ISSN 2347-3487

DISCRETE TIME FLOWING AND A CONTRADICTION TO EINSTEIN'S ASSUMPTION

K.H.K. Geerasee Wijesuriya
Department of Physics, Faculty of Science, University of Colombo
94,Cumaratunga Munidasa Mawatha, Colombo 00300,Western Province, Sri Lanka.
geeraseew@gmail.com

ABSTRACT

Due to the limited velocity of light, there is a time duration to propagate a light ray between any two distinct space-time points in the universe. Upon that argument, author's attempt is to obtain a very specific result that may useful for the Cosmology subject fields, string theory and the Astronomy subject fields. The concept in this research article may be a challenge to almost all Physics subject areas.

The final result implies that the time flowing depends on the space time location and time flowing is a relative fact in the universe. "Time flowing is a relative fact" does not mean the notion in the Special theory of Relativity regarding the relativity in the time.

Indexing terms/Keywords

Time; incidents; clock; reference frame; pencil; light ray ; movement

Academic Discipline And Sub-Disciplines

Theoretical Physics; Fundamentals of Physics

SUBJECT CLASSIFICATION

Lorentz Transformations applications

TYPE (METHOD/APPROACH)

Lorentz Transformations equations; Pure mathematics applications

ISSN 2347-3487

INTRODUCTION

Science and Technology developed through the mind-based concepts, new notions and the experimental procedures. But the current understanding of the natures of the physical quantities in the universe may or may not be the correct understanding due to the effect of extreme situation variations.

The real situation of the physical world may be different from our expecting world. In our usual physical world, we can observe so many incidents which are simultaneously happening. But we have to pay our attention to the real state of our basic concepts of some basic physical quantities. My attempt would use to realize a new idea regarding the "our understanding of the quantity time".

RESEARCH CONTENT

Basic equations and concepts

We consider two persons call A and B with moving objects in their hands. My attempt is to consider A and B for 3 different situations called as Case 1, Case 2, Case 3. Consider each case separately as below.

Case A (person a and person b both are at rest relative to the frame)

Let assume, at point A and B there are two persons (those two persons consider as two points) carrying two simple clocks which are set into 00.00 am. And let assume, at time 't', both A and B can see himself **and** other both are moving their own pencils. (i.e. 'A' can see that himself and 'B' both are moving their own pencils. And for 'B', 'B' can see himself and 'A' both are moving their own pencils at time 't')

That means A can see both two incidents (Him-self moves his pencil and he observes B also moves his pencil) simultaneously. Also the same capability for 'B'.

And $t=t_1$ is the time which is, according to the 'A''s clock whenever A is moving his pencil. And $t=t_2$ is the time which is, according to the 'B''s clock whenever 'B' is moving his own pencil.

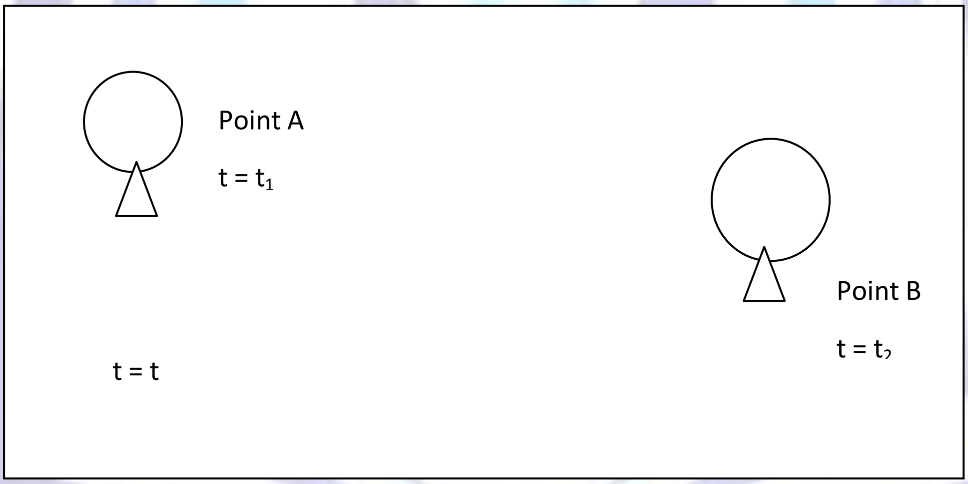

Figure 1 (within the same reference frame)

But at time t, 'A' can see himself and 'B' both are moving their pencils. Therefore $t > t_2$

$t > t_2$……………………………………………………………………………………………….(01)

(Because the light ray coming from B, spends some time on its path of travelling. But when time equals to t, A sees that B is moving his pencil. Then 'A' thinks 'B' had moved his pencil some bit before)

And also at time t, 'B' can see himself and 'A' both are moving their own pencils.

