d+v}t'$ in Special Relativity is meaningless since it derails a train. Observers cannot derail trains. The equation $\mathbf{d'=d+v}t'$ in Special Relativity is a train derailment, an accident waiting to happen. An arrow cannot travel if the tail end of the arrow is attached to the bow. A light burst cannot propagate if the tail end of it is anchored to the source. Once a light burst is out of the source, it has no attachment to the source, it is free, it is an independent entity without an umbilical cord.

If light is forced upon a false momentum, it is the light burst itself as an arrow that is displaced at speed v in the direction of the train relative to external observers, not just the leading tip of the light burst. If the leading tip of the light burst shifts by vt′ in the direction of motion of the frame, the trailing end of the burst must also be shifted by the same vt′. It is the whole light burst (the arrow) that shifts by distance vt′ towards the motion of the frame relative to external observers if the light is forced upon a momentum. As a result, t′=t. Time is absolute.

The assumption in Special Relativity that light has momentum is false. If light has a momentum, light must be able to be brought to a stop by applying an equal and opposite momentum. Light cannot be brought to a stop since light has no standstill existence. Any entity that has no standstill existence cannot have momentum. Any entity that cannot respond to a force cannot have momentum. Collision of entities with momentum generates temperature. Light has no temperature. It does not matter how much light is there in a vacuum, vacuum has no temperature. Light has no energy. It is only in the presence of charge particles that light can generate

energy, temperature. Light by itself is useless. There cannot be a massless momentum. Light cannot have momentum. Light cannot be assumed to have momentum even hypothetically.

A vertically moving light burst in a moving train cannot turn or tilt onto an angular path relative to external passengers. The forward angular line relative to observers is an imaginary line where the vertically traveling light burst shifts vertically relative to external observers from the time of its emission by the source if the light is assumed to have momentum.

A vertical light burst shifts vertically on a reverse angular line relative to passengers on the train if the light is not assumed to have momentum. A light burst traveling vertically cannot turn or tilt onto an angular path relative to observers. The angular line is not an angular path that light travels relative to observers. A vertical Light Burst does not propagate in the direction of the angular line. The angular line is the line a light burst shifts on relative to observers while the direction of the light burst remains unaltered.

If light is assumed to have a fake momentum, a vertical light burst always travels vertically relative to external observers while shifting on a forward angular line; there is no displacement relative to passengers. Since light has no momentum in reality, a vertical light burst always travels vertically relative to passengers on the train while shifting on a reverse angular line; there is no displacement relative to external observers.

Light cannot have momentum and hence there is no shifting of a light burst along a forward angular line towards the direction of motion of the frame relative to external observers. However, since light has no momentum, a light burst lags behind at the speed of the train relative to passengers on the frame. As a result, a vertically traveling light burst shifts on a reverse angular path relative to passengers on the frame since light has no momentum. The path of a light burst and the speed of light on its path are unaltered relative to observers both inside and outside.

The displacement of a light burst relative to observers by the speed of the train in the direction of motion of the train or against the direction of motion of the train does not affect the path of the light burst and the speed of light burst on its path. The time taken for the light burst to hit the ceiling is the same since a vertically traveling light burst travels vertically relative to both passengers on the frame and relative to observers outside the frame, t′=t. Time is observer independent. Time is absolute.

20). Observers in a moving train can determine the speed of the train by using a light burst:

The fact that a light burst in a train lags behind by the speed of the train relative to passengers on the train can be used to determine the speed of the train. Even Though passengers on a train cannot determine the speed of the train by using an object of mass as Galileo stated, passengers on a train can determine the speed of the train by using a burst of light.

Galileo's claim that the speed of a moving cabin cannot be determined from within is limited to the motion mechanics of objects of mass. Propagation of light was not known to Galileo. Light is never a part of Galileo's claims. The motion mechanics for objects of mass does not apply for the propagation of light. Newtonian mechanics do not apply to light, the massless. Galileo's claim does not include the propagation of light. Einstein forced light to be in compliance with Galileo's claim for no imaginable reason; that is a mistake in Special Relativity. We cannot force a momentum on light by proclamation.

If Galileo had known the theory of propagation at the time, he should have not made the claim that it is not possible to determine the speed of an inertial frame by any means. Knowing only the motion mechanics of objects of mass, one cannot make such a broader claim. Galileo's claim only refers to the motion mechanics of objects of mass that was known to him at the time, not the propagation mechanics of light that was unknown to him. The massless cannot be in compliance with Galileo's claim. The massless has no momentum, no energy, no temperature, no entropy. The massless cannot be forced upon a momentum. There is no momentum without mass.

