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Fundamental Theory of Singularity; Formulated study - 1

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Abstract: *Time dilation has no significance for time travel in physical plane. It actually indicates the overall depth of space-time while the observation made on speed of light is a projection seen at the surface level. And time dilation said to be due to gravitation is also not true, it indicates the difference in crests and troughs along the overall surface of space-time medium. We will see the clear difference between two kinds of time dilation in space-time medium shown with one diagrammatic representation in this paper.*

Key points

(i) Speed of light is something natural which we compare it with the estimated speed of distance travelled by time taken happening in our day-to-day life with the moving objects.

ii) Speed of light is an emission from its energy source rather than an accelerated one. So, speed factor in case of light is well associated with it such that, light itself means light speed (inseparable).

iii) Emitting energy source of nature could not be compared with artificial energy sources whose speed is said to be varying upon accelerating-decelerating conditions.

(iv) Suppose, if our speed calculation could be standardized or manipulated with a proportionality to natural speed of light at its reduced scale, like what is one second for light photon travelling a distance then, we would know how time dilation is a finite observation.

v) The formula of speed is applicable even for light photons in space-time means, light particles to travel to distant galaxies, it takes its own time termed as "light years" (distance travelled by light in one year time of human made calendar) obeying the conventional speed formula.

vi) Light speed never approaches time zero and the volume of the photon even without having to travel a distance with its speed is readily close to sp-ti 0 in terms of size factor. The photon starting to travel must be a length running parallel to this sp-ti 0 axis in space-time medium.

Keywords: *Length contraction, time dilation, Sp-ti 0, Sp-ti 0 axis, Sp-ti tolerance limit, Gravitation, Speed of light, Neutron star, Black holes, Singularity, Relativity, Duality, Perspectives, Symmetry, Zero gravity, Dimensions.*

1. INTRODUCTION

Space-time is a single entity, greatest discovery ever by the former scientist Sir Albert Einstein. We shall see the idea of discovery by his experimentation with speed of light. We know the value of speed of light is 3 x 10^8 m/s, which is 300,000 (3 lakhs) km per second.

So, by the formula, Speed = Distance travelled / Time taken

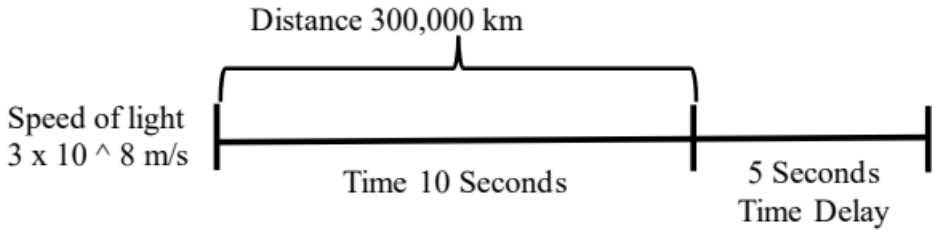
If we consider a distance of 30 lakhs km, then time required to travel this distance by the speed of light would be

Time (sec) = Distance / Speed

= (3 x 10^9) / (3 x 10^8)

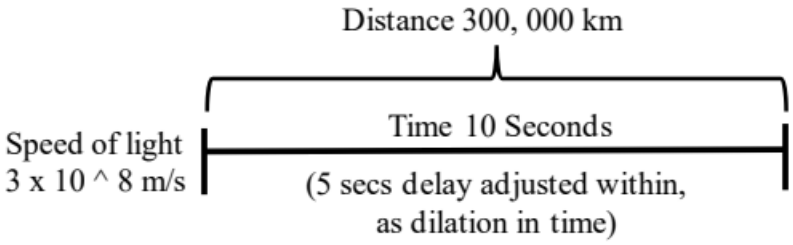
= 10 seconds

But Sir Einstein observed something different that, there was a time delay. For example (say) it took 15 secs instead of 10 (i.e.,) 5 seconds delay more than estimated time.



However, for a constant value of speed and distance, there shall not be any increase or decrease in time. If we decide to travel in a vehicle at the speed of 60 km/hr, it is obvious that we would reach the destination of 60 km in 1 hour and this estimated time does not change unless there is a variation in speed value.