Therefore, $t > t_1$…………………………………………………………………………… ………..(02)

(Because the light ray coming from A spend some time on its path of travelling. But when time equals to t, B sees that 'A' is moving his pencil. Then 'B' thinks 'A' had moved his pencil some bit before)

By the equation (01) t is the time such that 'A' moves his own pencil.

Therefore by the equation (01), $t_1 > t_2$...(03)

By the equation (02) t is the time such that B moves his own pencil.

Therefore, by the equation (02), $t_2 > t_1$..(04)

Therefore by the equations (03) and (04), we get a paradox. Therefore we can conclude that our previous assumption is false.

Therefore, **NO ONE** can see two incidents (Two incidents: one is done by himself and other done by another person) such that those are **simultaneously happenings.**

Case B (Both A and B are in the same inertialf, but A is moving with Velocity V ms-1 Relative to the person B)

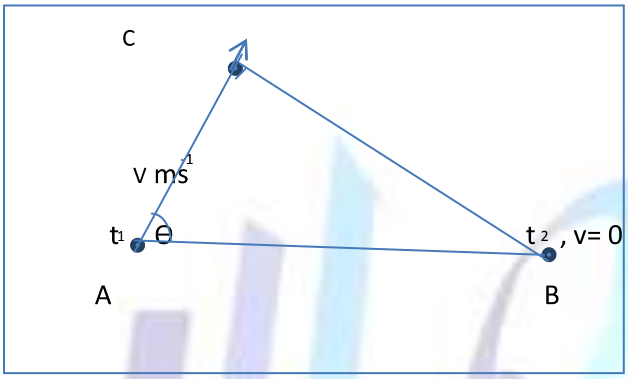

Figure 2 (within the same inertial frame)

Consider the case which is: The person at the position A, moves with constant velocity V ms^{-1} with Ɵ angle ($0 \le Ɵ < 2\pi$) with respect to the line AB. And B is at rest within the frame. While moving with velocity V, A sets his clock to 00.00am. At the same moment B also sets his clock to 00.00am. Then start to consider next incidents. **i.e. the below t_1 and t_2 indicate the time (t_1 – 00.00) and time (t_2 – 00.00)**

Where $t = t_2$ is the time according to B's clock (which is at rest within the frame) whenever B moves his pencil. And $t = t_1$ is the time according to the A's clock (which is moving with velocity V ms^{-1} with respect to the person B) whenever A moves his own pencil. Let assume at time ' t ' , B can see himself and other both are moving their own pencils(i.e. at time ' t ' according to the B's clock). And also assume B knows that at time 't' (According to B's clock) ; A can see himself and B both are moving their pencils.

Let, time = t_m is the time in B's clock when A moves his pencil. Therefore, $t_1 / \sqrt{(1- (V/C)^2)} = t_m$

Then B says that $t > t_m$ (because light ray coming from A to B spends some time on its path of travelling and at time t in B's clock B sees that A is moving his pencil)

$t > t_1 / \sqrt{(1- (V\backslash C)^2)}$…………………….. 05'(because t_1 is the improper time for person B. In relativity, improper time is time measured by a single clock between events that occur at the different place as the clock)

But at time 't', B knows that himself is also moving his pencil. Therefore, B says that $t = t_2$

Therefore by (05'), $t_2 > t_1 / \sqrt{(1- (V\backslash C)^2)}$……………………….(05)

Now let's consider the light ray propagating from B to A. But **<u>B knows</u>** that at time t, **<u>A receives the light ray coming from B</u>** (Because at time t according to B's clock, B knows that both A and B can see himself and other both are moving their own pencils. i.e. at time ' t ' according to the B's clock). Then B sees the time of B's clock when A is receiving the light ray (came from B) as $t = t_1 / \sqrt{1- (V/C)^2}$. Because the time t_1 according to A's clock is the time that A moves his pencil. (Because at time t, A receives the light ray coming from and 'A' moves the pencil both happens). Therefore,

$t_1 / \sqrt{1- (V/C)^2} = t = t_2$ ………………………………………………….. 06

By the equations 05 and 06 we get a contradiction. Therefore our assumption is false. Therefore such a time ' t ' does not exist. ………………………..(Result N)

In the above case I didn't assume that A and B moves their pencils at the same time. Now assume 'A' and 'B' moves their pencils at the same time.