Light has no mass, no energy, no temperature, no entropy, no momentum. Collisions of light bursts do not generate a temperature. If light had had momentum, space would not have been such a cold place. There is no energy without particles of mass. There is no temperature without particles of mass. There is no light without particles of mass.

Light has electromagnetic potential energy. Electromagnetic potential energy is not energy until it is converted to kinetic energy of charge particles in the presence of mass. Light has no temperature in a vacuum. Einstein's photon derivation is invalid since light has no energy or temperature. Boltzmann entropy cannot be applied to light since light has no entropy.

21) Cosmic Microwave Background (CMB) is not some remnant from a hypothetical bigbang:

Cosmic Background temperature is not some left over from a hypothetical bigbang. The presence of Cosmic Background Temperature in space is an indication that space is not a vacuum; it is an indication that there are charge particles in space. Cosmic Background temperature is a result of collision of these charge particles. Cosmic Microwave Background is a result of motion of these charge particles.

22) Light burst is a massless arrow:

Since light is assumed to have momentum in Special Relativity, relative to an external observer, it is not just the leading end of the light burst that moves by the distance vt′ along the direction of the train, the trailing end of the burst also moves by the same distance distance vt′; a light burst is a massless arrow. A light burst moves like an arrow at speed c. A light burst, which is traveling at speed c on its path, as a

whole is displaced by the speed v of the train relative to external observers in the direction of motion of the train if light is assumed to have momentum. It is wole light burst that has an additional displacement speed component, the speed of the train, in the direction of the train relative to external observers since light is given a false momentum by proclamation in Special Relativity.

Lemma:

The displacement of a moving arrow or a light burst in a train by the speed of the train relative to observers has no effect on the motion of the arrow or the light burst on its path.

Since light has no momentum, a vertically traveling light burst in a train lags behind at speed -v relative to the passengers in the train. A vertically traveling light burst shifts on a reverse angular line relative to passengers on the train. A vertically traveling light burst has no displacement in the direction of the train by the speed of the train relative to external observers, neither forward nor backward, since light has no momentum. And hence a vertically traveling light burst in a train travels vertically unaltered without any horizontal displacement. Both relative to passengers as well as external observers, a vertically traveling light burst has vertical speed c. So, the time taken for a light burst to hit the ceiling is observer independent irrespective of whether light is assumed to carry a momentum or not.

The path of a light burst in a moving train remains unaltered relative to any observer, both inside and outside the train. The displacement of light burst in the direction or against the direction of the train by the speed of the train does not alter the path of the light burst and the speed of the light burst on its path. The time taken for a light burst to hit the ceiling is the same for both passengers and external observers since the speed of the light burst on its path is the speed of light c relative to both passengers and external observers naturally, t′=t. No Special Relativity is required.

Einstein's Special Relativity is meaningless, utter nonsense. Special Relativity is false both theoretically and conceptually. Special Relativity is a theory of the blind for the blind. There is nothing in Special Relativity that makes any sense. Students believe it because they have to believe it to get a job; they believe it because they spend time and money to learn it. Professors teach it because it is their job. It is in the job description. There is no other reason. So, the lie perpetuates.

Light has no momentum. When light has no momentum, it is the whole light burst that lags behind relative to passengers on the train, not just the leading end of the light burst. The path of the light burst is unaltered relative to observers both inside and outside irrespective of whether light is assumed to have false momentum or not. A vertical light burst in a train travels vertically relative to any observer both inside and outside.

23) Special Relativity is hypocritical:

Special Relativity is based on the Relativity factor ɣ, which consists of terms (c-v) and (c+v). The terms (c+v) and (c-v) cannot exist unless the speed of light is observer dependent. A theory that claims the speed of light is observer independent cannot contain the terms (c-v) and (c+v). Special Relativity is a self-contradiction. The Lorentz Transform contains the terms (c-v) and (c+v) if ɣ is chosen as the transformation factor as Einstein did. The Lorentz Transform is self-contradictory. Lorentz Transform is the polar opposite of Special Relativity [10].

24) Special Relativity cannot model real-time systems:

Since Special Relativity contains the terms (c-v) and (c+v), Special Relativity is a theory based on the average forward and return time. A theory based on the average forward and return time is useless for modeling real-time systems that operate on instantaneous time. Average is calculated, not measured. Average is available offline for the past. Clocks do not give the average forward and return time. Special Relativity is incompatible with clocks.

25) Light does not propagate relative to moving frames:

A light burst is not anchored to a source once it is released from a source. Fields that are anchored to a source cannot propagate. Light is not relative. Light does not propagate relative to moving frames. Light propagates in space. The only stationary frame for light is the frame where light naturally propagates, in space. Every inertial frame is not a stationary frame for light. It is only for the motion of objects of mass that every moving frame is a stationary frame. A light burst released from a moving frame does not have the velocity of the frame, does not have momentum in the direction of the frame. The massless has no momentum. The massless cannot be forced upon a momentum even hypothetically.

