Does the Causality Principle prove that there exists Greater Speed than the Speed of Light, Is the Speed of Light not the Maximum Speed in Universe?

Surendra Mund[1], Abhi Raj[2]

[1]*Department of Physics, Central University of Rajasthan, Bandarshindhari, Ajmer, India*
[2]*Department of Physics, Delhi University, Delhi, India*

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Abstract - This particular article is devoted to disprove a very crucial and controversial statement given by a great physicist of all times in the history of mankind Albert Einstein [8] that- "the speed of light is constant ($c = 3 \times 10^8$) and the maximum speed in this universe" or nobody can experience faster than this speed (c). Now we are presenting new version of this ideology by using the "Principle of Causality" and the "Principle of Central System Relativity". In this paper, we have proved that there does not exist light (as defined by Einstein) like thing, but all there exists in universe are 'broken parts' (at different geometrical scales) because light exist on a particular geometrical scale as broken parts (on all geometrical scales exist in universe). The shorter geometry broken parts usually travels faster than the bigger one.

***Key Words*:** Broken Parts, Broken Part Cone, Causality Principle, EM-Waves, f-trons, Light Cone, Mosquito Paradox, Principle of Central System Relativity, Speed of Light, Universal Causality Principle

1. INTRODUCTION

Causality Principle is a very crucial point of view of thinking and observing various laws of physics and also have its own importance in philosophy. This Causality Principle [9] is followed by many physicists from the classical age of physics (Newtonian to Lagrangian and Hamiltonian mechanics) and defined in classical physics as- "An effect can't occur before it's cause", which is why, solutions such as the advanced time solution of the Leonard-Weichert potential [10] are discarded a physically meaningless. This principle of causality is also defined by Albert Einstein [11] in his remarkable theories special and general relativity as- "Casualty means that an effect can't occur from echoes that is not in the back (past) light cone [12] of that event". Which can be explained as "a cause can't have an effect outside its from (future) light cone. It is also counted that these restrictions caused by casualty are consistent with the constraint that mass (quantity of matter (ψ)) and energy that acts on as casual influences can travel faster than the speed of light or backward in time". So, Causality Principle is defined in various forms in various physical approaches and theories (Classical Mechanics, STR and GTR, Quantum Field Theory etc.). In this paper, at first, we are generalizing this principle of causality in Universal sense and then try to connect it with the "Principle of Central System Relativity" [6]. This generalization of Casualty Principle is also been satisfied in philosophical way because at first in physics this Causality Principle was adopted from philosophical literature [9]. We are also proving the mathematical proof of this all controversy by the fundamental constant defined by author one in his "Generalized Quantum Mechanics" as $\hbar_x$. Then, we have disproved the statement of Albert Einstein [8] by this "Universal Casualty Principle" that "The speed of light is the maximum and constant speed in universe".

After all this, we provided a very crucial point of view on a mosquito (Mosquito Paradox) which eats electrons and subatomic particles in sense of observer at solar system geometries or compare this all kind of creatures (like mosquito which eats electrons, human being living on solar systems, creatures living on electrons like bodies etc.) with the observers or divine creator on the starting point of universe (observer '$\mathcal{O}$' in central system relativistic case). In terms of proving former principles of physics, we proved in next section of paper that by variation in to the scalar field density (ρ_ϕ) (Reason of curvature into the space time or the reason behind the generation of Gravitational Interactions in Universe [7]), the speed of light also varies.

We have also proved that this variation can be measured majorly in two conditions-

(1) The broken parts are generated during a particular epoch but there is a variation into scalar field density (in this case or drop coupling its same for same kind of broken parts created during a particular epoch).

(2) The broken parts are generated during the two different Universal epochs (like broken parts in atomic sense (light) and broken parts in solar system case- in this case order of coupling is different; So, they couple differently for same kind of scalar field).

So, the first condition proves that speed of light is not a Universal constant and the second condition proves that speed of light is not the maximum speed in the universe. Then these

two conditions are satisfied by the "Universal Causality Principle" and implied to various bodies on different geometrical scale.

After doing this, we are to define the experimental setup to prove all this like we can prove it as "by measuring the variation into the speed of gravitational waves on earth and Mars". Here we have treated gravitational waves as sound waves, but in case of gravitational waves the density of medium is equal to the scalar field density and we know that scalar field density around our star (sun) varies uniformly. So, we will get more speed in more scalar field density (ρ_ϕ) as in case of sound wave travel faster in denser medium or we will measure more speed of gravitational waves near earth but measure less speed around the Mars (by excluding gravitational effects generated by earth and Mars).

2. Generalization of Causality Principle

At first, I (author[1]) am generalizing the Causality Principle in terms of my principle of "Central System Relativity" [7]. As we know by Principle of Central System Relativity the observer at the origin of universe '$\mathcal{O}$' observes same laws of physics for all kinds of geometries exist on different geometrical scales. So, for observer '$\mathcal{O}$' what should be the form of Casualty Principle? Will we ever know the cause and effect clearly for all kinds of bodies or not? The answer of this fundamental query is 'yes'- he will know the cause and effect of all events occurring in universe at any speed whether it is greater than the so-called "speed of light".

Now I am just generalizing this principle of causality by using Central System Relativity as- "When Someone try to observe a particular physical information about any physical body created during k^{th} inflation of universe (according to N-N-Time Inflationary Model of Universe) or observing an event on k^{th} geometrical scale in universe by using the broken parts of $(k-1)^{th}$ -type of bodies, then he will find out the cause behind that event in k^{th} to n^{th} (biggest) bodies; but he will never find out the cause behind an event occurring in $(k-1)^{th}$ to 1st -type of bodies exit in universe because these all bodies $(k-1)^{th}$ to 1st were created in universe during denser scalar field density; So, due to more higher order of coupling these shorter bodies have more speed of propagation in universe but on the other hand if he observes events occurring in all central systems by using the 1st -type of broken parts or from the origin of universe, then he will absolutely find out the cause behind any kind of event (weather on any speed level if we say 1st -type of broken parts have maximum speed in universe) occurring in universe."