Let's consider, $t_2 / \sqrt{(1 – (V\backslash C)^2)} = t_1$ (i.e. A knows whenever he moves his pencil B is also moving his pencil). Because $t_2 / \sqrt{(1 – (V\backslash C)^2)}$ is the improper time for A and that is same as t_1. (Because in relativity, improper time is time measured by a single clock between events that occur at the different place as the clock)

ISSN 2347-3487

And for person at B, we get the similar statement $t_1 / \sqrt{(1-(V\backslash C)^2)} = t_2$. (i.e. B knows whenever he moves his pencil A is also moving his pencil). That means both A and B moves their own pencils at the same time.

Then by considering person at B, there is a time $t = t_1 / \sqrt{(1-(V\backslash C)^2)}$……………………………………(K)

And by the statement $t_1 / \sqrt{(1-(V\backslash C)^2)} = t_2$; $t = t_2$; i.e. t is the proper time for 'B'. But A is moving his pencil at time t_1 according to his own clock. Then the time $t = t_1 / \sqrt{(1-(V\backslash C)^2}$, as A is seeing according to A's clock = $t_1 / (1-(V/C)^2)$ (By using (K)).

Then the time spending **(T'')** to travel the light ray from A to B as A is seeing = $(t - t_1) = [t_1 / (1-(V/C)^2)] - t_1] > 0$. Author can write the time that the light ray from A to B starts to propagate from A as t_1. Then the time taken to propagate the light ray from A to B as A is detecting as same as the time taken to propagate from A to B as B is detecting. Because the time taken by the light ray to propagate a constant distance is independent from the observer. **(But in order to receive the light ray by B, B should be [T''.C] distance away from A. C is the speed of light)** Then there is a time 't' such that person 'B' can conclude that B is moving his own pencil and B can see the movement at A at the same time t. [**B's time measures by A = t_1 / [$\sqrt{(1-(V\backslash C)^2)}$ / $\sqrt{(1-(V\backslash C)^2)}$**]. …………………….(*)

Because there is a definite chance to receive the light ray by B coming from A, if A and B are [T''.C] distance away from each other.

Then by considering person at A, there is a time $t = t_2 / \sqrt{(1-(V/C)^2)}$ …………………………………………………(K')

And $t = t_2 / \sqrt{(1-(V/C)^2)} = t_1$ is the time in A's clock when A moves his pencil. Then the time $t = t_2 / \sqrt{(1-(V\backslash C)^2}$, as B is seeing according to B's clock = $t_2 / (1-(V/C)^2)$ (By using (K')).

Then the time taken (T''') to travel the light ray from B to A, as B is seeing (Then the time taken to propagate the light ray from A to B as A is detecting as same as the time taken to propagate from A to B as B is detecting.) = $[t_2 / (1-(V/C)^2) - t_2] > 0$. Because the time takes by the light ray to propagate a constant distance is independent from the observer. **(But in order to receive the light ray by A, A should be [T'''.C] distance away from B. C is the speed of light)**

Then there is a time '$t = t_2 / \sqrt{(1-(V/C)^2)} = t_1$ ' in A's clock such that person 'A' can conclude that A is moving his own pencil and A can see the movement at B at the same time $t = t_2 / \sqrt{(1-(V/C)^2)} = t_1$ ………………………(**)

But **<u>B can conclude</u>** that at time $t_1 / \sqrt{(1-(V/C)^2)}$, (according to B's clock) **<u>A knows that</u>** A is moving his pencil and A can see movement at B at the same time. And also, at time '$t = t_1 / \sqrt{(1-(V/C)^2)} = t_2$ in B's clock, person 'B' can conclude that B is moving his own pencil and B can see the movement at A at the same time $t = t_1 / \sqrt{(1-(V/C)^2)}$ …………………………(Paragraph M)

But in order to conclude that A and B are should be T_k distance away from each other. Where T_k = min {T'', T'''}

But we know that as paragraph M, such a time 't' does not exist. (According to the result N). Then we get a contradiction.