"*Every inertial frame is not a stationary frame for light*."

26) The motion of light bursts is not governed by Maxwell equations:

Although the propagation of light is governed by the Maxwell equations, motion of light bursts is not governed by Maxwell equations. Maxwell equations cannot be transformed onto inertial frames [6]. The Lorentz Transform cannot transform Maxwell equations onto an inertial frame. Einstein's Relativity Factor for the lateral plane does not belong in the Lorentz Transform where the motion is in the direction of motion. The Lorentz Transform does not require the assumption that light has a momentum that was made in Special Relativity, and hence they are polar opposite, not the same. Light does not have momentum in the Lorentz Transform. Special Relativity has forced a fake momentum on light by proclamation.

The invalidity of Einstein's transformation of Maxwell equations onto an inertial frame is clear since electromagnetic fields approach infinity as the speed of the inertial frame reaches the speed of light. Lorentz did not transform the Maxwell equations onto an inertial frame. Lorentz Transform cannot transform Maxwell equations onto inertial frames uniquely [6]. Maxwell equations are not transformable onto inertial frames. Maxwell equations do not apply relative to inertial frames. The Lorentz Transform does not exist.

Lemma:

It is the propagation of light that is governed by the Maxwell equations, not the motion of light bursts. Propagation of light is not relative. The motion of light bursts is relative.

Propagation of light is not relative. Light does not propagate relative to observers. The path of light and the speed of light on its path are constant that can only be altered by the change of the medium. In Special Relativity, Einstein altered the path of light relative to observers; that is the fundamental mistake in Special Relativity. The path of a moving object or path of light cannot be altered relative to observers. The mockery of Galileo-Newton Relativity and Einstein's Special Relativity can be experimentally observed by firing an arrow vertically using a bow in a moving train. The direction of the arrow is observer independent. Time is observer independent.

Lemma:

Time is not relative. An arrow moving vertically in a train does not turn itself onto an angular path relative to external observers. A vertically moving arrow always remains a vertically moving arrow relative to any observer, both inside and outside.

Lemma:

A vertically moving light burst in a train does not turn or tilt itself onto an angular path relative to observers. Although a vertically moving light burst undergoes a displacement against the motion of the train at the speed of the train relative to passengers on the train, the light burst remains vertical relative to passengers and external observers.

"Observers cannot bend light. Observers cannot derail trains. A moving arrow does not change its direction relative to observers."

The distance is not relative. Time is not relative. Mass of an object is not relative. The mass of an object does not depend on its speed. An object of mass does not have rest energy, $E \neq mc^2$. The rest energy is an oxymoron. An object at rest does not have kinetic energy. An object of mass does not have speed c relative to light since light is not relative. The meaningless relationship $E=mc^2$ in Special Relativity stems from the assumption that light is relative in Special Relativity. Light is not relative. Light cannot be assumed to be relative. Light does not propagate relative to observers. Every inertial frame is not a stationary frame for light. Observers cannot alter the path of light.

Special Relativity is both mathematically and conceptually invalid. General Relativity is both mathematically and conceptually invalid. The Lorentz Transform has no existence. In Special Relativity, the rest energy is imaginary, $E=jmc^2$ [10].

Frequency has no energy. Frequency of light does not have energy unless the frequency is converted to kinetic energy by charge particles, $E \neq hf$ [2,9]. There is no frequency without amplitude and hence the energy of light cannot be solely dependent on the frequency [2,9]. The relationship $E=hf$ is meaningless, nonsense.

Planck Spectrum is cavity dependent. Spectrum must be independent of the geometry of a cavity. Planck's spectrum is invalid [2]. Particles are not waves $\lambda \neq h/p$ [9]. De Broglie relationship $\lambda=h/p$ has no existence since $E=jmc^2$ in Special Relativity and Planck Spectrum is cavity dependent. Waves are not particles. Wave particle is an oxymoron. There is no wave particle duality.

The redshift of a star in a galaxy cannot be used to claim that the galaxy is moving away radially [8]. If a galaxy is moving away radially, all the billions of stars in a galaxy must have the same redshift. All the stars in a galaxy cannot have the same redshift. The redshift is due to the density variation of the medium along the path. Expanding universe cannot alter the intergalactic distances that are gravitationally bound. Galaxies are not anchored to space and hence expanding space cannot generate a radial motion of galaxies.