So, to obey the formula, he assumed this time delay in such a way that, it is the same 10 seconds but the interval between consecutive seconds is delayed. Means, ticking of clock from one second to another, is slowed down than normal. This observation is termed as "time dilation".



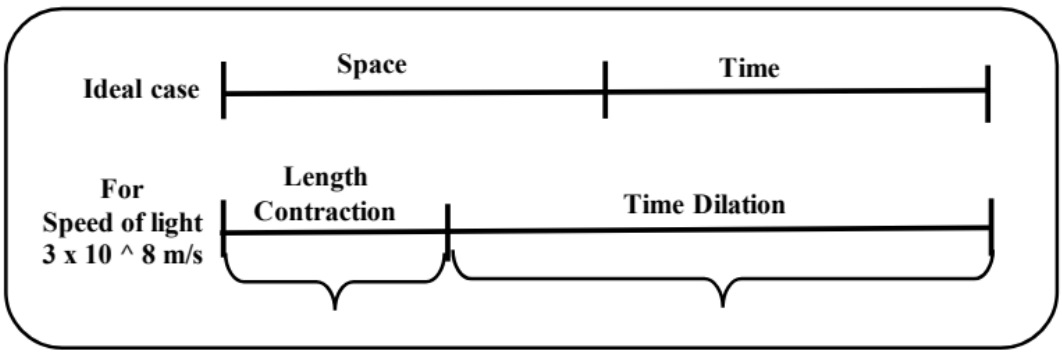
Without affecting the formula, if there could be some changes in time, it made him think of the considered destination point to have come closer in accordance with time dilation and termed this shortened distance as "Length contraction". Time dilation and Length contraction are in fact daring declarations by Sir Albert Einstein that if average people had observed such time variation, they would possibly doubt the experimentation itself have gone wrong.

1.1. Misconceptions

Now, although these two scientific observations are true findings, unimaginable and untouchable for average human minds, they are not thoroughly analyzed in physical plane and declared the following, which are all misconceptions indeed.

1) He said travelling at the speed of light is approaching time zero in space-time. Means, he thought time dilation to be continuous and tending to zero time.
2) If clock time is slowing down then it will slow down the life itself that, it would even slow down the aging of living beings if allowed to travel at the speed of light.
3) Also, if we could travel faster than light, then it crosses time zero which means we could move backward in time to our past.
4) This variation in time is assumed physical, possibly move back (past) and forth (future) in time which led to the concept of time travelling.

What is misleading with the above said points could be understood with some simple representations.



Ideally, let us assume space and time to be two equivalent natures, represented by a line divided into two halves such that within same limit, change in one nature has an obvious change in the other and it is said to be a dual observation.

1.2. New Interpretations

1) For constant value of light speed, the two observations must have some limits and never tends to zero. Calculations of length contraction and time dilation may not be required but shall be understood for finite values.

2) If the variations are continuous to approach zero then time dilates to zero where clock stops ticking and the length completely contracts to zero which means when the object starts travelling at the speed of light, the destination is almost instantaneous in two ways,

a) There is no distance to travel.

b) Time required for travel is zero.

However, this is not the case in reality as shown in the representation.

3) Moreover, the concept of time travel is associated with human consciousness and time dilation has no significance for the same in physical plane. Then what does time dilation in space-time actually means or indicates?

4) We shall discuss in detail, before that we will see where the single entity of space-time is realized in practical life. Satellite clock synchronized with the clock in earth, observed over a period of time shows a time difference which made the scientists confirm time dilation is true however, this time it is assumed due to gravitation (being its cause).

Our discussion and drawings in this paper will clearly show how speed factor of light as well as gravitation has no connection with time dilation in reality and thus solves the mysteries of modern science.