Therefore our assumption is false. Therefore, we can conclude that 'A' and 'B' can't move their pencils at the same time. Therefore, in the case B we can conclude that 'A' and 'B' can't move their pencils at the same time if they are in the distance [T_k .C] away from each other. Where C is the speed of light and T_k = min {T'', T'''}

<u>Case C: consider the case person at A, moves with acceleration (this acceleration may or may not be a constant) with respect to the person at B.</u>

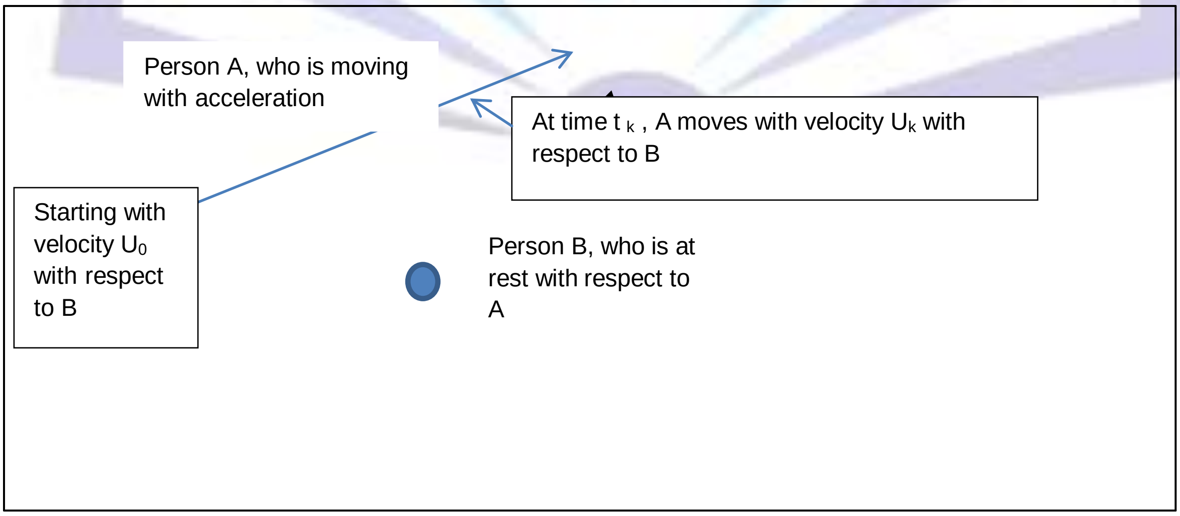

Figure 3: person at A, moves with acceleration (this acceleration may or may not be a constant) with respect to the person at B.

At point A, the velocity of that person is U_0 ms^{-1} with respect to the person at B. And at t = t_K, the velocity of the person (person: who was at A) is U_K ms^{-1}. While moving with acceleration, A sets his clock to 00.00am. At the same moment B also sets his clock to 00.00am. Then start to consider next incidents. **i.e. the below t_0 and t' indicate the time (t_0 – 00.00) and time (t' – 00.00)**

And t = t_0 is the time according to the clock of the person who was at point A when he moves his pencil (t = t_0 is the time according to the (moving)A's clock). And t = t' is the time according to B's clock at position B, when B moves his pencil. Let assume at time ' t ' , B can see himself and other both are moving their own pencils(i.e. at time ' t ' according to the B's clock). And B knows that at time 't'(according to B's clock) ; A can see himself and B both are moving their pencils.

By considering the light ray coming from A to B, 'B' thinks that,

t'> t_0 / (1 – $(U_0\backslash C)^2$)……………………………………………07

By considering the light ray coming from B to A , B thinks that , t_0 / √ (1 – $(U_0\backslash C)^2$) = t' ……………………………………………………………… 08

Same procedure as case B

By equation (07) and (08) we get a contradiction. Therefore, there does not exist such a time 't'.

Let's consider, t' / √ (1 – $(V\backslash C)^2$) = t_0 (i.e. A knows whenever he moves his pencil B is also moving his pencil). Because t' / √ (1 – $(V\backslash C)^2$) is the improper time for A and that is same as t_0. (Because in relativity, improper time is time measured by a single clock between events that occur at the different place as the clock)

And for person at B, we get the similar statement t_0 / √ (1 – $(V\backslash C)^2$) = t' . (i.e. B knows whenever he moves his pencil A is also moving his pencil). That means both A and B moves their own pencils at the same time.

Then by considering person at B, there is a time t = t_0 / √ (1 – $(V/C)^2$

Then, t = t'. (by the statement t_0 / √ (1 – $(V\backslash C)^2$) = t').