Space cannot expand. The redshift of a star in a galaxy cannot be attributed to an expansion of the universe. Space cannot expand or contract. A mass cannot alter the space. A mass cannot alter the time. Time is a definition. There is no time until we define a time width, a day or a year. We define the time width, a day or a year. We engineer clocks to break down the time delay we have defined into finer intervals. Clocks do not determine time. We do not get old by the clock.

Space and time cannot be brought to the equation since there is no frame of reference independent of space and time. General Relativity does not deal with space and time. General Relativity deals with the distance-delay, not space time. What Lorentz Transform has is a distance-delay function, not space-time. Distance-delay is independent of the coordinates in space and the instances of time. Universe cannot expand or contract [9,5,7]. Space cannot expand or contract.

A mass cannot alter space. The mass of an object

is not relative. Time is not relative. There is no rest energy, $E \neq mc^2$. Energy of an object has nothing to do with the speed of light unless the object is traveling at the speed of light. Speed of light is not a speed limit. An object of mass can travel at any speed; the speed of an object is not limited by the speed of light. Universe is not expanding.

The redshift of a star in a galaxy cannot be used to claim that the galaxy is moving away. To make the claim that a galaxy is moving away, all the billions of stars in the same galaxy must have the same redshift. Not all the stars in a galaxy have the same redshift; some of the stars in a galaxy can have blue shift while most of the stars have redshift; it is even possible for some of the stars in the galaxy to have no redshift at all. The redshift of a star in a galaxy cannot be used to claim that the galaxy is moving away. Expanding universe cannot alter gravitationally bound intergalactic distance. Expanding universe cannot alter the wavelength of light since the propagating light cannot be anchored to space. Space cannot expand. Universe cannot expand.

Gravitational field is a single field. A single field cannot propagate. Propagation requires a conjugate pair. Gravity cannot be a wave. Gravitational fantasy waves cannot exist even hypothetically. Artificial Higgs field is a single field. A single field cannot exist without a source. Since the Higgs field is a single field, the Higgs field cannot exist as a wave. Since there is no Higgs source, the Higgs field cannot even exist as a static field. Higgs particles and Gravitons are fantasy particles. Higgs waves and gravitational waves are fantasy waves. Special Relativity cannot even exist on paper. The Lorentz Transform cannot even exist on paper. General Relativity cannot even exist on paper. How can things that cannot even exist on paper can exist in reality?

XIII. **CONCLUSIONS**

Relativity is natural. Relativity does not require complicated artificial theories based on artificial assumptions. The essence of Relativity is that the path of a moving object or the path of a moving light burst cannot be altered relative to observers. The speed of a moving entity on its path is observer independent.

"The path is displaced relative to observers, not altered."

The speed of a moving object or the speed of a moving light burst on its path cannot be altered relative to observers. A moving train must remain on its track relative to all observers. What an object does on its path is observer independent. What a light burst does on its path is observer independent. It is the whole path of a moving entity that is displaced against the motion of observers. The displacement of the path of a moving entity relative to observers does not alter the path and the speed of the entity on its path. That is the essence of Relativity.

"The time it takes for a train to travel from New York to Los Angeles is observer independent. The time it takes for a light burst to travel from New York to Los Angeles is the same whether it is measured from a satellite or from another planet."

Relativity of light and the relativity of an object of mass are similar but polar opposite. They are polar opposite because a moving object has momentum and light does not. The massless has no momentum. A momentum cannot be forced upon the massless by proclamation as Einstein did in Special Relativity. If it has a standstill existence, it can have momentum. If it does not have a standstill existence, it cannot have momentum. Light that has no standstill existence has no momentum.

A vertically moving object of mass in a train moves vertically while it is displaced at the speed of the train in the direction of motion of the train relative to outside observers. The vertical path and the speed of the object on its vertical path are unaltered relative to passengers as well as relative to external observers. The displacement of a moving object relative to observers does not alter the path and the speed of the object on its path. The distance the object travels before it hits the ceiling of the train is the same relative to passengers and external observers. Time taken for the object to hit the ceiling is the same relative to passengers and external observers.

A vertically traveling light burst in a train travels vertically while it is displaced at the speed of the train against the motion of the train relative to passengers on the train. The vertical path and the speed of the light burst on its vertical path remain unaltered relative to external observers as well as relative to passengers on the train. The displacement of a light burst relative to observers does not alter the path and the speed of the light burst on its path. The distance a light burst travels before it hits the ceiling is the same relative to passengers and external observers. As a result, the time taken for the light burst to hit the ceiling is the same relative to both passengers and external observers, $t'=t$. The time is not relative.

If an arrow is fired using a bow inside a moving train vertically, the time taken for the arrow to hit the ceiling is the same relative to both passengers and external observers. A vertically traveling arrow is displaced in the direction of the train relative to external observers. However, that relative displacement does not affect the travel time of an arrow.