2. SIR EINSTEIN'S REPRESENTATION OF SPACE-TIME

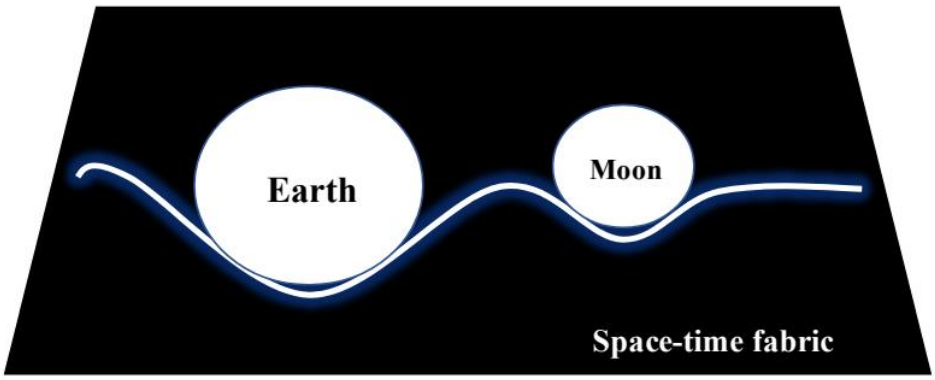


Fig 182(a)

Heavy objects like sun, stars and planets are said to cause curvature in space-time, means space-time behaves like a fabric for the objects in it, as shown in Fig 182(a). This difference in curvatures is responsible for gravitational setup for either objects to fall to the ground of the heavy object (Earth) or revolve around it, if they are closer but beyond certain limits, like moon revolving the earth. Also, the above representation is the higher level of understanding gravitation in existing studies since past century. This way of visualizing gravitation at macro scale is not useful for particle physics, which led to wonder about gravity at quantum scale.

Now, let us see how the space-time fabric could be modified into a scientific diagram with details and symmetry.

2.1. Modification of Space-Time Representation

We have two main requirements for modification of space-time representation, to be discussed as follows,

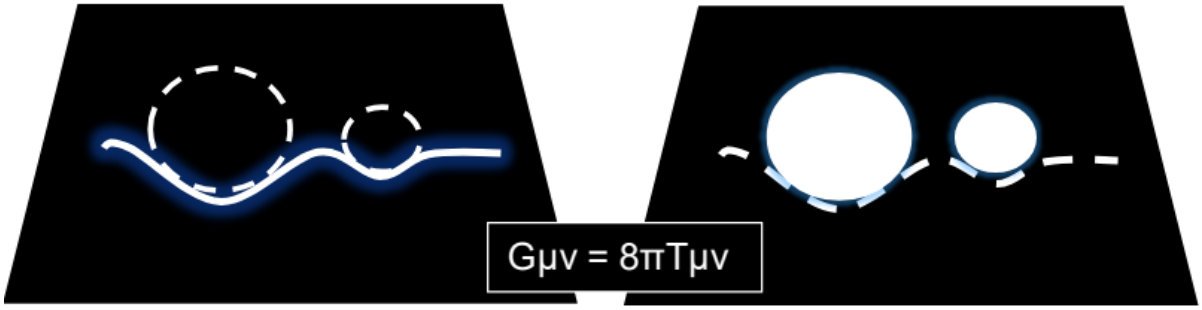


Fig 182(b)

In the above picture, Gravitation is believed to exist or work with difference in curvatures formed in space-time medium by matter. On the left side of the equation is a tensor describing the geometry of spacetime – the gravitational field. On the right-side tensor describing the matter and energy density – the source of gravitational field. In simple terms, it is quoted as **"Space-time tells matter how to move and matter tells space-time how to curve"**. [Ref: Google pages]

In fact, theory of relativity could be called as **theory of duality**, as the above diagram could not be split into two, due to the equation that still combines the geometry of space-time with matter. And also, it shows one does not exist without the other (dual) either. This made the interpretation of gravitation at macro-scale could not mean the same at quantum level.

Now, theory of singularity could take us into deeper space-time by separating matter as an object and geometry of space-time to be the Sp-ti medium containing the object. Which means, in singular perspective, only one object to be stacked over other at a time. If they are considered as medium and object then, a medium could exist even without the object but vice-versa is not possible. An object needs a medium to evolve in it.

