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RESEARCH ARTICLE

NEW TIME DILATION, TIME CORRECTION, PHOTOELECTRIC EFFECT, DE BROGLIE EQUATION, AND HYPOTENUSE AXIOM METHOD

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ABSTRACT

Time dilation came suddenly into quantum mechanics but the impression is lasting. In this article, the author discusses features introduced to implement time correction and various methods involving lambda method demonstrating properties of time dilation. The photoelectric effect and DE Broglie equations are discussed and are derived for time correction showing slightly different results as well as corrections based on time that are important. The hypotenuse axiom method is utilized to calculate time correction and time dilation effectively.

INTRODUCTION

The plot of maximal velocity by time correction for change in time correction displays a right triangle with elliptical energy. The right triangle estimate method can be used to approximate the parameter of the third leg, potentially distance or distance squared because the relationship of rate times time equals distance. Time dilation plots for velocity shows that higher speeds and higher radii are associated for the time dilation formula where c can be speed of light (Enthought, Python Software Ver. 7.3.1) which is the second approach. That approach involves quantum terms and formulae and new derivations from omega time corrections. Time correction calculations show patterns where the trend approaches 0 with 't_c'. Plus the time estimate product formulation demonstrates symmetry for the OPERA experiment involving neutrinos a type of dark matter (Carroll, 2011). The plot shows for dark matter, that uncertainty is more for higher velocity in terms of energy difference and time correction method using a SAS 9.3 plot and new methods as time increases. Time dilation by Einstein involves the equation:

$$\Delta t = \frac{\Delta t_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

Einstein states that time and distance are not constant with respect to inertial frame of reference. He further states there is no absolute time or distance. The author recommends the time correction method (Agravat 2012; Agravat 2013) that corrects special relativity equations based on velocity corrected for time and yielding special relativity, momentum corrected for time and velocity with lambda_p for wavelength as a parameter. Time dilation states that moving clocks will move slower than those at rest.

MATERIALS AND METHODS

Time Dilation for Elliptical Orbit

The relationship between time difference time and energy of states is used to calculate and derive a new relationship of time difference similar to proper time. As with the time dilation and length contraction problem shown, the solution for time dilation in relationships with energy are similar to the solution for proper time where there is a direct relationship with one variable time difference when one of the other variables was energy among the possibilities shown.

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Hypotenuse Axiom II

$$\Delta t = \sqrt{\left(\frac{t_c^{2}}{t^{2}_{tc=0}}\right) + (t^{2}_{tc=0})^{2} + 1}$$

$$\Delta t = \sqrt{\frac{t_c^{2}}{\frac{(\pi ab)^{2}}{v}} + \left(\frac{(\pi ab)^{2}}{v}\right)^{2} + 1}$$

The time points are .00765 and .0480 seconds and velocities are 299677 km/s and 47695 km/s for the elliptical orbit method (Agravat 2013).

1) $$R * T = D$$
$$R = \frac{D}{T} = \frac{730.085}{17.577} = 41.52 \; km/s$$

2) $$R * T = D$$
$$R = \frac{D}{T} = \frac{730.085}{110.30} = 6.62 \; km/s$$

The time dilation method with the hypotenuse axiom results show that the maximum velocity correction for dark matter neutrino particles has a difference of .00765 seconds and rate of 41.52 km/s for the time correction. The slower or 2π time correction method has a time difference of .0480 seconds and a rate of 6.62 km/s. According to Einstein and length contraction of Lorentz, one expects less length, or distance, and for moving objects that have higher speeds. $\boldsymbol{\lambda}_p$ gives values of 4.09 E+11 and 2.57 E+12 for the two relative speeds based on time correction indicating shorter lengths for higher speeds and more length for slower speeds.5.34E+13 km/s and 5.35E+13km/s are the rates that show slower rates and less length for the faster velocity and slower rates with more length with higher rates. Hence the $\boldsymbol{\lambda}_p$ is a means for proving the time dilation principle along with time correction!

Length contraction becomes possible when the rates or velocities above 41.52 and 6.62 km/s are substituted into the rate times time equation that results in values of 55.24 seconds and 346.46 seconds for the time correction values and respective corrections. This results in 346.46 km and 2293 or (pi*730.085) km for the faster and slower times or the slower rate produces the original distance and faster rate with less distance or length contraction. Einstein predicted that time will show less time for higher velocities and the results do confirm the prediction that many scientists have been cautious to approach. The author himself places importance on the elliptical corrections and some caution with due respect which are slightly slower than the 2π time correction method that demonstrated similar value of special relativity energies like Einstein's $E=mc^2$.