Then the time spending **(T_a)** the light ray on the path of travelling from A to B as A is seeing = (t – t_0) =[t_0 / (1 – $(V/C)^2$)]– t_0] > 0. Author can write the time that the light ray from A to B starts to propagate from A as t_0. Then the time taken by the light ray to propagate from A to B as A is detecting as same as the time taken by the light ray to propagate from A to B as B is detecting. Because the time taken by the light ray to propagate a constant distance is independent from the observer. **(But in order to receive the light ray by B, B should be [T_a .C] distance away from A. C is the speed of light)** Then there is a time t = t_0 / √ (1 – $(V/C)^2$ according to B's clock such that person 'B' can conclude that B is moving his own pencil and B can see the movement at A at the same time t. [**A's time measures by B = t' / (1 – $(V\backslash C)^2$**)]. ……………………………..(P)

Then by considering person at A, there is a time t = t' / √ (1- $(V/C)^2$). And t = t' / √ (1- $(V/C)^2$) = t_0 is the time in A's clock when A moves his pencil.

Then the time t = t'/ √ (1 – $(V\backslash C)^2$, as B is seeing according to B's clock =t' / (1- $(V/C)^2$)

Then the time taken (T_b) to travel the light ray from B to A, as B is seeing (Then the time taken to propagate the light ray from A to B as A is detecting as same as the time taken to propagate from A to B as B is detecting.) = [t' / (1 – $(V/C)^2$) – t'] > 0. Because the time takes by the light ray to propagate a constant distance is independent from the observer. **(But in order to receive the light ray by A, A should be [T_b.C] distance away from B. C is the speed of light)**

Then there is a time 't = t' / √ (1 – $(V/C)^2$) = t_0 ' in A's clock such that person 'A' can conclude that A is moving his own pencil and A can see the movement at B at the same time t = t' / √ (1 – $(V/C)^2$) = t_0 ……………………….(**)

But <u>**B can conclude**</u> that at time t_0/ √ (1 – $(V/C)^2$), (according to B's clock) <u>**A knows that**</u> A is moving his pencil and A can see movement at B at the same time. And also, at time 't = t_0 / √(1- $(V/C)^2$) = t' in B's clock, person 'B' can conclude that B is moving his own pencil and B can see the movement at A at the same time t = t_0 /√ (1- $(V/C)^2$) …………………………(P)

Then by (P) and (**); we can conclude that there is a time t_0 / √ (1- $(V/C)^2$) in B's clock such that 'B' can conclude that at time t_0 / √ (1- $(V/C)^2$) (according to B's clock), <u>**A knows that**</u> A is moving his pencil and A can see movement at B at the same time. And also, at time t = t_0/ √ (1- $(V/C)^2$) in B's clock, person 'B' can conclude that A is moving his own pencil and B can see the movement at A at the same time t = t_0/ √ (1- $(V/C)^2$) …………………………(Paragraph Q)

But according to the Case C first part, author knows such a time t does not exist (But A and B should be [T_c .C] distance away from each other. Where $T_c = \min \{ T_a, T_b \}$.)

Then we get a contradiction. Therefore ‘A’ and ‘B’ can’t move their pencils at the same time if they are in [T_c .C] distance away from each other. Therefore, in the case C, we can conclude that ‘A’ and ‘B’ can’t move their pencils at the same time if they are in [T_c .C] distance away from each other.

A and B can’t move their own pencils at the same time if A and B in the distance [T_k.C] and [T_c .C] away from each other respectively for case 2 and case 3.

THEREFORE IN ‘CASE B’ AND ‘ CASE C’ NO TWO PERSONS CAN DO TWO WORKS SIMULTANEOUSLY.

Then the possible implications are, (For two persons such that they are in relative motion and T_k , T_c distance away from each other for the case 2 and case 3 respectively)

1. The happening time for an incident creates with that incident and dies with that incident(that means time births with that incident and dies with that incident: time is just like a shadow of a person)
2. Time is flowing in a discrete manner(that means time is flowing with stopping and stopping)

But if (2) is true, then there can be two incidents those are happening at the same time. But , it cannot happens. Therefore 1^{st} implication is true.

That means time is related with that incident if they are in [T_k .C] distance OR [T_c .C] distance away from each other respectively.