Now let's imagine a marvellous thought experiment like I am leaving in my home at the electron and you are the human being living on your home on earth. I am observing events by using f-trons Broken parts (here f-trons are the shorter bodies from which electrons are formed like planets are formed by atoms) and you are observing events by using

broken parts of atoms (light or electromagnetic waves). So, I can see the size of an electron but you can't. This is because I am observing the electron as you observe the planet, but we both can't find out the cause in any event in f-trons because the f-trons behave for me as electron for you, and for you f-trons don't exist in Universe. Now I am providing a geometrical representation of all this stuff as-
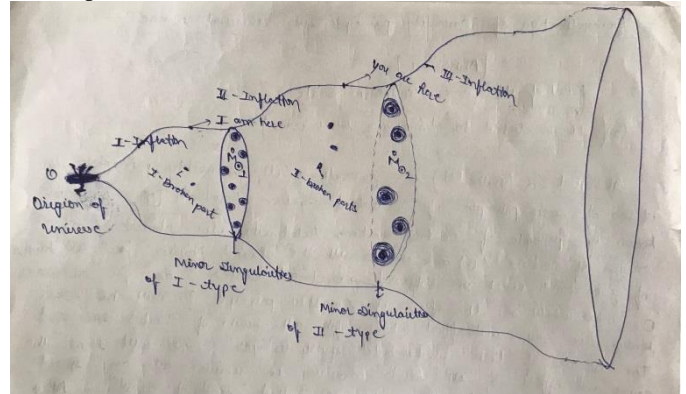

Fig -1: Geometrical Representation of the universe to Explain "Causality Principle"

So, from here we can conclude the fact that I can see all type of geometries rather than 1st-type of geometries but you can't see both 1st-type & 2nd-type of geometries.

First of all, we are going to discuss the causality principal (former), actually we are concluding some facts about Causality Principle like-

(1) Causality Principle tells cause precedes the effect in the universe.

(2) It also represents the arrow of time in the universe.

(3) It must be related to the entropy of the universe.

The Causality Principle is the most fundamental principles of universe. So, it must hold at every geometrical scale of universe whether it is Atomic or Galactic scale.

Now we are moving towards the second and most remarkable point of view of thinking about things in universe by using "Principle of Central System Relativity".

3. Connection between Causality Principle and Central System Relativity

So, at first, I (author[1]) am establishing a very elegant connection between the Universal Casualty Principle obtained by me in the previous section of this outstanding paper and Principle of Central System Relativity [6, 7]. Usually, we define three kinds of observers in "Central System Relativity" as-
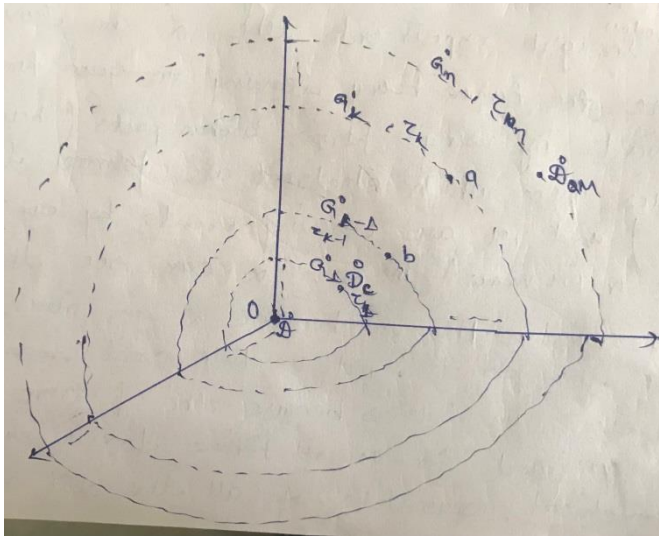
Fig -2: Geometrical Representation the Connection between the Causality Principle and Central System Relativity

We can observe from above epoch diagram of universe that we have same type of observer at origin of universe '$\mathcal{O}$' as, on the biggest geometrical scale as. Definitely, one very peculiar question is hitting your mental lexicon that how same type of observer can be at the origin and biggest central system in the universe and how it is related to the Universal Casualty Principle? Usually, observer $\mathcal{D}_{UM}^{\odot}$ observes the Universal mechanics which includes both theories Generalized Quantum Mechanics and "Central System Theory" (which work on macroscopic scale according to observer at shortest geometries G_1^0).

"So, according to observer at G_1^0, he will able to know the cause behind almost all events occurring in universe (except about the events occurring on the origin of universe). So, due to this transparency only he will able to observe the physical laws of same type for all kinds of central systems exist in universe and also continue to into them (as predicted by Principle of Central System Relativity). In the same manner, the observer at biggest geometries G_n^0 will also observe the same lows for all kind of central systems exist on shorter scale (as predicted by Principle of Central System Relativity) because why 'Universal Casualty Principle', he will never know the cause behind any event occurring in universe because everything is travelling faster than the speed of that observer at geometries, so, he will observe the uncertainty in each kind of central systems and the laws of physics he will observe absolutely as the laws of Generalized Quantum Mechanics."

So, in this way these both principles- "Principle of Central System Relativity" and "Universal Causality Principle" are completing each other and also prove the facts of each other. We can also connect these both principles for observer 'a' at G_k^0 and 'b' at G_{k-1}^0.

So, now we are going to disprove the statement of Albert Einstein about light which is the main motto of this paper and in this disprove we are also generalizing this statement by using some mathematical stuff. So, Einstein was not properly wrong about our epoch but he fails Universally (maybe he told but did not think like a divine creator).