$$1)(c) - \frac{D}{t} \sim 41.52 \sim 299730 \; km/s$$
$$2)\, 47695 - 6.62 \sim 47,688 \; km/s$$
$$3)\, v_1 t_c \sim v_2 t_{2\pi}$$
$$4)\, \frac{t_c}{t_{2\pi}} \sim \frac{1}{2\pi} \sim \frac{v_2}{v_1} \sim 0.159103$$
$$5)\, 299677 - 41.52 \sim 299635$$
$$6)\, \frac{v_2}{v_1} \sim \frac{47688}{299635} \sim \frac{1}{2\pi} \sim 0.159153$$

Cosine inverse of 0.159103 yields 80.845 and 80.842 degrees for the later ratio of v_1/v_2. The difference of the two angles yields .00273 whose invers cosine is 89.943 degrees for former minus latter and latter minus former yields -.003 and 90.17 degrees. This shows that speed of light gives a ratio of velcoties, according to the velocity law (Agravat 2013), that is less than 90 degrees if the slower velocity is utilized the ratio and inverse cosine is 91 degrees or greater than the assumptions of the hypotenuse axiom method of a right triangle relationship of energy of special relativity and Heisenberg Uncertainty Principle (Agravat 2013). And Sine squared plus cosine squared of the first ratio from speed of light yields exactly 1.

$$1)\, \cos^{-1}\left(\frac{v_2}{v_1}\right) \sim \frac{1}{2\pi}$$
$$2)\, \cos^{2}\left(\frac{v_2}{v_1}\right) + \sin^{2}\left(\frac{v_2}{v_1}\right) = 1$$

The velocity equation law of time correction shows that the ratio yields a value greater than gravity on earth which may relate to the time dilation by time correction principle. The difference from gravity is about .1755 or 351/2000.

$$1)\ \frac{v_1 t_c}{v_2 t_{2\pi}} \sim 10.018$$

$$2)[\frac{v_1 t_c}{v_2 t_{2\pi}}]^{-1} \sim 9.982\ m/s^2$$

Gravity and Force of Time Correction

$$F_{ec} = \frac{-mD}{t_{ec}^2} =$$

$$F_{2\pi ec} = \frac{-mD}{t_{2\pi ec}^2} =$$

$$F_{new} = \frac{-Gm_1 m_2}{vt_c}$$

$$G = -\frac{F_{ec} * vt_c}{m_1 m_2}$$

$$F_{new} = \frac{-Gm_1 m_2}{vt_{2\pi c}}$$

$$G_{2\pi} = -\frac{F_{2\pi ec} * vt_{2\pi c}}{m_1 m_2}$$

$$G : G_{2\pi} \sim 2\pi^2$$

$$\cos(2\pi^2)^2 + \sin(2\pi^2)^2 = 1$$

Proofs on Time, Energy, and Hypotenuse Axiom at Time Zero

$$t = \Delta t$$

$$E = E_{sr}$$

$$E = E_{tdc}$$

$$t_c = \sqrt{\frac{\Delta t^2}{E} + E^2 + 1}$$

$$t_c = \sqrt{\frac{\Delta t^2}{E_{sr}} + E_{tdc}^2 + 1}$$

$$\frac{\Delta t^2}{E_{sr}} \sim \frac{t_c^2}{E_{tdc}}$$

$$t_c = \sqrt{\frac{t_c^2}{E_{tdc}} + E_{tdc}^2 + 1}$$

$$t_c = \sqrt{t_c^2 + E_{tdc}^3 + E_{tdc}}$$

$$t_c \sim t_c$$

$$T = 0$$
$$P(c) = c^3$$
$$c = \sqrt[3]{P(c)}$$
$$t = \sqrt{\frac{P(c) - c^3}{\exp^{1+c}}}$$
$$t = \sqrt{\frac{P(c) - \sqrt[3]{P(c)}^3}{\exp^{1+c}}}$$
$$t = \sqrt{\frac{0}{\exp^{1+c}}}$$
$$t^2 = \frac{\sqrt{0}}{\exp^{1+c}}$$
$$t = \frac{\sqrt{0}}{\sqrt{\exp^{1+c}}}$$

$$c = \frac{(D)}{t}$$
$$c = \frac{(D)}{\sqrt{\exp^{1+c}}}$$
$$c^2 = \frac{D^2}{\exp^{1+c}}$$
$$2\ln c = 2\ln D - \ln(1 + c)$$
$$\ln c = 2\ln D$$
$$c = D^2$$

$$if : t = 0$$
$$t = D$$
$$t = D \sim (vt)$$
$$t \sim \frac{1}{\sqrt{v}}$$
$$t^2 = v^2$$
$$t = v$$

$$t = \sqrt{\frac{P(c) - c^3}{\exp^{1+c}}}$$
$$c^2 = \exp^{1+c}$$
$$c = -1 - c^2$$
$$c^2 - c + 1$$
$$2\ln c - \ln c + 0$$
$$\ln c + 0 = 0$$
$$c = 1$$