We know that universe filled with matters and energy. Let us consider the physical term **“ velocity ”** . First consider the velocity of an Energy wave.(that means a movement without any matters)

Case 1

Consider a movement of a wave(without any matter where , that wave consider with respect to a matter’s motion OR with respect to another wave’s motion. i.e. there should be a relative motion with respect to the first wave. Let’s consider an electromagnetic wave. **(The velocity of that electromagnetic wave should be smaller than ‘C’ during the consideration period: due to some reasons)**Then the velocity of that EM wave defines as ,

Velocity = distance travelled that EM wave within a unit time

Velocity = $\Delta d \ / \ \Delta t$

But now we know that a time births and vanishes with the incident. **(Time births with the incident and has been died by the influence of the incident- then only we can say two incidents haven’t occurred at the same time).** With this new idea of time we can write the quantity Δt as,

$\sum_1^{\alpha} \Delta ti$ = Δt; α denotes infinity. Here, ‘ i ’ is the incident number.

Δt_i is the time that births with the incident ‘i’ . And Δt_i dies due to the influence of incident ‘i’.

Here **‘incident’ is the smallest possible distance (that can travel) travelling without giving birth to another time Δt_{i+1}. Moreover,** Δt_i is the time interval which does not allow to happen 2 incidents simultaneously (that does not allow to happen at least two incidents)

And Δt_i = time taken by the wave in order to travel Δd_i ($\Delta d_i \rightarrow 0$) distance. Here, Δt_i should be the time interval that does allow to happen only one incident . Because with a new incident, another time births. Δ **d_i is the smallest possible distance that EM wave can travel within the time interval Δt_i** .

Explanation of the existence of smallest possible distance Δd_i for the time interval Δt_i :

Consider P and Q people. P is at the center O. Q is moving with the radius R = **T_k.C** around P. If there is no smallest possible distance Δd_i that can travel within Δ **t_i** ; we can say Δd_i **=** π. R

Then while Q is moving π.R distance around P, the time duration that is flowing is Δ **t_i** . Then we **can not** say Δ **t_i** $\rightarrow$ 0. Then there may be a another incident that is happening at P. Because for large Δd_i , there is a large Δ **t_i** (Comparably). Then within the same time duration Δ **t_i,** there may be two incidents those are happening.

But we know that can not happened. Therefore there is a smallest possible distance ($\Delta d_i \rightarrow 0$) that Q can travel within Δ **t_i**.

And for all other situations and arrangements of two random people P and Q; we can conclude the same arguments.

These time birthing and vanishing procedure only for an incident that is T_k.C distance or T_c.C distance away from the other incident as previously mentioned) Where i ϵ N.

$\sum_1^{\alpha} \Delta ti$ = Δt should be a finite value. Therefore, we know $\sum_1^{\alpha} \Delta ti$ = Δt should converge to some value $k \in R^+$.

Therefore with the help of mathematics we obtain:

$\Delta t_{i+1} / \Delta t_i < 1$; $\Delta t_{i+1} < \Delta t_i$ ……………………. (09)

(09) implies that EM wave takes small time rather than it took before, in order to travel the distance Δd_{i+1}($\Delta d_{i+1} \rightarrow 0$).

Where,

Δd_i is the smallest possible distance that EM wave can travel within the time interval Δt_i .

But the velocity (V) of that EM wave is defined as , $V_i = \Delta d_i / \Delta t_i$ Where i ϵ N . But, by the equation (*)

1. If V_i is constant , then the value $\Delta d_{i+1} < \Delta d_i$ for i ϵ N . That means the smallest possible distance, that EM wave can travel within its own time Δt_i (because now we know time is just like shadow of a person) is smaller than it is before.
2. **OR If the smallest possible distance that EM wave can travel within the time interval Δt_i is a constant; then the velocity of EM wave should larger than it is before.**

$$\boxed{V_i \cdot \Delta t_i = \Delta d_i}$$

$\sum Vi . \Delta ti = \sum \Delta di$ i ϵ N .

But , $\sum \Delta di$ = d = distance travelled the EM wave within the whole considering period.

$\sum_1^{\alpha} Vi. \Delta ti$ = Δd……………….(10) Where i ϵ N .

Case 2

Consider a movement of a matter. Then the velocity (U) of that matter is defined as:

$U_i = \Delta d_i / \Delta t_i$; i ϵ { 1, 2, 3,………………,n}

d_i = smallest possible distance that the object can travel within the time interval Δt_i. Because, now we know that time is just like a shadow of a person and there is a smallest possible distance that can travel by an object during the time interval Δt_i. This Δt_i should birth whenever object starts to move d_i distance and should die after the object moved d_i distance.