4. Theoretical disproof of the Controversial statement of Albert about 'Speed of Light'

In 1905 Albert Einstein [8] used the speed of light as the main assumption of his marvelous 'special theory of relativity', which is completely related to his very crucial and controversial statement about the speed of light that- "The speed of light is a universal constant and the maximum speed in our universe" but literally as I justified before that he was only making this observation about over epoch in universe not the shorter bodies. This can also be the main reason behind his controversy about the quantum mechanics especially 'Heisenberg's Uncertainty Principle' because he was only trying to observe and formulate the laws of physics on microscopic scale as he did in his very beautiful "General Theory of Relativity".

According to the statement of Albert about light the speed of light or electromagnetic waves (broken parts of atoms) never very in universe and also the speed of gravitational waves or nothing can travel faster than the speed of light in this universe. The second thing is particularly related to the thing that he was only observing that atomic scale as the fundamental scale.

Now I (Author[2]) am stating proposition of theoretical perspective on explanation to prove why there should be higher speed than the speed of light in this universe. According to Albert Einstein if the speed of any type of body or information will be faster than 'c' then a Causality Principle will not hold means the cause does not proceed the effect.

So, if we are able to prove that at lowest geometrical scale if the speed of broken parts (light, here broken parts is equivalent to light type things) will be greater than the speed of broken parts (light) in our geometrical scale (bigger) then only the Causality Principle will be hold and if the speed of broken parts at lower geometrical scale will not be greater than the speed of broken parts at bigger geometrical scale then the Causality Principle is violated in the universe. Then this will be a farm proof to our consideration on the statement that "the speed of light is not the maximum speed in the universe or there exists more than this Speed".

4.1 Theoretical explanation: -

If we apply the Causality Principle to the universe at various geometrical scales of the universe or Arrow of time concept then we reach at the conclusion that the lower geometrical scales (atomic scales) must formed before than the higher geometrical scale (Solar system or Galactic system).

Consider the universe that we are observing right now, we living on earth or in our Solar system uses the photon (the broken parts of our geometrical scale or epoch) to see things or observe things (I will also make clear for the what do we mean by seeing) and we have also meteors, comets, asteroid etc. of different size or speed but Photon has the highest speed in our epoch and it is called as the light speed in our epoch.

One thing you can also understand that from planet scale we have smaller broken parts (photon) and also bigger broken parts (asteroids) but if you think from the Galactic scale then our bigger broken parts (asteroids) will behave as their smaller broken parts (photon, not in watching sense but in speed or size sense) and our plant will be their bigger broken parts (asteroids with lower speed).The speed of broken will kept decreasing as we move to bigger geometrical scale or further epochs because the density of Universal scaler field will be decreasing so less coupling is going to happen that will cause the decrease in the speed of broken parts. Hence the speed of asteroid for galaxy scale is less than the speed of light(photon)in our scale.

I want to clear you that light or seeing phenomena is only limited to our human perspective or human life things we are talking about observing things as I mention that at Galactic level our asteroids will behave like their Photon in a speed sense not seeing sense seeing is just limited to us not to the Universal sense it also means that at Galactic level our solar system will behave like asteroids with lower speed and this must be the case because as the universe evolve the density of scalar field decreases that decreases the speed of a particular broken part for Galaxy Central system. And our Photon (smaller broken parts) has much higher speed than their Photon (bigger broken parts or our asteroids).

We can see higher geometry levels (galaxy, solar systems) because our(planet) light seeing broken part (Photon)has more speed than the successor broken parts (means the broken parts of the galaxy at the Galactic level, Solar system).

So, we can see or observe that solar system formed before than the galaxy because the solar system belongs to lower geometrical scale than the galaxy so the broken parts of solar system (There Photon type things, again telling the world photon is just for the high speed and nothing else) has more speed than the broken parts of galaxy. So, the formation of galaxy is done after the formation of solar system. And the difference in the speed of broken parts make us able to see the formation of solar system precedes the formation of galaxy. If the broken part of Galactic system is faster than the broken part of solar system then we will see or observe that Galactic Central systems (bigger geometrical scale) are formed before the solar system.

So, from this theoretical explanation we can say that the broken parts at the solar system level have more speed than

the broken parts at the galaxy level if this will not be the case then we will not see the formation of solar system before the formation of galaxy system and this will violate the principal of causality or Arrow of time concept.

You can also think this like you are an observer at the origin of universe then the lowest geometrical scale broken parts have the maximum speed to make the Causality Principle or Arrow of time concept valid at Universal scale if this would not be the case then solar system will form before the atomic Central system for an observer at the origin of the universe (or the divine creator) and this will not only break the Causality Principle but also make the error of time flow in universe. But this is not the case in our universe so if you apply the same theoretical explanation or logic in backward to the lower geometrical scale then you will find one more answer to a mysterious question that why we can't see electrons or lower geometrical scales.

Just imagine that you are living or your home is at electron as our Earth then our (planet scale) Photon will act as asteroid for electron people and hence their photon or light particle or broken parts of electron must be of lower geometrical scale and higher speed than the speed of our (planet scale) to make us able to understand that the electron or atomic Central system formed before than planet. And if this will not be the case then the Causality Principle will break in the universe because then the formation of planets precedes the formation of atomic Central system but this is not the case so the broken parts of the electron(atomic)geometrical scale must have the higher speed than the broken parts of our geometrical scale mean the planet scale.

Because our eyes are only able to see the visible light or the speed of broken parts up to 'c' or lower so the speed of light (broken parts) at electron(atomic) geometry have higher speed so we cannot be able to see. If you ask a question from me what about different wavelengths that I will explain this concept by taking example take the example of Bee or mosquitoes (formed in our epoch). They can see different wavelengths not only visible but different wavelengths that we can't see but they cannot also see the electron(atomic) geometry because for them also the broken parts at atomic Central system level have higher than our universe broken parts.