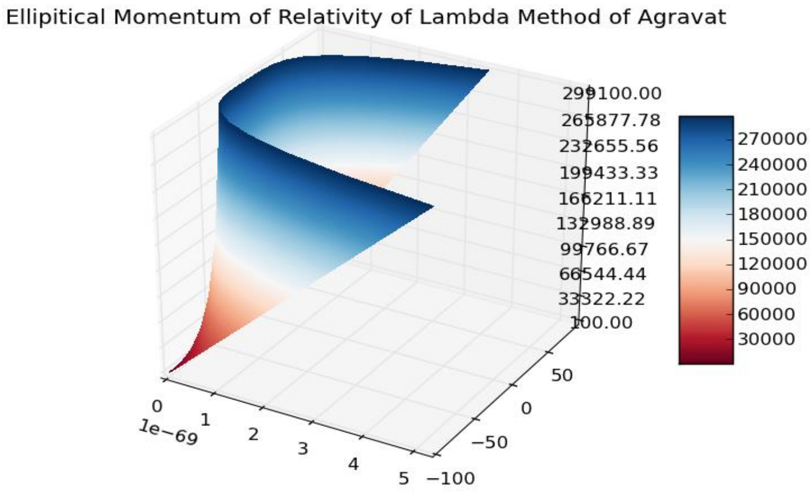

Figure 1. Elliptical Momentum

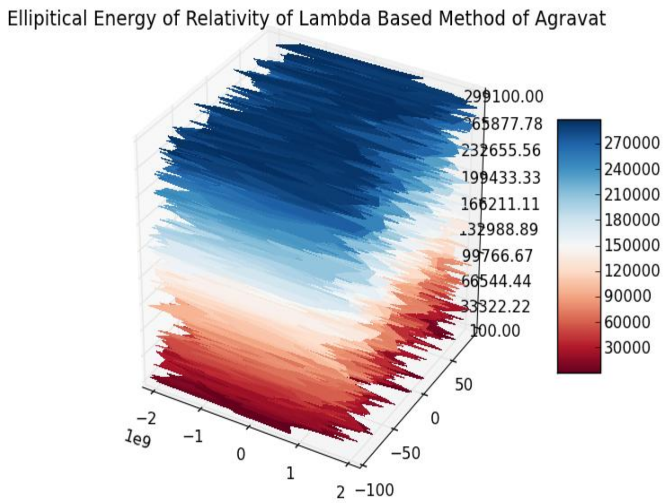

Figure 2. Elliptical Energy

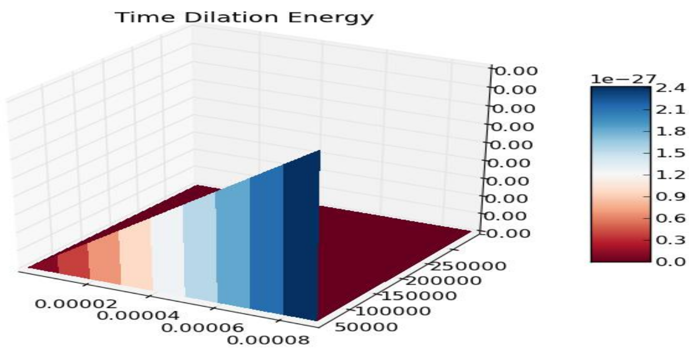

Figure 3. Time Dilation Energy

Time dilation energy in Figure 3 produces separation of bands such as in a prism where higher darker shades of blue at higher times and velocity with darker shades of red at lower times are comparable to red and blue shifts (Moskowitz, 2012). The time can be formulated as square root of velocity in a transformation that shows symmetry of this dark matter. Visible light is expected to have both waves and particle nature.

$$t_c = \frac{(2\pi r)}{v}$$

$$E_c = \frac{m(2\pi r)^2}{t_c^2}$$

The conclusion about the right triangle proof is that:

- As mass approaches infinity Δt^2+1 approaches infinity and energy approaches 0
- If energy approaches 0, and Δt^2+1 then E~ mD^2+1/t_c^2 approaches 0.

This situation is possible when there are systems that have infinite mass and infinite time resulting in proofs of limits that gives E going to 0 and possibly time going to infinity if a constant such as 1 is added to the term Δt squared plus 1, a constant, for energy of time dilation for mass approaching infinity. This scenario may not be practical on earth because mass is not infinite on earth where limitations may be more. The infinite time may be found in black holes with regards to infinite space time as defined by the Δt^2+1 proof regarding gravitational singularity (Wikipedia) where no rotation is found that may be an analogue of the limit of t approaching infinity:

$$Limit_{v\to\infty} \frac{m^2 D^2+1}{t^2 v^2} = 0$$

Time Dilation and Time at 0

- At T=0, P*t=E and Time Correction and time equation (Agravat 2012)
- IF P_N*t=1) 6.25E-42 2) 6.24E-46 (Newton stated time correction does not happen).
- OR Velocity is proportional to Distance over time Times Square root of mass as in the relationship of velocity, time, and mass

$$\sqrt{m}\,C \sim \frac{D}{T}\sqrt{M}$$

$$E_{t=o,Tc} = mc^2 \to \frac{mD^2}{T^2}$$

- Energy is smaller for special relativity energy at Time = 0 and time correction based on lower velocities.
- Special relativity equation holds for time at zero based on time correction.

