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ABSTRACT

A brief, simple, and solid disproof, by contradiction, of Dr. Einstein's Special Relativity is presented.

POSTULATE

Simultaneous and absolute time, such as used in GPS, is a scientific and experimental reality.

ARGUMENT

Assume a deep space location and vacuum, to isolate (for the moment) this discussion away from gravity, electric, magnetic, electromagnetic, and Sagnac forces/fields; an "ideal" scientific thought experiment setting.

In such a setting, light travels equal scalar distances in equal times, whether or not two light sources are in motion relative to each other. In this limited sense, light does not "take on" the velocity of its source. This is a truly remarkable and intriguing property of light.

However, when observed from a frame different from the source's frame, which has motion v relative to the source's frame, the RELATIVE velocity of light is quite different; namely $c + v$ or $c - v$, depending on the direction of v . Dr. Einstein did not distinguish between these two completely separate situations, and he thus incorrectly stated in his famous 1905 paper[1] that "The speed of light, RELATIVE TO ANY OBSERVER, is constant. This postulate is simply dead wrong.

The “speed of light” as is referred to in Dr. Einstein’s 1905 paper[1], is actually two things; namely the linear velocity of light relative to the source’s original location in a defined frame in space, and the RELATIVE linear velocity of that exact same light pulse, as measured in the second frame which has a linear velocity relative to the above defined frame in space.

The above defined light pulse starting location in space at any time t , where t is the elapsed time since the light was pulsed, is distance vt in the exactly reverse linear direction of v .

LIGHT PROPERTIES REMARKABLE

The remarkable behavior of light (without an aether) is that it travels equal scalar distances in equal times, and its velocity is not affected by the velocity of the source except for creating a red shift or blue shift as viewed at the destination.

This is “as though” light travels analogous to a water wave where the frequency of the water wave does not affect its velocity. But this analogy is not completely valid. Space has the ability to store energy, such as a boulder on top of a hill storing potential energy in the gravitational “field,” or charged particles storing energy in an electric “field.” A water wave does contain stored energy. Space has the remarkable ability to “store” and “give back” energy from a propagating electromagnetic “field,” and this is governed by the permeability of free space (measured in Henrys per meter), and the permittivity of free space (measured in Farads per meter). The velocity of such electromagnetic phenomena is $c = 1/\text{square root of (permittivity)(permeability)}$.

We simply do not understand how these energies are “stored” and “given back” from the above discussed “fields.” What is more, electromagnetic phenomena, such as light or radio, might simply be “inch worm” or “leap frog” self propagating in nature.

One might argue that it is “as though” space contains some kind of electromagnetic conducting aether, but this does not explain (model) how such

an aether facilitates the “storage” and “give back” of energy in gravitational, electric, or magnetic “fields.”

Aether might be something that, as with glass or water, simply slows down light in what would otherwise be “pure space” (without an aether), if such a “pure” space were even possible, and that such an aether might not be at all essential or even relevant for electromagnetic propagation.

The Dayton-Miller experiments[2] might suggest that an aether does exist and does affect the speed of light, but this certainly does not prove that such an aether present is actually required for electromagnetic propagation in the same way that air is needed for the propagation of sound.

It could just as well be argued that space can somehow do what it appears to do (conduct light, radio, etc.) without any such aether enabler. The aether light conducting medium concept might just be another human idea to try and make a “hands on” analogy for something which is no better or even more poorly understood by using such an analogy.

A PRACTICAL ILLUSTRATION

Consider a rail car moving forward (from left to right) at velocity v relative to a train platform. A light is pulsed sideways across the railcar from point A on the far side of the car to point B on the side of the car nearest the train platform, AB being one side (perpendicular to car motion) of a right triangle ABC. The light flash moves along AB, a distance ct in the rail car frame. Point C is defined as the point where the light arrives (infinitely close to the near side of the rail car) at time t .

Point C is infinitely close to the side of the rail car but actually located on the train platform such that BC, the base of triangle ABC, has length vt' .

So, in the railcar frame, the light goes along line AB, a distance ct , and in the platform frame, the car moves along line BC, a distance vt' . In the platform

frame, the light appears to have traveled further, along triangle ABC hypotenuse AC, an apparent distance ct' .