And if electron could be seen by mosquitoes, then he/she may eat the electron or make any change in the electron and then we are not here to discuss these things. So, the electronic level or electronic geometry should form previously than the planet geometry so it's broken pass must have the higher speed and hence we cannot observe electronic geometry because we are just a very simple part of this universe, we have many boundaries like we can only see the visible light things.

Hence, we can conclude one thing from here that there is no such thing like 'light' all there exists is 'broken parts' and at

different geometrical scales having different speeds to make the Causality Principle valid or hold.

And if we talked about the Einstein thought on the light then we may come in conclusion that he said that he thought like a divine God and asks himself a question 'how I would have made this universe if I were a god' but by his theory it doesn't seems that he thought like a god because if he thought like a God then he must think Universally than he also come to the conclusion that the speed of light is not the highest speed in this universe.

And if we want to understand the point of view of Einstein in our prospective than we will tell that Einstein is correct for the particular epoch (our epoch). In our epoch the broken parts have the maximum speed which is the speed of light so Einstein only talked about the broken parts of our epoch. So, from here we can also conclude that the speed of light is not the highest speed in the universe.

So, now we (Especially Author[1]) assume that the atomic geometries are G_1^0-type in universe, then only this assumption may be right partially (because we are not including here origin of universe). But according to N-Time Inflationary Model of Universe we are living in 28th inflationary epoch and there exist almost 27-type of shorter body is including atomic scale as the biggest geometrical scale among them. Now according to my theoretical and mathematical proofs, we can conclude that shorter bodies travel faster than the bigger bodies in universe as well as their broken parts also. So, this all thing proves that "The speed of light (broken parts of atoms) is not the maximum speed in our universe, but the speed of broken parts of G_1^0-type of geometries have the maximum speed in our universe and atoms are not the G_1^0-type of geometries in our universe". Now I am explaining this all thing by geometrical representation of universe as-
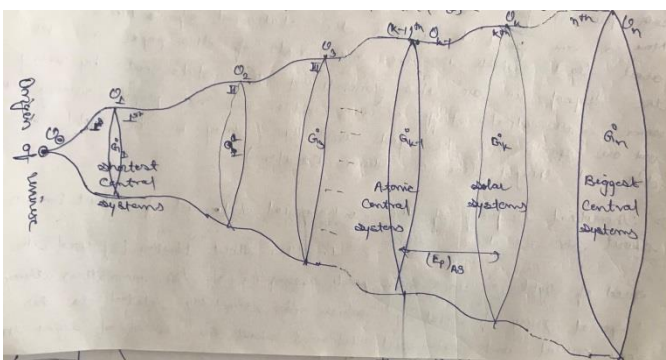

Fig -3: Geometrical Representation of Observers in Universal Principle of Causality

So, we are the observers at $\mathcal{O}_k$ using the broken parts type of geometries (not the shortest geometries- as proposed by former physicists 'like atoms are the shortest geometrical central systems in universe'). They were wrong because they only included the epoch (from G_{k-1}^0 to G_k^0 geometries) and this is the reason behind the failure of Einstein's statement about

light that it has the maximum speed in universe. So, now you must be thinking that how will behave the light cone for different type of observers (like $\mathcal{O}_\odot$, $\mathcal{O}_1$, $\mathcal{O}_2$ ...., $\mathcal{O}_{k-1}$, $\mathcal{O}_k$ ......$\mathcal{O}_n$) according to Principle of Central System Relativity. So, now I am defining the light cone for all kind of observers as-
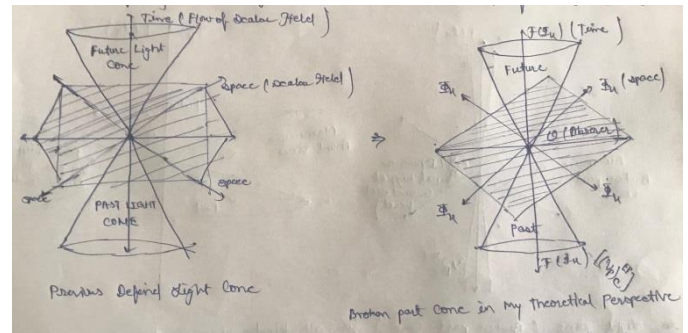

Fig -4: Generalization of previously existing Light Cone in Terms of "Universal Causality Principle"

So, now I have converted the light cone for different type of observers defined in the Universal diagram. Here in each case $\left(v_p\right)_c^{EP}$ is the critical speed of that particular epoch (EP) and as we know "Time is the flow of Universal scalar field and space is nothing else but scalar field".
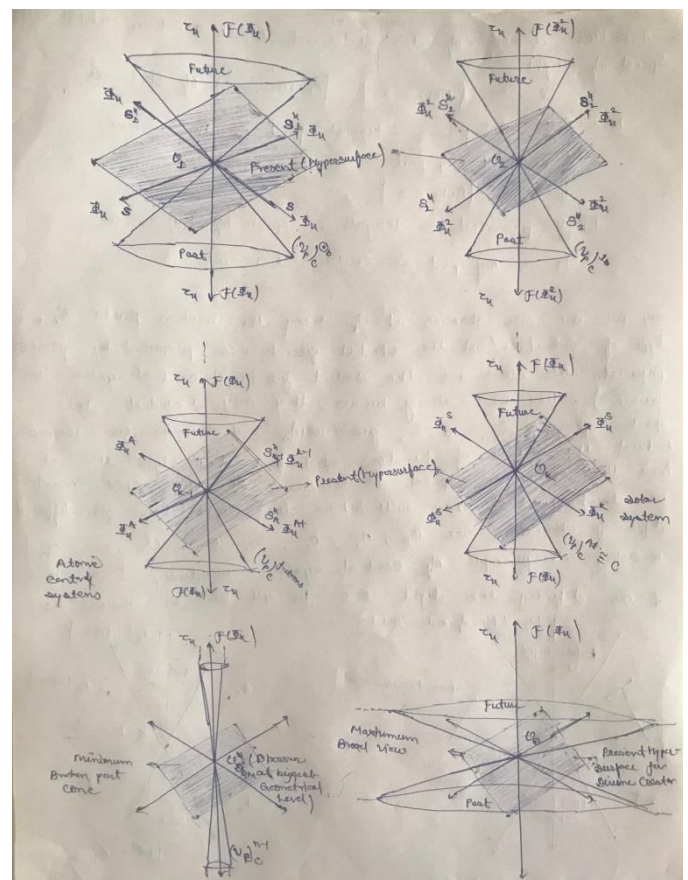