$$\frac{3mD^2}{t^2} = 3E_{t=0}$$

$$3(mc^2{}_{t=0}) = \frac{3mc(\pi AB)^2}{t^2}$$

$$3E_{t=0} = c\,3E_{tdc}$$

$$3E_{tdc}\,c = 3E_{t=0}$$

$$3E_{tdc}\,c = 3E_{t=0}$$

$$3\frac{mcD^2}{(t_{ec})^2} = 3E_{t=0}$$

$$(t)^2 = \frac{mcD^2}{E_{t=0}}$$

$$(t)^2 = \frac{D^2}{c}$$

$$D \sim t\sqrt{c}$$

$$(t) = D\sqrt{\frac{1}{c}}$$

$$D = \frac{t}{\sqrt{\frac{1}{c}}}$$

$$\frac{1}{c} = \frac{t^2}{D^2}$$

$$C = \frac{D^2}{t^2}$$

$$D_{t=0} \sim t\sqrt{c}$$

Therefore for time dilation at time regarding zero:

- At maximum velocity of neutrinos, 299677 km/s and tc of 0.00756, distance ~ 4.18 km
- At 2pi correction velocity and time of 47695 and 0. 048 seconds D~10.48 km
- If the new distance is inserted back in to the rate time x time equation according to classical laws of physics, then

a. R=4.18km / 0.00765~546.46km/s
b. $R_{2\pi}$=10.48km / 0.048 s~209.34km/s
c. Distance is less for higher velocities as Einstein stated.
d. For hypotenuse axiom method time points:

i. R=4.18/17.577=0.237 km/s
ii. R=10.48/110.30=0.095 km/s
iii. R_2 / R_1=0.40
iv. Cos^{-1} (0.40) = 66.36; Sin^{-1}(.4) = 23.57~89.90 or about 90 degrees for the sum following hypotenuse axiom method.
v. Cos^2(0.40)+Sin^2(0.40)=1
vi. D= R x T=(546.46)*17.577=9605.12 km (Einstein expected less distance for higher velocity)
vii. D= R x T=(209.30)*110.30= 23,085 km
viii. Time ~$Distance_{=0}$ / sqrt (v) =0 .1788s and 0.0050s for 2pi correction hence time correction for $Distance_{=0}$ does not show a relationship for right triangle because the sum of inverse cosine is greater than 90 degrees. The ratio of the two times is about 35.76 seconds from 2pi to max for inverse of the ratio or max over 2pi correction. Time dilation of Einstein yields a value of gamma of 36.1 seconds with velcoties provided using time correction not 'proper time'. However the relationship stipulated by the author is an inverse relationship of speed for energy, force, and momentum, and force. In addition time dilation my really occur due to differences in gravity between objects.

- Time dilation may occur for time 0 corrections because the distances are less and speed is more for classical laws when time correction.
- Based on Distance at time 0 and speeds that are slower new rates are close to original estimates of neutrino velocity based on time correction:

e. R = $(4.18)^2 / (0.00765)^2$ ~ 298,558.67 km/s.
f. R = $(10.48)^2 / (0.048)^2$ ~ 47,669.4 km/s.

Momentum and Inelastic Collisions Plus Time =0

$$t_1 = .00765 \quad ; t_2 = .0480 \quad ; v_1 = 299677 \quad ; v_2 = 47695 \quad ;$$

$$t_i = \sqrt{v_i}$$

$$\frac{E_1 t^3{}_1}{D} + \frac{E_2 t^3{}_2}{D} = \frac{E'_1 t^3{}_1}{D} + \frac{E'_2 t^3{}_2}{D}$$

$$\frac{m_1 v_1{}^3 8\pi^2 t^3{}_1}{D} + \frac{m_2 v_2{}^3 8\pi^2 t^3{}_2}{D} = \frac{m_1 v_1{}'^3 8\pi^2 t^3{}_1}{D} + \frac{m_2 v_2{}'^3 8\pi^2 t^3{}_2}{D}$$

$$\frac{8\pi^2}{D}(m_1 v_1{}^3 t^3{}_1 + m_2 v_2{}^3 t^3{}_2) = \frac{8\pi^2}{D}(m_1 v_1{}'^3 t^3{}_1 + m_2 v_2{}'^3 t^3{}_2)$$

$$\frac{8\pi^2}{D}(m_1 v_1{}^3 t^3{}_1 + m_2 v_2{}^3 t^3{}_2) \sim \frac{8\pi^2}{D}(m_1 v_1{}^4 \sqrt{v_1} + m_2 v_2{}^4 \sqrt{v_2})$$

