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HATIM'S THEORY WITH RESPECT TO EINSTEIN'S THEORY ON SPEED OF LIGHT IN SPACE AND WITH RESPECT TO SPACE-TIME RELATIONSHIPS/ANOMALIES IN SPACE USING EUCLIDEAN MATH

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INTRODUCTION & ASSUMPTIONS

1. It is possible to determine Euclidean distance e.g. using the Parallax method (triangulation method) and other methods with a reasonable limit of accuracy for 3-Dimensional Space for the Observable Universe. It is a known fact that distances can be measured in space e.g. we know the distance of the moon from the earth, distances of various planets/stars from the Earth often quoted in light years.
2. According to Einstein the speed of light is constant in space for the time being.
3. We assume that light travels the shortest path in space which is a straight line obeying Laws of Euclidean Mathematics for the time being.
4. We assume that Light/Radiation is either reflected or emitted from the heavenly bodies and travels in Space to reach Earth.
5. Frame of Reference is Earth.

METHOD AND OBSERVATIONS

Let 's' be the Euclidean distance of the heavenly object from Earth which according to our assumptions is measurable and 'c' be the speed of light in space which is a known quantity. Therefore, light emitted or reflected from the heavenly body will follow the following equation –

$c = s/t$ where 't' is the time taken by the light to travel from the heavenly body to Earth.

But c and s are known quantities; hence t can be calculated from the above equation.

Now let us say there is a slight Δs shift in the distance and correspondingly there is a Δt shift in time, therefore,

$c = s/t = (s + \Delta s)/(t + \Delta t)$

Hence, cross multiplying we get,

$st + s\Delta t = st + t\Delta s$ therefore,

$s\Delta t = t\Delta s$, hence,

s/t = Δs/Δt but s/t = c, therefore,

c = s/t = Δs/Δt

Note please all the above quantities in above equations (s, Δs and Δt) are measurable observed values except t which is a calculated value and c which is assumed as a constant in space. Now let us examine some scenarios of these eqns.

Case 1) Normal

Under this case all the equations are satisfied (i.e. c = s/t = Δs/Δt) for the observations made w.r.t to the heavenly body.

Case 2) Abnormal or Anomaly Scenarios

Under this case all or part of the equations are not satisfied (i.e. c = s/t = Δs/Δt are not satisfied) for the observations made w.r.t to the heavenly body. Possible explanations are as follows –

a) If c is constant and $s=s_{observedvalue}$, $t=t_{calculated}$, $\Delta s=\Delta s_{observedvalue}$ and $\Delta t=\Delta t_{observedvalue}$. Let us assume in this scenario, s/t is not=Δs/Δt => either some combination of $\Delta s_{observedvalue}$ and $\Delta t_{observedvalue}$ is incorrect e.g. if s/t = 4/2=2=constant='c' and Δs/Δt=8/2=4 then s/t is not=Δs/Δt.

   What this tells us is that either our assumption that s/t=2=speed of light is not constant in Space and maybe it varies with Space/Time combination OR the value of Δs has been observed correctly and the observed value of Δt is incorrect (either there is a contraction in time or expansion depending on the observed value of Δt, in this case the value of Δt has contracted, in other words it should have been 4 but observed value is 2, in order words if the clock has shown value 2 hrs it should have shown value 4 hours from GMT to satisfy the above equations i.e. there is a contraction of time i.e. we have gone 2 hrs in the past; had the value of Δt been say 8 => there has been an expansion in time and heavenly object has gone in the future) OR let us say the value of Δt is correct but the measurement of Space is incorrect in other words the value of Δs should have been 4 but the observed value is 8, in other words Space has expanded, or alternatively if the value of Δs had been say 2 it would imply that that Space has contracted it should have been 4 but the observed distance is 2 OR the combination of observed values of Δs and Δt are incorrect OR light travels along a curved path.

b) If c is constant and $s=s_{observedvalue}$, $t=t_{calculated}$, $\Delta s=\Delta s_{observedvalue}$ and $\Delta t=\Delta t_{calculatedvalue}$. Let us assume in this scenario, s/t is not=Δs/Δt => either some combination of $\Delta s_{observedvalue}$ and $\Delta t_{calculatedvalue}$ is incorrect e.g. if s/t = 4/2=2=constant='c' and Δs/Δt=8/Δt =2 then Δt must be =4 to satisfy s/t=Δs/Δt. But if Δt is not = $\Delta t_{observedvalue}$ then

   What this tells us is that either our assumption that s/t=2=speed of light is not constant in Space and maybe it varies with Space/Time combination OR the value of Δs has been observed incorrectly and the calculated value of Δt is correct OR the value of $\Delta t_{observedvalue}$ is incorrect OR the combination of observed/calculated values of Δs and Δt are incorrect respectively OR light travels along a curved path.