A light burst is a massless arrow. The time taken for a vertical light burst in a train to hit the ceiling is independent of observers since it is the light burst as a whole that is displaced relative to observers. The relative displacement of a light burst does not affect the travel time of a light burst. Light travels on a constant path at constant speed that is alterable only by the change of the medium. Time is not relative. No Special Relativity is required. Relativity does not require special treatment.

Einstein obtained his Relativity Factor ɣ by considering a beam of light orthogonal to the direction of motion of the frame and then forced it on the direction of the motion of the frame. Einstein's Relativity Factor ɣ in Special Relativity is valid only for two directions. What about other infinitely many directions? Einstein developed a Relativity Factor for one direction and forced it on one more direction and claimed it is the Relativity Factor for the entire frame. Einstein's Relativity Factor ɣ does not hold for the entire frame. We cannot make the Relativity Factor ɣ the Relativity Factor of the entire frame just by deriving ɣ for $\theta=90^o$ and forcing it on $\theta=0^o$. In Special Relativity, the Relativity Factor η(θ) for an inertial frame of speed v at any angle θ is given by,

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

The Relativity Factor is angle dependent. Time dilation in Special Relativity is angle dependent. If time is assumed to be relative, relative time is directional; it is unavoidable.

The elephant in the room is, why did Einstein force time dilation t′=ɣt in the direction of motion of the frame by forcing average length contraction when he could have made time absolute, t′=t, in his Special Relativity by allowing the lateral dimensions contract by the contraction factor 1/ɣ and the average length in the direction of motion to contract by the contraction factor $1/ɣ^2$? Einstein could have made time absolute in Special Relativity by allowing a moving body to contract in all directions [12].

However, we cannot make time absolute by allowing a contraction only for $\theta=90^o$ and $\theta=0^o$ just as we cannot make ɣ, which was derived for $\theta=90^o$, a constant for the entire frame by forcing it on for just one another direction $\theta=0^o$. You have to force ɣ onto all the infinitely many directions if you want to make ɣ the Relativity Factor for the entire frame. Instead of forcing t′=ɣt onto other directions by making the average forward and reverse length to contract, why don't you force the time to be absolute t′=t. If you can force t′=ɣt onto other directions, you can also force t′=t onto other directions. Einstein could have made time absolute t′=t by allowing the lateral dimension to contract by the factor 1/ɣ and the average length in the direction of motion to contract by the factor $1/ɣ^2$ in his Special Relativity since he only considered those two directions in his Special Relativity. He did not force relative time to be t′=t probably because it is not as hip as claiming time is relative!

Special Relativity is a victim of the mistakes in the Galileo-Newton Relativity. Galileo-Newton Relativity is incorrect since it derails trains. Trains cannot be derailed relative to observers. A moving train must be on its track all the time relative to all observers. Einstein derailed light in Special Relativity. Observers cannot derail light. Light must be on its track all the time relative to all observers.

If time is assumed to be relative, the Relativity Factor will be dependent on the angle to the direction of motion of the frame. Einstein derived the Relativity Factor for a direction orthogonal to the direction of motion of the frame and forced the same Relativity Factor on the direction of motion of the frame and claimed that it is the Relativity Factor for the frame. Einstein's Relativity factor is not the Relativity factor for infinitely many other directions. We cannot derive the relativity factor for one direction and force it onto one more direction and claim that it is the Relativity Factor for the entire frame, because there are infinitely many other directions in addition to those two directions. Each direction has its own unique Relativity Factor η(θ), where,

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

This is what makes Special Relativity foolish theoretically, false conceptually, and invalid in every aspect.

Time is observer independent. Distance is observer independent. The mass of an object is observer independent. It is the measuring instrument that is dependent on the frame of reference, not what is being measured. Special Relativity and General Relativity are fundamentally invalid. Any theory based on Special Relativity and General Relativity, Modern Physics in general is groundless, blind physics.

"It is the measuring instrument that is dependent on the frame of reference, not what is being measured."

The outright rejection of any criticism of Special Relativity by the physics community and the outright refusal to publish any criticism of it in their Special Relativity propaganda journals is an indication that Special Relativity has turned into a belief of a religious cult. Vatican propaganda Journals only publish papers that hallelujah the God. Physics Journals are not very different. Physics Journals only publish papers that hallelujah Special Relativity and glorify its prophet Einstein. Special Relativity is treated as a sacred text like a religious text. All that is contained in religious texts are nonsense. Believers just keep repeating what is in the text day after day hoping to go to heaven without knowing the only place they are ever going to be there is the place they are currently in.