$$(A)\ldots \frac{8\pi^2}{D} m_1 v_1{}^3 t^3{}_1 \sim \frac{8\pi^2}{D} m_1 v_1{}^4 \sqrt{v_1} \ldots(B)$$

$$t_c \Rightarrow t \sim \sqrt{v}$$

$$T = 0$$
$$P(c) = c^3$$
$$c = \sqrt[3]{P(c)}$$
$$t = \sqrt{\frac{P(c) - c^3}{\exp^{1+c}}}$$
$$t = \sqrt{\frac{P(c) - (\sqrt[3]{P(c)})^3}{\exp^{1+c}}}$$
$$t = \sqrt{\frac{0}{\exp^{1+c}}}$$
$$t^2 = \frac{\sqrt{0}}{\exp^{1+c}}$$
$$t = \frac{\sqrt{0}}{\sqrt{\exp^{1+c}}}$$

$$\exp^t = \frac{1}{\exp^{\sqrt{\exp^{1+c}}}}$$
$$t = -.5 \exp^{1+c}$$
$$\ln t = -.5 \ln(1 + c)$$
$$\ln t = -.5 \ln c$$
$$\ln t = -.5 \ln c$$
$$t = c^{-.5} = \frac{1}{\sqrt{c}}$$

A is a system that has specific coordinates and time or involves Pc momentum of time correction.
B is a system with t=0 and t is square root of velocity when t= 0 (Agravat 2012). The slower velcoties are only slightly different. This method shows a difference of 6.65E-25 where t at 0 is slightly greater for slower velocity. The question arises of whether semi elastic collision's occur since the maximum momentum are so close and lower velocities are still producing higher values of momentum supporting 'momentum paradox' for time correction. Plus at time zero, if probability is 0, time $t_{t=0} \sim \frac{1}{\sqrt{v}}$

A=1.13E-40 + 4.14-26 and B=1.12E-40+7.07E-25. The result is momentum is higher for time in system B. The Ratio of A for high to low velocity is: 2.725E-15 times less.