c) If c is constant and $s=s_{observedvalue}$, $t=t_{cacualted}$, $\Delta s=\Delta s_{calculatedvalue}$ and $\Delta t=\Delta t_{observedvalue}$. Let us assume in this scenario, s/t is not=$\Delta s/\Delta t$ => either some combination of $=\Delta s_{calculatedvalue}$ and $\Delta t_{observedvalue}$ is incorrect e.g. if s/t = 4/2=2=constant='c' and $\Delta s/\Delta t=\Delta s$ /2 =2 then Δs must be =4 to satisfy $s/t=\Delta s/\Delta t$. But if Δs is not = $\Delta s_{observedvalue}$ then

What this tells us is that either our assumption that s/t=2=speed of light is not constant in Space and maybe it varies with Space/Time combination OR the value of Δs has been calculated incorrectly and the value of Δt is correct OR the value of $\Delta t_{observedvalue}$ is incorrect OR the combination of calculated/observed values of Δs and Δt are incorrect respectively OR light travels along a curved path.

The variance between observed and calculated values is a moot point to qualify for "real perceived differences between the two", I think standard statistical variance techniques such as Z/t-tests aka Hypothesis testing (u_1 not = u_2 or u not = K a constant) could be used for qualifying.

Corollaries

1. Light travels around a curved path under the gravitational effects of large bodies nearby, hence the equations do not hold true
(Reference: *en.wikipedia.org/wiki/**Tests_of_general_relativity***).
2. There is a time dilation or contraction in space-time in absence of gravitational effects of large bodies (Reference: *en.wikipedia.org/wiki/**Twin_paradox;*** Einstein's Twin Paradox). I strongly suspect and have a hunch that this equation can be used to explain Einstein's Twin Paradox.
3. Our measurements of Space and Time are possibly inaccurate with existing Instruments/Methods.
4. We could possibly conclude in the case of anomalies that the speed of light is not constant in Space but a variable which could possibly upset Einstein's assumption about the speed of light being constant in Space.
5. And depending on the accuracy of observed/calculated values the heavenly object(s) is oscillating between past, present and future with respect Earth as frame of Reference.

N.B. Measurements of Space/Time is assumed to be influenced by Gravitational forces of large/small bodies in Space as given in ***Tests_of_general_relativity*** but my belief is that measurement of Space/Time is influenced not just by Gravity but also by other forces such as electro-magnetic forces as in the magnetic compass on Earth. Also it would be WORTHWHILE to measure ENTROPY and its effects on the observed values to determine its accuracy/reliability with respect to above equations.

Implications and Potential Applications

1. This can be used for calculating Space/Time in Space.
2. Explaining some of the Astronomical Anomalies
3. And explain Einstein's theories with respect to Speed of Light in Space, General Relativity etc.

SUMMARY AND SCOPE FOR FURTHER RESEARCH

I think these equations have important bearing on Theory of General Relativity and Special Relativity by Einstein which has a vast potential for further research.

It would be worthwhile to determine the distribution of space i.e. distance or the variable 's' with respect to its probability and similarly for time variable 't' – whether the distribution is bell shaped or exponential etc. for the measuring instrument. If the distance is X light years away for a sample of 'n' observations then mean of X can be calculated. Similarly X can be calculated for the other heavenly bodies and the distribution of X determined as a probability distribution as in statistics. Similarly for the time variable and speed of light variable their probability distributions can be determined. Maximum and minimum limits can be determined from above distributions. My surmise is that these above distributions could possibly be used to explain the anomalies in Space/Time and also be used to determine the observable universe.

Also it would be worthwhile to determine distribution of both Space and Time with respect to Probability (Z-axis is Probability, Y-axis is Space and X-axis is Time). Similarly distributions of combinations of Probability, Space, Time and Speed of light can be determined using above formulae and their behavior analyzed.

Please note the equation $c=s/t$ and the other formulae derived are applicable in both a non-accelerating frame of reference as well as an accelerating frame of reference. In an accelerating frame of reference, $s=ut + at^2$ as per Newtonian mechanics. Substituting in the above formulae would give us the following equations, assuming acceleration 'a' is a constant,

$c=(u + at)=(u + a\{t + \Delta t\})$

$\Rightarrow c = a\Delta t$

Again this above formula can be used to explain the Space/Time/Speed of light anomalies if any. Please note here if Δt is variable then Speed of light 'c' also becomes variable. Here Space variable's' has been replaced by the acceleration variable 'a' which any way is a function of Space and Time. Similarly equations can be derived for variable acceleration at different moments of time.

REFERENCES

1. en.wikipedia.org/wiki/Tests_of_general_relativity.htm
2. en.wikipedia.org/wiki/Twin_paradox.htm