Fig -5: Geometrical Representation of Various kinds of Light Cones (Broken Parts Cones) exist for Observes in Figure '3'

So, light cone (broken part cone) for all kinds of observers depends on the speed by which they observe any event

occurring in universe. Here last two light cone seems so complicated but this is the divine truth that the observer $\mathcal{O}_{\mathcal{D}\substack{\odot \\ QM}}$ (observer using the broken parts of biggest geometrical scales) observes generalized quantum mechanical laws in universe but observers $\mathcal{O}_{\odot}$ have the maximum light cone or he can observe future and past clearly in universe or there does not exist any future road fast for this kind of observers.

Now let's go to the condition '1' that- "Speed of light is a Universal constant". This contradiction rises due to the so renowned experiment of Michelson and Morley [13], which was a set up for the disprove of the existence of ether a very elegant phenomenology but Michelson Morley did a very sincere mistake which I have encountered in my previous paper [7] and suggested a new kind of Michelson-Morley type experiment. According to me the light and gravitational waves propagates in same scalar field density, then light broken parts of atoms should behave like the sound waves in scalar field density. So, for simple case [7], I derived the speed of propagating wave in scalar field density as-

$$v_{\phi} = \sqrt{\frac{dP}{d\rho_{\phi}}}$$

(1)

Here as increases the pressure also increased rapidly so, ultimately speed increases like in case of sound waves travel faster in solids and slower in liquids and gases air. I have also derived the propagating speed formula for such waves in very high gravitational attraction and at variation in scalar field density like happens in minor singularity case in my upcoming paper which unifies all fundamental forces exist in universe, as-

$$
\begin{aligned}
v_{\phi} ={} & \frac{-1}{2}\left\{\frac{\left(\nabla_{\tau}\rho_{\phi} + \nabla_{\tau}(d\rho_{\phi})\right)}{\nabla_{x}\rho_{\phi}} + \frac{x}{d\rho_{\phi}}\nabla_{\tau}(d\rho_{\phi})\right\} \\
& + \frac{1}{2}\sqrt{\left\{\frac{\nabla_{\tau}\rho_{\phi}}{\nabla_{x}\rho_{\phi}} + \nabla_{\tau}(d\rho_{\phi})\left(\frac{1}{\nabla_{x}\rho_{\phi}} + \frac{x}{d\rho_{\phi}}\right)\right\}^{2} + 4\frac{dP}{d\rho_{\phi}}}
\end{aligned}
$$

(2)

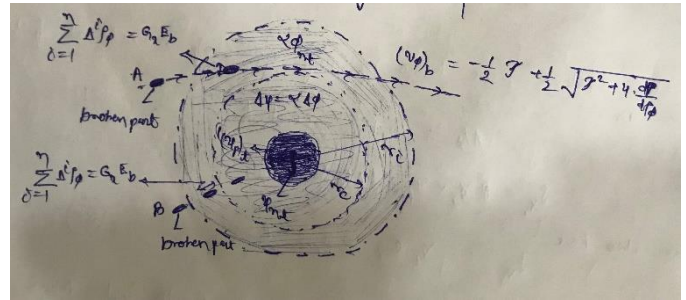So, this formula can be represented geometrically as-

Fig -6: Geometrical Representation of effects on Broken Parts by Variation into The Scalar Field Density around a particular body

From the above geometrical representation, we can see 2 kinds of effects on broken parts like in case 'A' the broken parts direction of propagation changes formerly defined by Albert Einstein as gravitational binding which is a beautiful prediction of the theory of general relativity and experimentally detected by Sir Arthur Eddington in 1919 [15], but in case 'B' the broken parts speed of propagation Changes. usually in normal condition both cases are applied on broken parts and ultimately changes the velocity of broken parts. So, here we have proved that the velocity of broken parts of any type including light varies in universe as the scalar field density varies in universe.

So, the above geometrical representation and mathematical formula proves that- "The speed of light is not a Universal constant as defined by Albert Einstein".

Einstein presented two thoughts regarding the Speed of Light: -

(1) This of light is highest speed in this universe.

(2) The speed of light is Universal constant.

Both the above facts are disproved by our theoretical explanation. Even the speed of light is not constant in a particular epoch of the universe as proved in the next section of this paper.

5. Variation in the speed of broken parts (light etc.) by variation in to the scalar field density in a particular epoch

Now Let's prove the statement that the speed of broken parts (Light, Asteroids etc.) can also very during a particular epoch by variation into the scalar field density during that particular report in universe. This can be represented geometrically as-
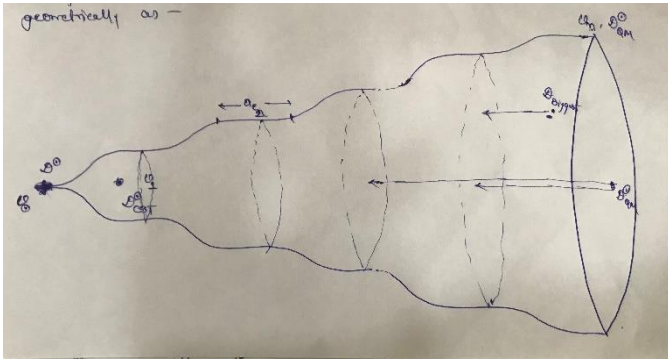
Fig -7: Geometrical Representation of Four Major types of Observers in Universe