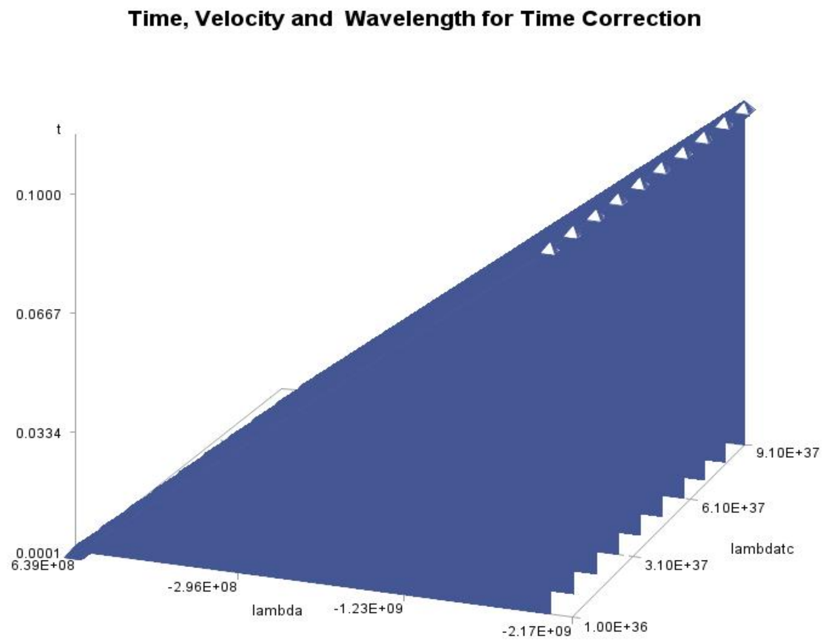

Figure 4. Wavelength and Lamda Tc

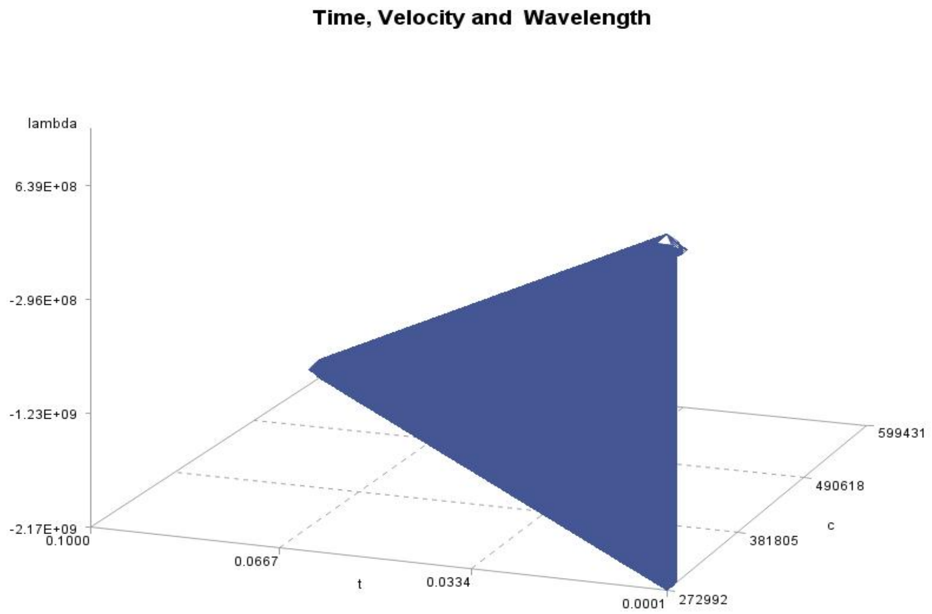

Figure 5. Time, Velocity, and Wavelength

The elliptical wavelength based correction method matched for time and velocity shows an equilateral triangle relationship time correction and velocity correction are matched with lambda. Time, velocity, and lambda for time correction show a right triangle that has zig zags.

Charge of Neutrinos

$$E_c = \frac{m(2\pi r)^2}{t^2}$$

$m = 2.73E-49$

$r = 7.21E-21\ m$

$t \sim .000240006\ s$

$c_v = -(2\pi r)^2 \sim -2.05E-39\ m^2$

$$E_{cnew} = \frac{m(2\pi r)^2 \exp^{1+c}}{P(c)-c^3}$$

$$E_{cnew} = \frac{m(2\pi r)^2 \exp^{1+c}}{P(c)-c^3}$$

$c = -2.05E-39$

$$E_{cnew} = \frac{m(2\pi r)^2 \exp^{1+c}}{P(c)-c^3}$$

$E \sim nmv$

$t_1 \sim .00024006\ s$

$t_2 \sim 60\ ns$

$V_e \sim \frac{(2\pi r)}{T} \sim 7.53E-17\ km/s$

$V_e \sim \frac{(2\pi r)}{T} \sim 1.88E-19\ km/s$

$E_{cnew}(e^-) = \frac{m(2\pi r)^2 \exp^{1+c}}{P(c)-c^3} \sim \frac{1.51E-87}{4.878E38} \sim$

$\sqrt{E_{cnew1}(e^-)} \sim \sqrt{\frac{1.51E-87}{-4.878e38}} \sim \sqrt{-3.09E-126} \sim 1.75E-63i$

$\sqrt{E_{cnew2}(e^-)} \sim \sqrt{\frac{1.12E-86}{-4.878E38}} \sim 4.79E-63i$

$\frac{\sqrt{E_{cnew1}(e^-)}}{\sqrt{E_{cnew2}(e^-)}} \sim .365 \sim 2.73714^{-1}$

This ratio is proportional to time for where Probability P(c) cancels out due to there being no way to possess the same time and space in probability of a particle to explain uncertainty. The charge of neutrinos is complex. The ratios of observed time and time difference for neutrinos on in the CERN OPERA experiment render the ratio of energy correction new based on probability and independence.

New Derivation of Photoelectric Effect and DE Broglie Equation with Time Correction

$$\sqrt{.5}\,c = \frac{(\pi ab)}{t_{c\sim}}$$

$$c^2 = \frac{2(\pi ab)^2}{t^2{}_{c\sim}}$$

$$mc^2 = \frac{2m(\pi ab)^2}{t^2{}_{c\sim}}$$

$$Pc = \frac{2m(\pi ab)^2}{t^2{}_{c\sim}} = \frac{h}{\lambda}c$$

$$E = \frac{2m(\pi ab)^2}{t^2{}_{c\sim}}$$

$$\lambda = \frac{hct^2{}_{c\sim}}{2mc(\pi ab)^2}$$

$$t^2{}_{c\sim} = \frac{2mc(\pi ab)^2\lambda}{hc}$$

$$Pc = \frac{2m(\pi ab)^2}{t^2{}_{c\sim}} = \frac{h}{\lambda}c$$

$$\frac{Pc\lambda}{hc} = \frac{2m(\pi ab)^2\lambda}{hct^2{}_{c\sim}}$$

$$Pc\lambda = \frac{2m(\pi ab)^2\lambda}{t^2{}_{c\sim}}$$

$$Pc\lambda = \frac{2m(\pi ab)^2 hct^2{}_{c\sim}}{t^2{}_{c\sim}2mc(\pi ab)^2}$$

$$Pc\lambda = \frac{2m(\pi ab)^2 hct^2{}_{c\sim}}{t^2{}_{c\sim}2mc(\pi ab)^2}$$

$$c\lambda = \frac{2m(\pi ab)^2 hct^2{}_{c\sim}}{t^2{}_{c\sim}2mc(\pi ab)^2}$$

$$P\lambda = \frac{h}{c}$$

$$Pc\lambda = h$$

$$E\lambda = h$$

$$E_{pc} = \frac{h}{\lambda} \rightarrow$$

$$if : Pc = \frac{2m(\pi ab)^2}{t^2{}_{c\sim}} = \frac{h}{\lambda}c \ldots or \ldots$$