Where n ϵ N . And n is finite. This n depends on the length of the line that particle travelled and the smallest possible distance that the particle can travel within our new time Δt_i ; i ϵ {1,2,3,………,n}

Put $\Delta d_i = w_i$. $U_i = w_i / \Delta t_i$ $\longrightarrow$ $w_i = U_i . \Delta t_i$ $\longrightarrow$

$\sum_1^n Ui.\Delta ti = \sum_1^n Wi$

$\sum_1^n Wi$ = L = distance travelled the matter within that considered period = $\sum_1^n Ui. \Delta ti$

$$\boxed{L = \sum_1^n Ui. \Delta ti}$$ ………………………….(11)

* Specially, it should be noted that this definition valid only for movements such that there is a relative motion of the object/wave with respect to the observer.

CONCLUSIONS

Conclusion 1

But this discrete time flowing definition is valid for the objects who are in a specific distance away from each other. That means the **'TIME FLOWING DEPENDS ON THE SPACE'.**

Let's consider two persons P and Q. P is at rest with respect to the rest space time. And Q is moving with velocity 'V' in a circular path around P. Then for some particular radius R', around the person P, the relative time flowing of Q is discrete with respect to P, according to above all arguments.

But P and Q are in different inertial frames if Q moves around P.

THEREFORE EINSTEIN'S STATEMENT: "ALL PHYSICAL LAWS ARE SAME FOR ALL INERTIAL REFERENCE FRAMES" MAY HAS A PARADOX, ACCORDING TO ABOVE ARGUMENT.

And I hope to develop the main idea in this research article further, and it will be able to explain some unexplained Astrophysics, Physics and Cosmology problems in future.

Conclusion 2

Let's consider two persons X and Y inside a same inertial frame S. X is at rest relative to the frame S. And Y is moving with velocity V' with respect to X within the inertial frame. Y is moving along a straight line starting from minus infinity (Comparably) to plus infinity (Comparably). And also, the shortest distance (D) to the person X from the straight line should change time to time.

Then my previous works implies that there should be at least one situation (with distance D = D') of the straight line such that the time does not flow continuously with Y, with respect to X (On at least one spot along the straight line – straight line which is distance D' away from the person X). But there may be more than above particular situation (Particular situation: With a straight line D' distance away from X and at the particular point on that straight line that previously considered)

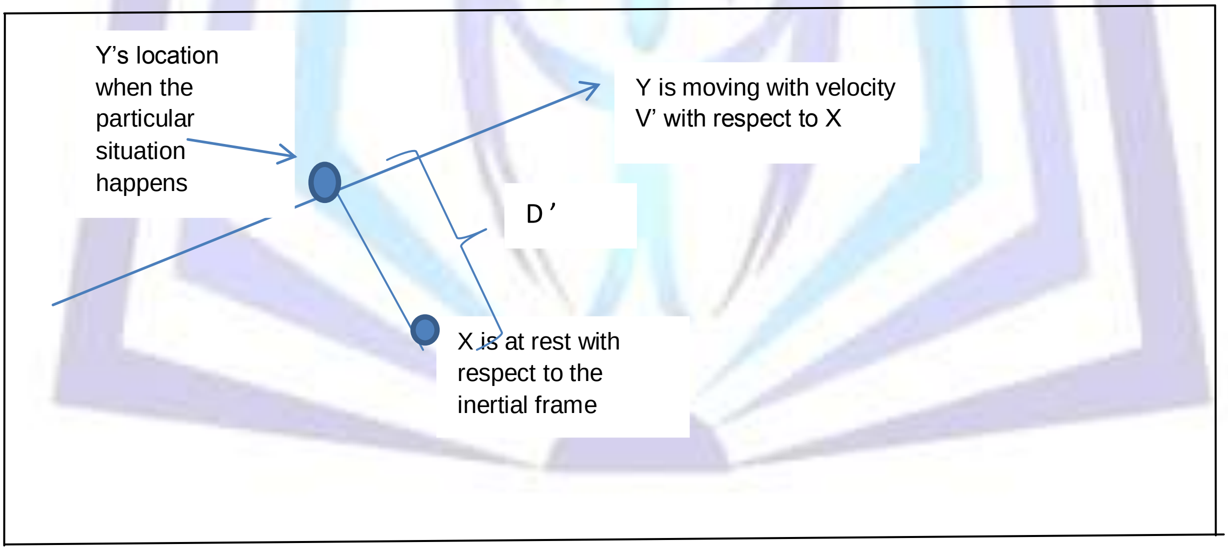

Figure 4: Within the same inertial frame (When the time flowing of Y becomes discrete)

Therefore although the time of X flows continuously, the time flowing with Y is not continuous (For the above particular situation) within the same inertial frame. Therefore, although the two persons X and Y are in the same inertial frame, the laws of physical quantity 'time' are different from each other (Because for X, time flows continuously, but not for Y).