DR. EINSTEIN'S INCORRECT (LORENTZ) TRANSFORMATION

Using the Pythagorean Theorem, Dr. Einstein incorrectly transformed between these two different frames and calculated:

$(ct)^2 + (vt')^2 = (ct')^2$ thus $(c^2)(t^2) + (v^2)(t'^2) = (c^2)(t'^2)$ or $(c^2)(t^2) = (c^2)(t'^2) - (v^2)(t'^2)$ or $(t^2) = (t'^2) - (v^2)(t'^2)/(c^2)$ or $t = [t']$ [square root of $1 - (v^2)/(c^2)$] or Dr. Einstein's famous time slowing down formula:

$$t = t' \sqrt{1 - v^2/c^2}$$

followed by all of the directly related incorrect Special Relativity formulas, including $E = Mc^2$. See www.k1man.com/b

If, instead, the light pulse is flashed forward from point A on the rail car to point D, infinitely close to the front of the railcar, but outside of the rail car, and thus in the platform frame, the similar Dr. Einstein style transformation would be:

$ct + vt' = ct'$ or $ct = ct' - vt'$ or $t = t'(1 - v/c)$, or time slows down even more on the exact same clock on the exact same rail car; a contradiction; thus Dr. Einstein was wrong. QED Light pulsed toward the back of the rail car actually leads to time speeding up!

$$t = t' (1 + v/c)$$

Time cannot both slow down and speed up on the same clock! Dr. Einstein was dead wrong! QED

Note: The above disproof of Special Relativity, by contradiction, holds equally with or without a light conducting aether, since the geometry of the argument is not changed by the presence of a light conducting aether.

BACK TO EARTH AND GPS

We now bring the above ideal scientific thought experiment setting back to earth, which rotates around its axis, around the sun, around the galaxy, etc., and must now consider the Sagnac effect plus all the real world fields that might affect clock retardation (gravity, magnetism, electric, and electromagnetic) as well.

Since the pure speed of light is constant in a single frame, an earth centered inertial (ECI) single frame is convenient for GPS operations, since the Sagnac effect can be most easily adjusted for in an ECI frame. All clocks everywhere are automatically kept synchronized and, together with knowing where all satellites are at every moment, GPS is made to work. Special Relativity and General Relativity are not relevant in any way in proper GPS operations.

CONCLUSIONS

Dr. Einstein's statement that "The speed of light, relative to any observer, is constant" is not correct, and his use of that incorrect postulate led to all sorts of Special Relativity nonsense including the incorrect deriving of $E = MC^2$, which most physicists think is the source of energy in a Hiroshima type fission bomb.

The energy from a fission bomb is, instead, from electric forces between the positive chunks of split uranium violently flying apart. See www.k1man.com/c2. This author and Physics Nobel Laureate, Dr. Richard Feynman, independently came to this exact same conclusion, joined recently by Dr. Edward Henry Dowdye during his NPA presentation on 23 March 2013 contesting Dr. Einstein's theory of General Relativity. Click on www.k1man.com/Dowdye and also www.k1man.com/Conf130325.mp3

Special Relativity and all of its many incorrect formulas must be removed from all of 21st century physics, textbooks and papers, in order for scientifically valid progress to be made by modern day physicists. Incorrect Special, and, arguably, General Relativity, underpin much or most of current day mainstream and even dissident physics.

“To kill an error is as good a service, and sometimes even better than, establishing a new truth or fact.”

Charles Darwin

"Great causes are never tried on the merits; but the cause is reduced to particulars to suit the size of the partisans, and the contention is ever hottest on minor matters." - Ralph Waldo Emerson - From his essay "Nature" 1844

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(1) ON THE ELECTRODYNAMICS OF MOVING BODIES by A. Einstein, “Zur Elektrodynamik Bewegter Korper,” Annalen der Physik, 17, 1905.

[2] “The ether-drift experiments at Mount Wilson during the last four years, 1921 to 1925, lead to the conclusion that there is a relative motion of the earth and the ether at this Observatory of approximately nine kilometers per second.” - Dayton C. Miller, 1925

[3] RELATIVITY FOR THE LAYMAN by James A. Coleman, Signet, New York, 1958



Glenn A. Baxter, P.E., at his home in Belgrade Lakes, Maine U.S.A.

See www.k1man.com/g



Glenn A. Baxter, P.E., age 4, with his dad, Frank H. Baxter (Bachelor of Science Degree, Mechanical Engineering, 1914, Rhode Island State College), and President of Frank H. Baxter Associates, 370 Lexington Avenue, New York City. See www.k1man.com/fhb and also www.k1man.com/w10 and www.k1man.com/Loons