$$E = \frac{2m(\pi ab)^2}{t^2{}_{c\sim}} = \frac{h}{\lambda}$$

$$E = \frac{2m(\pi ab)^2\lambda}{ht^2{}_{c\sim}}$$

$$E = \frac{2m(\pi ab)^2 hct^2{}_{c\sim}}{2mc(\pi ab)^2 ht^2{}_{c\sim}}$$

$$E = 1 = \frac{h}{\lambda} = mc^2$$

$$Pc = \frac{h}{\lambda} = mc^2$$

$$P = \frac{h}{\lambda c} = mc$$

$$P_{pc} = \frac{h}{\lambda c}$$

DISCUSSIONS

$$1)\; E = \frac{hc}{\lambda} \rightarrow E_{pc} = \frac{h}{\lambda} \rightarrow P_{pc} = \frac{h}{\lambda c}$$

$$2)\; E = \frac{h}{\lambda} \rightarrow E_{pc} = \frac{h}{\lambda} \rightarrow P_{pc} = \frac{h}{\lambda c}$$

$$E_{pc} = \frac{h}{\lambda}$$

$$P_{pc} = \frac{h}{\lambda c}$$

$$\frac{E_{pc}}{P_{pc}} = \frac{\frac{h}{\lambda}}{\frac{h}{\lambda c}}$$

$$\frac{E_{pc}}{P_{pc}} = c$$

$$E_{pc} = c * P_{pc}$$

$$mc^2 = mc^2$$

This method allows for the proof of energy of special relativity in time correction assuming that time may exist and is not zero. The proof indicates that time correction does not demonstrate the photoelectric effect value of Einstein or De Broglie's equation of momentum when time correction is applied. The proof borrows from the derivation from "Time Correction of Energy and Momentum" when deriving momentum based on wavelength or Lambda$_p$. With time, special relativity energy is conserved as the first law of thermodynamics asserts that energy is neither created nor destroyed. One case the photoelectric effect with ratio of Energy over momentum yields support of special relativity while in energy correction supports special relativity for momentum over energy (Agravat 2013). The question is which happens first; the time correction of energy or the correction based on time, plus what if time is near zero? The answer may be based on where one is in the solar system. Energy is infinite at parameters of zero for mass and time such as in a black hole (Agravat 2012). If Parameters of time are negative, then time is positive (Agravat 2012). If parameters are positive, then time is hyper-geometric.

New Time Correction Based Photoelectric Effect and DE Broglie Equation Proofs

$$3)\; P_{pc} = \frac{2m(\pi ab)^2}{R_c t^2{}_{c\sim}} = \frac{h}{\lambda c}$$

$$\frac{P_{pc}\lambda c}{h} = \frac{2m(\pi ab)^2 \lambda c}{hR_c t^2{}_{c\sim}}$$

$$\frac{P_{pc}\lambda c}{h} = \frac{2m(\pi ab)^2 \lambda c}{hR_c t^2{}_{c\sim}}$$

$$\frac{P_{pc}\lambda c}{h} = \frac{2m(\pi ab)^2 hct^2{}_{c\sim} c}{2mc(\pi ab)^2 hR_c t^2{}_{c\sim}}$$

$$\frac{P_{pc}\lambda c}{h} = \frac{1}{R_c}$$

$$P_{pc} = \frac{h}{\lambda c R_c}$$

$$P_{pc} = \frac{h2mc(\pi ab)^2}{hct_{c\sim}{}^2 cR_c}$$

$$P_{pcc} = \frac{2m(\pi ab)^2}{t_{c\sim}{}^2 cR_c}$$

$$P_{pcc}c = \frac{2m(\pi ab)^2}{t_{c\sim}{}^2 R_c}$$

$$E_{pcc} = \frac{2m(\pi ab)^2}{t_{c\sim}{}^2 R_c}$$

$$3) t_{c\sim} \sim t_{pc} \sim (ab)\sqrt{\frac{2h}{c}}$$

$$4) E_{pc} = \frac{2m(\pi ab)^2}{t^2{}_{c\sim}} \sim \frac{h}{\lambda} \to E_{pcc} \frac{2m(\pi ab)^2}{t_{c\sim}{}^2 R_c} \to P_{pcc} = \frac{2m(\pi ab)^2}{t_{c\sim}{}^2 cR_c}$$

Non-Photoelectric Effect Based Energy and Momentum

The results will show that for new time correction the changes for time correction will yield new values based on elliptical correction for energy, momentum, and time plus 2pi correction not based on photoelectric effect are:

1) E=1.63E-43 kgkm/s2
2) $E_{2\pi}$=2.61E-44 kgkm/s2
3) P=5.46E-49 kgkm/s
4) $P_{2\pi}$=5.48E-49 kgkm/s

The energy and momentum values without time correction for photoelectric effect and De Broglie equation are:

1) E=2.45 E-38
2) $E_{2\pi}$=6.21E-40
3) P=8.18E-44
4) $P_{2\pi}$=1.30E-44

The ratios for energy and momentum for new method vs. relativistic energy and classical momentum are: 1). E= 150,306 2). $E_{2\pi}$=23,793 3). P=149816 4). $P_{2\pi}$=23722.