When a lie is repeated many times again and again at home and in schools, it turns into a religious belief. Students believe what is there in textbooks is correct. If they cannot understand what is there in textbooks, they blame themselves for not being smart enough to understand it because Special Relativity is portrayed as the work of a genius and to understand the work of a genius like Einstein one has to be quite smart. If Special Relativity is portrayed as something only understood by geniuses, there would not be anyone who does not understand it. So they memorize it, pass the exams, pay the dues and call themselves scientists. There is nothing believable or of any value in any religious text, yet people believe it. Because they were told again and again the truth is in the religious text. Students were told that the truth is in textbooks.

Textbook authors present Special Relativity as the greatest theory a man has ever invented. There is nothing believable in Special Relativity. Bending of

light by observers is the fundamental fallacy of Special Relativity. It has to be one of those miracles religions are talking about. Otherwise, there is no other way for it to take place. Bending of light by gravity and bending of space by the mass of an object are the fundamental fallacies of General Relativity. The mass of an object cannot warp space. Even if the space is warpable, it is the volume of an object that must warp the space, not the mass. Gravity cannot bend light in a vacuum. Light cannot have a curved path at constant speed. Observers cannot bend light. Time is not relative. The mass of an object is not relative. Distance is not relative. Light is not relative.

Light does not propagate relative to moving frames. Every inertial frame is not a stationary frame for light. Clocks are incompatible with Special Relativity. Gravity cannot slow time. If gravity has any effect on the display of a clock, it is due to the effect of the gravity on the mechanism of the clock. The display of a clock is meaningless unless the clock is in sync with the definition of the time width, a day or a year.

If speed has any effect on the measured mass of an object, it is due to the effect of the speed on the mechanism of the measuring device. We cannot take a clock on an airplane around the world and use the display discrepancy of the clock compared to a clock on earth to claim that time depends on speed; it is silly; it is not science. We cannot take a clock on to a high mountain top and back again and use the display discrepancy of the clock compared to a clock that has not moved to claim that time depends on gravity; it is silly; it is not science.

Time is not relative. Time is not affected by observer speed. A day is not affected by the speed of an observer. A year is not affected by the speed of an observer. There is no frame of reference independent of time. There is no frame of reference that is independent of space. There is no frame of reference independent of spacetime. Without a frame of reference independent of spacetime, it is not possible to observe spacetime. Spacetime is not relative. Space and time are mutually independent. Space and time cannot be brought to the equation.

Space is not aware of if time exists. Time is not aware of if space exists. Time does not come into existence until we define a time interval, a day or a year. A day or a year is independent of observers. We cannot use the diffraction of light from a distant star near the sun to claim gravity bends light, it is silly; it is nonsense, not science. If the sun is surrounded by a vacuum there would not be a diffraction of light from a distant star. Gravity cannot bend light in a vacuum.

"*What is affected by speed and gravity is the measuring device itself, not what is being measured*."

Lemma:

What is relative is the measuring device, not what is being measured.

Special Relativity is self-contradictory since the Relativity Factor contains the terms (c-v) and (c+v). The terms (c-v) and (c+v) cannot appear unless the speed of light is dependent on the frame of reference, dependent on the observers. A theory that contains the factors (c-v) and (c+v) cannot be used to claim that the speed of light is independent of the frame of reference; it is self-contradictory. Special Relativity is self-contradictory; hypocritical.

There is no valid reason to believe Special Relativity except as a religious text. The only way to justify bending of light relative to observers is as a divine act just as the divine act of turning water into wine in the stone age. Miracles happened in the stone age when people did not have knowledge to explain natural events. Miracles do not happen in this age and time since we have the knowledge to explain most of the events. Today, if somebody claims he is a messenger of God, he would be a laughing stock in the village and beyond. Yet, people today believe the same claim that had been made in the stone age because they were taught and forced to believe it. Students believe Special Relativity because they were taught and forced to believe it. They were forced, because they cannot get a job if they do not believe it. Teachers teach Special Relativity because it is in their job description. People believe religious text and its miracles because they were taught, coerced, and forced by the law. Any criticism of religion is considered a heresy punishable by law in some backward places stuck in the stone age mindset. Special Relativity and Modern physics have turned into a sacred religious text.

Special Relativity is protected as a religious text. Special Relativity is nonsense, not science. There is nothing in Special Relativity that is correct.

If you don't believe it, just look at this Relativity Factor in Special Relativity, sit under a tree and meditate:

In Special Relativity, at any angle θ,

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

$t'=\eta(\theta)t$. The relative time is not given by $t'=\gamma t$ for an inertial frame as claimed in Special Relativity, $t'\neq\gamma t$.