But Einstein has considered that the laws of physics are same for all inertial frames.

But according to my above proofs, the laws of the physical quantity 'time' are not same within the same inertial frame either.

ACKNOWLEDGEMENTS

I would be thankful to my parents who gave me the strength to move forward with physics knowledge and achieve my scientific goals. And I would like to mention my Undergraduate University. University of Colombo is the place that I gained the knowledge for the new discoveries. I would like to thank the University of Colombo, Faculty of Science.

APPENDIX

When a person 'A' moves with velocity V with respect to another person B, there is a time dilation in each person's reference frame. The time dilation equation of person A, can be written as below.

$t = t' / \sqrt{1 - (V/C)^2}$

Where t is the improper time for the considering person A, and t' is the proper time for the considering person A. Proper time is the time in his own reference frame. And improper time is the time in the other reference frame that is moving with respect to the considering person. Also, C is the speed of light.

In relativity, **proper time is time measured by a single clock between events that occur at the same place as the clock. And improper time is time measured by a single clock between events that occur at the different place as the clock.**

REFERENCES

1. http://ffden-2.phys.uaf.edu/212_fall2003.web.dir/Eddie_Trochim/assumptions.htm
2. http://lefteris-kaliambos.wikia.com/wiki/EINSTEIN%E2%80%99S_WRONG_ASSUMPTIONS_IN_SPECIAL_RELATIVITY
3. http://voyager.egglescliffe.org.uk/physics/relativity/post1.html
4. http://www.upscale.utoronto.ca/PVB/Harrison/SpecRel/SpecRel.html

AUTHOR'S BIOGRAPHY

The author of this research article is K.H.K. Geerasee Wijesuriya (Normally identify as Geerasee Wijesuriya). And the idea in this research article is innovative and it is completely K.H.K. Geerasee Wijesuriya's notion. Geerasee studied at Faculty of Science, University of Colombo Sri Lanka. And she graduated with BSc(Hons) from the University of Colombo, Sri Lanka in 2014 June.

Geerasee has investigated several new concepts and notions regarding Physics, Astronomy and Cosmology as listed below.

Newton's first law of motion is not real

Journal of Advances in Physics Vol 10 no. 02

20/08/2015

This is Geerasee's way to disprove Newton's first law of motion

Detecting an Asteroid
http://www.nerdynaut.com June 2015

This is Geerasee's own way to detect an asteroid and ways of identifying its physical features.

An indirect eveidence for the existence of Dark Energy/Dark Matter by considering a pulsar

http://www.nerdynaut.com June 2015

This is Geerasee's own notion regarding a way to get an indirect proof for the existence of dark energy and the dark matter.

Possibilities of existence of life on the moon

http://www.nerdynaut.com

March 2015

This is Geerasee's article regarding the life on the moon.

Importance of the sun and wonderful influences from the sun to the upper atmosphere of Earth

www.hubpages.com

April 2015

Geerasee's article of Astronomy

Geerasee has published her own scientific articles annually 3 times with **SIGMA Magazine** published by Mathematical and Astronomical society, University of Colombo, Sri Lanka.

1st article: Relativity, published with 2011 SIGMA Magazine (This article contains a paradox that can be obtain using special theory of relativity)

2nd article: Simultaneous observing and quantity paradox,2012 SIGMA Magazine (With this article she has pointed out a very important result related with simultaneous incidents, also she has discovered a range for the refraction index of a material)

She has published her own scientific articles with **Guardian Express magazine USA.**

1st article Title: Nuclear Fusion the Big Bang Theory, Date: May 9, 2013, Website: www.guardianexpress.com

2nd article:

Title: American Academy of Arts Sciences and The Big Bang theory, Date: April 25, 2013, Website: www.guardianexpress.com

3rd article: Energy states of a matter wave respect its force suppliers and spacetime curvature creates mass- energy in the universe, 2013 SIGMA.

She has investigated a new scientific concept of generating electricity by using the radiations those are in the environment

NASA, Date: April 7, 2013