Here is the scale factor of a particular epoch and can be or. In the above Universal diagram, there are 4 different and unique kinds of observers-

$$\begin{cases} \mathcal{D}_{UM}^{\circledcirc} = \text{Light Cone is Infinite} \\ \mathcal{D}_{CST}^{\circledcirc} = \text{Light Cone} \to \text{Infinity but not exactly} \\ \mathcal{D}_{Bigger}^{\circledcirc} = \text{Light Cone} \to \text{Zero but not exactly} \\ \mathcal{D}_{QM}^{\circledcirc} = \text{Light Cone is Zero} \end{cases}$$

So, during a particular epoch suppose, we define that there is a variation into the scalar field density as universe expands or contracts. Now let's assume the simple case, when universe is expanding, then the scalar field density ultimately in universe will obviously decrease with time. Show, now define this by a geometrical representation of an epoch as-
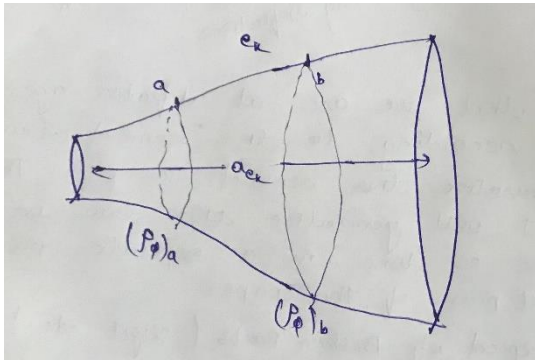

Fig -8: Geometrical Representation of a particular epoch in which the speed of light varies

So, we can conclude from above geometrical representation that-

$$(v_\phi)_b < (v_\phi)_a \Rightarrow (v_\phi)_b < (v_\phi)_a$$

6. Mathematical Proof of the Statement that Shorter Bodies and corresponding Broken Parts travel faster than the Bigger Bodies and corresponding Broken Parts

Now I am proving that why they speed of shorter broken parts is more than the speed of the bigger broken parts by us-

ing the concepts of transformation of spin, entropy and quantity of disturbance. At first, I have defined in Generalized Quantum Mechanics that the fundamental quanta of spin ($\hbar_x$) for different kinds of central systems behave as-

$$\hbar_{Shorter} \gg \hbar_{Bigger}$$

(3)

This happens because during formation of a particular body the spin of its component shorter bodies transforms and it is some part of their spin shorter bodies which is provided to the bigger body or usually bye coupling is more in shorter bodies, we can also understand this fact that there must be maximum speed of broken parts of first type of bodies because these type of bodies have maximum spin and broken parts speed is purely related to the quantity of spin and after that in bigger bodies this speed must decrease because of condition.

Now I am proving this old statement by using the concept of entropy and quantity of disturbance with the transformation of spin. As we know the quantity of spin and quantity of disturbance from my previous paper can be written as-

$$\mathfrak{D} = s_x \frac{\psi_p}{\alpha \Delta \phi} = n\hbar_x$$

(4)

We can also right quantity of spin as-

$$\mathfrak{D} = s_x' \frac{(\psi_{nt}).\alpha \Delta \phi}{(\psi_p)_t.\phi_{nt}} \equiv n\hbar_x$$

(6)

Here-

$$s_x' \frac{(\psi_{nt}).\alpha \Delta \phi}{(\psi_p)_t.\phi_{nt}} = s_x \frac{\psi_p}{\alpha \Delta \phi}$$

(7)

$$s_x' = \left(\frac{(\psi_{nt}).(\alpha \Delta \phi)^2}{(\psi_p)_t.\phi_{nt}.\psi_p} \right) s_x$$

(8)

Now quantity of geometry can be written as-

$$G^0 = \pi \frac{\partial \alpha}{\partial \tau}$$

(9)

Now by using extended Bohr's Second Hypothesis [7] as-

$$\psi.\left(v_p\right)_B.(r_c)_B = n\hbar_x = \rightleftharpoons = s_x' \frac{(\psi_{nt}).\alpha\Delta\phi}{(\psi_p)_t.\phi_{nt}}$$

(10)

Now by using the value of interaction radius from my paper [6] as-

$$r_i = R_i(1-\eta).\frac{\alpha\phi_{nt}+\alpha\Delta\phi}{\psi}$$

(11)

Now putting this all things together, we get-

$$\left(v_p\right)_B = \frac{n\hbar_x}{R_i(1-\eta).(\alpha\phi_{nt}+\alpha\Delta\phi)}$$

(12)

As we know that $\hbar_{Shorter} \gg \hbar_{Bigger}$ from equation (3), then-

$$\left(v_p\right)_{B_{Shorter}}$$
$$= \frac{n\hbar_{Shorter}}{(R_i)_{Shorter}(\eta_{Shorter}^*).(\alpha\phi_{nt}+\alpha\Delta\phi)_{Shorter}}$$

(13)

$$\left(v_p\right)_{B_{Bigger}}$$
$$= \frac{n\hbar_{Bigger}}{(R_i)_{Bigger}(\eta_{Bigger}^*).(\alpha\phi_{nt}+\alpha\Delta\phi)_{Bigger}}$$

(14)

So, we get by comparison of both above equations-

$$\hbar_{Shorter} \gg \hbar_{Bigger}$$
$$\Rightarrow \frac{(R_i)_{Shorter}(\eta_{Shorter}^*).(\alpha\phi_{nt}+\alpha\Delta\phi)_{Shorter}}{n_{Shorter}}\left(v_p\right)_{B_{Shorter}}$$
$$\gg \frac{(R_i)_{Bigger}(\eta_{SBigger}^*).(\alpha\phi_{nt}+\alpha\Delta\phi)_{Bigger}}{n_{Bigger}}\left(v_p\right)_{B_{Bigger}}$$