If you still cannot see the problem with Special Relativity, give a bow and arrow to a friend and ask the friend to fire an arrow vertically in a moving train while you are observing it at the train station. What do you see? Do you see the arrow tilting onto an angular path? An ARROW DOES NOT TILT ONTO AN ANGULAR PATH relative to external observers.

Physical changes cannot take place relative to observers. You get the impression that the arrow is displaced in the direction of motion of the train while traveling vertically. A beam of light is a massless arrow. A burst of LIGHT DOES NOT TILT ONTO AN ANGULAR PATH relative to observers. Passengers have the impression that a Beam of Light lags behind relative to passengers on the train. No physical change to a beam of light can take place relative to observers. Observers cannot move mountains.

If I am close to an event, I see or hear it earlier than somebody further away at a distance; it has nothing to do with relativity. Distance I travel depends

on my speed. It has nothing to do with relativity. If I am running towards a lightning strike, I will observe it earlier than somebody running away from it, it has nothing to do with relativity. You do not have to be a genius to realize that. You cannot model real-time systems using Special Relativity based on the average forward and backward time and average forward and backward length contraction.

Time delay to observe an entity is not time. Time delay is independent of an instance of time and space coordinates. The distance traveled in a given time is not the space. The distance is independent of space coordinates. Time is independent of space coordinates.

The x in the Lorentz Transform is not a coordinate in space, it is the distance traveled in time delay t. The distance traveled is independent of the space coordinates and an instance in time. Time delay t to travel a distance x is independent of an instance of time and space coordinates. Distance-delay is not space-time. What is in Special Relativity is distance-delay. The distance-delay is not space-time. Space and time cannot be brought to the equation. Space and time are not relative.

"Space and time cannot be brought to the equation."

Time is a definition. We define a time width, a day or a year. We engineer clocks to break down the time we have defined into finer intervals. We cannot grow old by the clocks we engineer. Clocks do not determine time. Clocks give us time delay, not time. Clocks give us the time delay as long as the clocks are in synchrony with the definition of time interval. The defined time interval, a day or a year, is independent of observers. Time is observer independent. Time taken for a beam of light to travel from point-A to point-B is observer independent.

"The displacement of a moving arrow or a light burst relative to observers does not alter its path. The time taken for an arrow or a light burst to travel a given distance is observer independent. Time is observer independent."

In Special Relativity, relative time is directional. Time cannot be directional. Directional motion cannot generate non-directional relative time. Time cannot be relative. The ticking of clocks is observer independent. The displacement of a clock relative to observer motion does not alter the speed of the clock. Clocks have nothing to do with the speed of light.

In Special Relativity, $\mathbf{d'=d+vt'}$, a train is derailed. In the Lorentz Transform, $\mathbf{x'=x-vt'}$, a train is not derailed. Light has no momentum in the Lorentz Transform. Lorentz Transform has no existence [6,10]. Maxwell equations are not transformable onto an inertial frame. Einstein's transformation of Maxwell equations onto an inertial frame is incorrect and invalid. Lorentz Transform cannot transform Maxwell equations onto an inertial frame, impossible [6]. Special Relativity and Lorentz Transform are polar opposites [10]. Relativity does not require the Lorentz Transform, Special Relativity, or General Relativity.

"Even though every inertial frame is a stationary frame for an object of mass, every inertial frame is NOT a stationary frame for light."

"Space and time cannot be brought to the equation since there is no frame of reference independent of space and time. Distance-delay is not space-time."

"Since light propagates on a constant path at a constant speed that can only be altered by the change of the medium, the propagation of light is naturally observer independent."

"Speed of light is not the speed limit of the universe. There is nothing that prevents an object of mass traveling faster than light. Universe has no speed limit."

"A light burst is simply a massless arrow. The relativity of a light burst is just the polar opposite of the relativity of an arrow since light has no momentum. No Special theory is required for relativity. No forcing of a fake momentum on light is required in Relativity. Light has no momentum."

"Observers cannot derail light. Observers cannot tilt a vertical light beam onto an angular path."

Passengers in a closed cabin can determine the speed of the cabin by using a burst of light or using the Michelson-Morley device. The experimental observation of Michelson-Morely experiment is correct but their interpretation of the observation and mathematical derivation of expected phase difference are wrong [10]. The interference pattern in the Michelson-Morley device at any point on earth should provide the speed of the earth along the active arm of the device. The Michelson-Morley experiment did give a non-zero interference pattern even though they failed to notice its significance since they were looking for something else. They were looking for coal in a gold mine; they were aware what coal was but wasn't aware what gold was. A passenger in a closed cabin can use the Michelson-Morley device to obtain the speed of the cabin since light is not relative.