The differences between Energy ratio and momentum are 490 and 71 for momentum and 1). E/ $E_{2\pi}$=6.31 2)P/ $P_{2\pi}$ =6.31. The relationship shows that the ratio of energy change and momentum change for time correction is about 6.31 for both energy and momentum or slightly greater than 2pi similar to probability of time for neutrinos. Also, while time dilation occurs, speed is inversely related to energy and momentum based on time correction. Hence velocity as it increases; energy will decrease as will momentum. However time for time dilation shows that time and speed will involve less distance over time. As velocity decreases, energy will increase perhaps if there are fewer disturbances in a system over time. While, increases in velocity for dark matter will decrease energy and momentum for time are slightly different than stated and expected in quantum mechanics for dark matter. The momentum equation for non-photoelectric effect based momentum is nearly proportional to Lambda based momentum (Agravat 2012; Agravat 2013):

$$P_\lambda = \frac{2m(\pi ab)^2}{t_c R_c} \text{ while } P_{pcc} = \frac{2m(\pi ab)^2}{t_{c\sim}{}^2 cR_c}$$

New Derivation of Probability of Time

$$P(m) \sim \frac{\frac{1}{m} - c}{1 - c}$$

$$if : P(m) \sim c^3 \sim P(c)$$

$$\ln P(c) \sim 3 \ln c$$

$$\left(\frac{\frac{1}{m} - c}{1 - c}\right) \sim c^3$$

$$Pm \left(\frac{\frac{1}{m} - c}{1 - c}\right) \sim mc^{3}$$

$$\frac{1 - mc}{1 - c} \sim mc^{3}$$

$$1 - mc \sim mc^{3} - mc^{4} \sim P(m) * m$$

$$\frac{\partial}{\partial c}(1 - mc \sim mc^{3} - mc^{4}) =$$

$$-m + 3mc^{2} - 4mc^{3} \sim \partial \frac{P(m)m}{\partial c}$$

$$1 - mc = mc^{3} - mc^{4} = P(m) * m$$

$$P(c) * m = mc^{3} - mc^{4} = 1 - mc$$

$$P(m) \sim c^{3} - c^{4} = \frac{1 - mc}{m}$$

$$P(m)m - 1 \sim mc$$

$$P \sim P(m)m - 1$$

$$P = P(m)m - 1$$

$$P \sim \frac{-1}{c} - 1$$

$$P \sim \frac{-1}{c}$$

$$\ln P \sim \ln\left(\frac{-1}{c}\right) + 0$$

$$mc \sim \frac{-1}{c}$$

$$mc^{2} \sim -1$$

$$E_{sr} \sim -1$$

$$\ln m + 2 \ln c \sim - \ln 1$$

$$\ln m \sim -2 \ln c$$

$$m \sim \frac{1}{c^{2}}$$

$$mc^{2} \sim 1$$

The proof above shows a new method for $E=mc^2$ proof from probability and time formulation that is novel. The probability of time ratios of neutrino velocities from time correction (Agravat, 2012; Agravat, 2013) is 1.001 vs. 1.09 from the time rates shown for time dilation that demonstrates a higher value for probability of time. The reference probability of time of speed of light is 0.99908.

$$P(t) = \frac{P(t)}{P(z \mid t) - 1}$$

$$P(z) = \frac{P(t)}{P(t)^{2} - 1}$$

$$t = \sqrt{\frac{P_{z} + c^{3}}{\exp^{c+1}}}$$

$$P(t)^2 = \frac{\frac{P_z + c^3}{\exp^{c+1}}}{1 + \frac{P_z + c^3}{\exp^{c+1}}}$$

$$P(t) = \sqrt{\frac{t}{1+t}}$$

$$P(t) = \sqrt{\frac{t}{1+t}}$$

$$P(t) = \sqrt{\frac{\sqrt{v}}{1+\sqrt{v}}}$$

$$P(t)^2 = \frac{\sqrt{v}}{1+\sqrt{v}}$$

Appendix

Hypotenuse Axiom II

The author discusses a proof of time possible as in a pendulum that may explain how complex numbers may play a part in time. The square root of a/c = i a complex number that is part of the algorithm in the hypotenuse axiom. If one segment is proportionate to the other, than the big one is approximately according to the following relation as shown according to a right triangle plot:

$$\Delta\, hypotenuse \sim \sqrt{\left(\frac{leg}{hypotenuse}\right)^2 + hypotenuse^2 + 1}$$

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