(15)

Hence, we can write it as-

$$\rightleftharpoons_{BS}$$
$$= \frac{(R_i)_{Bigger}(\eta_{SBigger}^*).(\alpha\phi_{nt}+\alpha\Delta\phi)_{Bigger}.n_{Shorter}}{(R_i)_{Shorter}(\eta_{Shorter}^*).(\alpha\phi_{nt}+\alpha\Delta\phi)_{Shorter}.n_{Bigger}}$$

(16)

Now by putting this Ole in above equation, we get-

$$\left(v_p\right)_{B_{Shorter}} \gg \rightleftharpoons_{BS}\left(v_p\right)_{B_{Bigger}}$$

(17)

Usually, $\rightleftharpoons_{BS} > 1$ but not very-very greater than 1, so we can ultimately say-

$$\left(v_p\right)_{B_{Shorter}} > \left(v_p\right)_{B_{Bigger}}$$

(18)

So, speed of shorter body is always greater than Speed of bigger bodies in usual cases. Now by using Einstein's relation for broken parts, we get-

$$E_b = \phi_b\psi_b = \hbar_x v_b$$

(19)

We know from my equation for broken parts as-

$$\psi_b = \alpha\Delta\phi_b \ \& \ \Delta\psi_b = \alpha\Delta\phi_b = \psi_b$$

(20)

Usually, this relation is followed for k-time variation and value depends on the order of coupling of that particular scalar field. Hence-

$$\Delta^k\psi_b = \psi_b$$

(21)

$\left(v_p\right)_b$ Is broken part speed.

Now by putting this all stuff into equation (19) as-

$$\frac{\psi_b(v_p)_b^2}{v_b} = \hbar_x$$

(23)

And we know by transformation of spin that-

$$\hbar_{Shorter} \gg \hbar_{Bigger} \Rightarrow \frac{\psi_{b_{Shorter}}\left[(v_p)_b^2\right]_{Shorter}}{(v_b)_{Shorter}}$$
$$\gg \frac{\psi_{b_{Bigger}}\left[(v_p)_b^2\right]_{Bigger}}{(v_b)_{Bigger}}$$

(24)

$$\left[(v_p)_b\right]_{Shorter} \gg \Upsilon_{BS} \left[(v_p)_b\right]_{Bigger}$$

(29)

Here-

$$\Upsilon_{BS} = \sqrt{\frac{\psi_{b\,Bigger}(v_b)_{Shorter}}{\psi_{b\,Shorter}(v_b)_{Bigger}}} > 1$$

(26)

So, ultimately, we get-

$$(v_p)_{b_{Shorter}} > (v_p)_{b_{Bigger}}$$

(27)

So, broken parts speed of shorter bodies is also greater than the broken parts speed of bigger bodies.

7. Suggestions for Experimental Verification

Now I (Author[1]) am suggesting an experimental Proof of all these things that speed of light is not a Universal constant, by representing this problem geometrically in our solar system as-
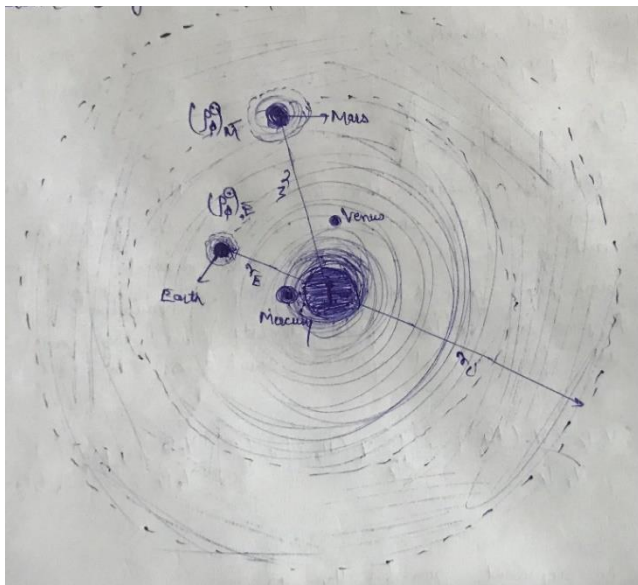

Fig -9: Geometrical Representation of Variation into the speed of light in our solar system

For our solar system, we know by my equation of variational field scalar field around sun as-

$$\Delta\rho_\phi = G_x E_{sun} = Constant$$

(28)

$$\delta_{\mathbb{V}} = \mathbb{V}_x \alpha\psi_{per}(\Delta\rho_\phi)_c = \mathbb{V}_x \alpha\psi_{per}.C$$

Or we also have-

$$\delta_{\mathbb{V}} = \mathbb{V}_x G_x \alpha\psi_{per} E_{sun}$$

(30)

Now by excluding the variational effects of earth and Mars if we measure the density of a scalar field then, we assume the speed of gravitational wave defined by equation (2), then we find that the speed of gravitational wave is greater around earth but lesser around Mars. Here around means into the orbit of these planets. This can also be measured as-

$$v_\phi = \sqrt{\frac{dP}{d\rho_\phi}} = \sqrt{\frac{dP}{C}}$$

(31)

Because $d\rho_\phi = C$ = constant.