"Special Relativity is Conceptual and Mathematical Blindness, Not Science. Special Relativity brought an end to science and the dawn of Voodoo-Physics."

If you are talking about particle waves, wave particles, vector quantization, quantized spin, rest energy, position and momentum as a Fourier Transform pair, many worlds, many universes, twin paradoxes, expanding universe, a particle being at multiple places simultaneously, cat being alive and dead simultaneously, primordial soup, dark energy, dark matter, Cosmic Microwave Background as

remnant of bigbang, expanding and contracting universe, gravity bending light, observers bending light, light carrying momentum, speed of light as the speed limit of universe, anything not happening here happening in a parallel universe, relative time, relative mass, warping of space by mass, gravitational waves, Higgs particles, Higgs fields, obtaining the fundamental particles of nature by colliding charge particles, staying young by sitting in spaceship, frequency having energy E=hf, rest mass having kinetic energy $E=mc^2$, light propagating relative to observers, particle wavelength λ=h/p, quantized momentum, and many more endless list of weird things, you are not talking about science or physics, what you are talking about is voodoo physics. You might as well close your eyes and mind, light some candles, carry some ancient text, claim that it is all in the ancient text, and pray a few times a day like billions do. Don't call it physics or science though. Special Relativity and its many off-shoots are demeaning to science.

"Relativity of light does not require any special treatment. No Special Relativity is required. Propagation of light on its fixed path is naturally observer independent. Speed of motion of any entity on its path is naturally observer independent. Observers cannot derail trains. Observers cannot derail light. There is no speed limit in the universe. Speed of light cannot limit the speed of objects of mass. Light is not relative. Maxwell equations for propagation of light are not relative. Propagation of light is observer independent naturally."

"Light burst is a momentumless arrow."

REFERENCES

1. Kennedy Robert, "Einstein's Major Papers", Oxford University Press, 2013.
2. Dahanayake Bandula, "Plank Spectrum is Incorrect: Energy is Not Quantized (Plank Spectrum is Cavity Dependent)(Lenard Experiment is Incomplete and Conclusions are Incorrect), Journal of Multidisciplinary Engineering Science Studies (JMESS), ISSN. 2458-925X, Vol. 8, Issue 3, March-2022.
3. Dahanayake Bandula, "Quantum Spin-1/2: Genesis of Voodoo-Physics", Journal of Multidisciplinary Engineering Science Studies (JMESS), ISSN. 2458-925X, Vol. 6, Issue 5, May-2020.
4. Dahanayake Bandula, "Constrained Relativity (CORE): No Special Relativity Required (The Rail of Light is Fixed in a Medium; Observers cannot Derail Light)(Einstein Derail the Light; Universe Has No Speed Limit)", Journal of Multidisciplinary Engineering Science Studies (JMESS), ISSN. 2458-925X, Vol. 8, Issue 2, Feb-2022.
5. Dahanayake Bandula, "General Orbit Dynamics (GOD): Dark Nothing", Journal of Multidisciplinary Engineering Science and Technology (JMEST), SSSN: 2458-9403, Vol. 6, Issue 3, March - 2019.
6. Dahanayake Bandula, "Maxwell's Equations and Propagation of Light: Not Relative", International Journal of Astrophysics and Space Science, 2015; 3(6): 77-88.
7. Dahanayake Bandula, "Universe in a New Light: Inconvenient Reality (iCRY)", Journal of Multidisciplinary Engineering Science Studies (JMESS), ISSN. 2458-925X, Vol. 5, Issue 7, July-2019.
8. Dahanayake Bandula, "Expanding Universe: Blind Physics (Star Redshift is Not the Doppler Effect)(Redshift is Wavelength Shift, There is No Frequency Shift)(Neither the Observers Nor Gravity Can Bend the Light), Journal of Multidisciplinary Engineering Science Studies (JMESS), ISSN. 2458-925X, Vol. 9, Issue 2, February-2023.
9. Dahanayake Bandula, "Quantum Mechanics: Existential Crisis (Eigenspace of Position Operator is Not Unique)(Position and Momentum Operators in QM Cannot Coexist)(If Light Consists of Photon E=hf, Light Cannot Exist)(Heisenberg Shenanigans Cannot Exist), Journal of Multidisciplinary Engineering Science Studies (JMESS), ISSN. 2458-925X, Vol. 9, Issue 4, April-2023.
10. Dahanayake Bandula, "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." Journal of Multidisciplinary Engineering Science Studies (JMESS), ISSN. 2458-925X, Vol. 9, Issue 4, July-2023.
11. Dahanayake Bandula, "Universal Relativity: Absolute Time and Mass", International Journal of Astrophysics and Space Science, 2015; 3(1): 7-15.