We can also measure this effect as the earth on perihelion and apple eon Situation but it will be very small variation. We can represent it as-
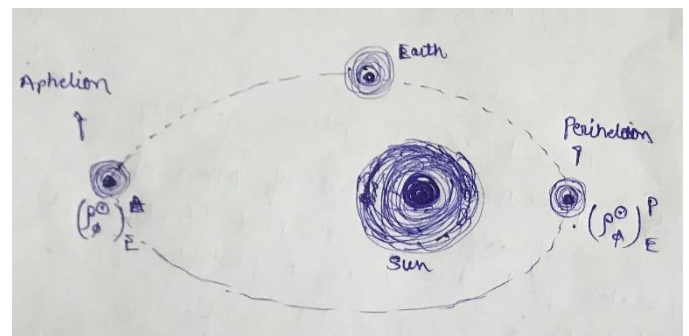

Fig -10: Geometrical Representation of the Experimental Verification technique to Measure the variation into Speed of Gravitational Waves on Earth

Here in this case-

$$\left(\rho_\phi^\odot\right)_E^P > \left(\rho_\phi^\odot\right)_E^A$$

(32)

Here $\left(\rho_\phi^\odot\right)_E^P$ is the scalar field density when the earth is on perihelion and $\left(\rho_\phi^\odot\right)_E^A$ is the scalar field density when the earth is on Aphelion situation. So, the speed of gravitational waves measure during apple Leone and perihelion are like this-

$$\left(v_\phi\right)_E^P > \left(v_\phi\right)_E^A$$

(33)

We (Especially Author[2]) are suggesting a way to check the consistency of speed of light experimentally. You can check the variation in speed of gravitational wave by comparing around or near the Earth and the Mars. And if you are more curious then you can also check the variation near Sun and Earth. So we can't able to see atomic Central system anytime in our universe but if you ask why we can see the bigger Central system but not the shorter central system then I will answer you that the broken parts of the bigger central system have the lower speed of their light or their broken parts then the broken parts of our geometrical scale means at our geometrical scale the broken parts has the speed more than the higher geometrical scales type broken parts so we can able to see the higher geometry but this is not the case in the case of lower geometrical scales where the speed of their broken part or lower geometrical broken part is higher than the speed that we can observe but the observer at the origin or starting of the universe can see any geometrical scale because the starting broken part have the maximum or highest speed in universe and the broken parts with further geometrical scale have lower speed than this.

In our future works we will try to find out two things importantly first of all what is the maximum speed of the broken parts in our universe and also prove by our concept that the speed of broken part in our universe is equivalent to the speed of light as predicted by Maxwell equation.

Now the determined task of this paper is completed and we are concluding some facts from it.
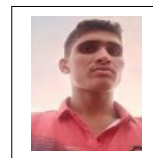
8. CONCLUSIONS

So, we are giving the finishing touch to this article by concluding some facts from it as-

- Albert Einstein's statement about light is completely wrong in Universal sense but it is a genius ideology in sense of our epoch.
- Speed of light in our epoch is not a Universal constant and it is also not the maximum speed in universe according to N-Time Inflationary Model of Universe.
- Casualty Principle can be generalized in Universal sense is Universal Causality Principle by using the Principle of Central System Relativity. Universal Causality Principle and principal of central system relativity are deeply interrelated with each other and Ken also proves each other correct.
- Mosquito paradox can be explained by this Universal Casualty Principle.
- The light cone for the divine creator is like this that he can know everything in universe present, past and future on one moment or time behaves like 04 divine creator or observer at the origin of the universe.
- We can prove this whole article right experimentally by measuring the variation into the speed of gravitational waves on earth on perihelion and aphelian respectively.

REFERENCES

1. S. Mund, "On the Configuration of EM Waves and Bosons", IJRAMT, vol. 2, no. 7, pp. 162– 168, Jul. 2021.
2. S. Mund, "Generalization of Different Type of Bodies Exist in Universe", IJRAMT, vol. 2, no. 7, pp. 213-220, Jul. 2021.
3. S. Mund, "Formation and Stability of Various Type of Central Systems in Universe", IJRAMT, vol. 2, no. 7, pp. 293-301, Jul. 2021.
4. S. Mund, "Generalization of All Fundamental Forces Exist in Universe", IJRAMT, vol. 2, no. 7, pp. 351-368, Aug. 2021.
5. S. Mund, "Standard Definitions of All Fundamental Quantities Exist in Universe", IJRAMT, vol. 2, no. 8, pp. 122–143, Sep. 2021.
6. S. Mund, "Generalization of Various Kinds of Scalar Fields Exist in Universe and Their Mathematical Representations", IJRPR, vol. 2, no. 11, pp. 52–100, Nov. 2021.
7. S. Mund, "Unification of General Relativity and Quantum Mechanics by the Principle of Central System Relativity", IJRESM, vol. 5, Issue. 1, pp. 1-54, Jan. 2022. DOI: 10.55041/IJSREM11463.

8. John Stachel and A. Einstein, "Einstein's Miraculous Year: five papers that changed the face of physics", Princeton University Press, 41 William Street, Princeton, New Jersey 08540, ISBN 0-691-05938-1 https://doi.org/10.2307/j.ctv1h9dh0mBaldonado

9. D'Ariano Giacomo Mauro 2018, "Causality re-established", *Phil.Trans.R.Soc.A.***376**20170313, https://doi.org/10.1098/rsta.2017.033

10. Whitney, C. K. (1988). On the Lienard-Wiechert potentials. *Hadronic Journal;(USA)*, *11*(5).

11. Ben-Menahem, Y. (1993). Struggling with Causality: Einstein's Case. *Science in Context, 6*(1), 291-310. doi:10.1017/S0269889700001393

12. Shankland, R. S. (1964). Michelson-morley experiment. *American Journal of Physics*, *32*(1), 16-35.

BIOGRAPHIES

I am a Physicist, Cosmologist and Bachelors Student at Central University of Rajasthan in my final year, Here I enrolled as Integrated Master's Student of Physics. I entered here in 2018 just after completing my High School from PCM. I am Passionately Curious about Universe from my High School days and read many Theoretical Physics Books to explore it. I published 7 research papers in various international journals in theoretical physics and cosmology. My all articles are related with each other and indicate towards a new theory of cosmos which is applicable on whole universe unlike Quantum Mechanics and General Relativity. In this theoretical perspective, I have unified all Fundamental Forces with Quantum Mechanics and General Relativity in terms of Central System Relativity.