As it is said, heavy objects are bending the space-time with its mass density then there must an obvious point, where the space-time fabric is unbent by the object of certain density. To understand this single line representation of space-time fabric is insufficient. We consider a pair of lines with symmetry that shows the variations clearly.

We see the curvature of single line caused by the object to appear like sagging in space-time fabric. However, with double line representation, it shows the space-time fabric is actually bitten by the object. Also, the unbent double line means a flat space-time medium without heavy objects or the objects within this tolerance limit does not bend space-time lines. This dual line with certain limits could be termed as **"Sp-ti tolerance"**.

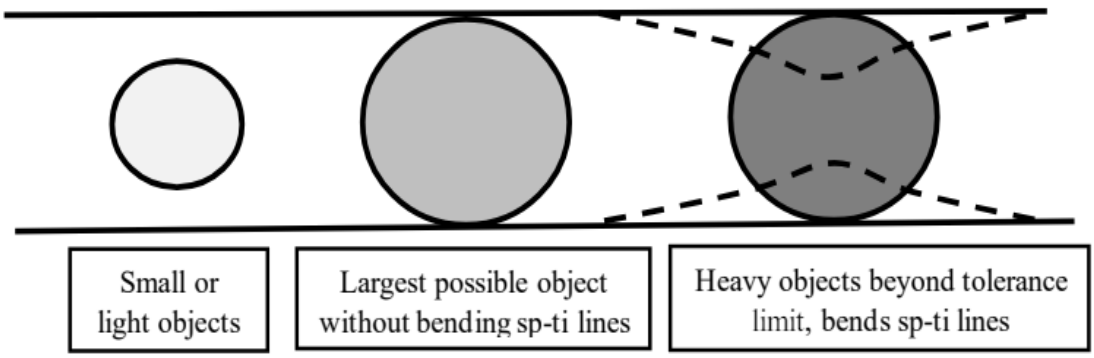


Fig 183

Clearly, heaviness or mass density of the object is responsible for bending of space-time. So, what if the two considered objects are heavy but varying in sizes? In that case, objects of different sizes to be solved. We have a pair of dualities in human perspective as follows,

1) Appearance of objects to be big and small.
2) Appearance of objects to be farther and closer.

Case 1: Two identical objects, one moved away from the observer

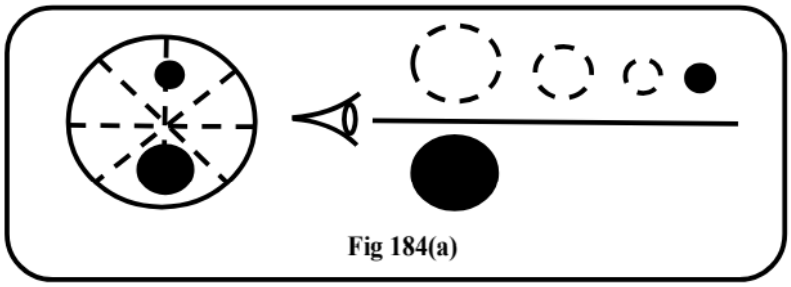


Fig 184(a)

Case 2: Smaller object closer and bigger object farther

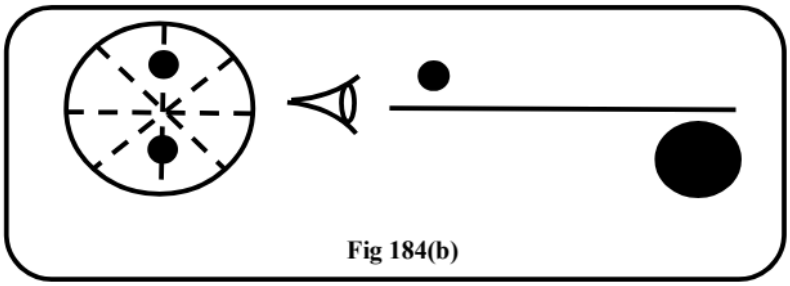


Fig 184(b)

Conclusion: No object is smaller or bigger, farther or closer, it is about how objects in life are projected to human perspective. This duality pair could be solved with singular perspective and applied in space-time representation as follows,

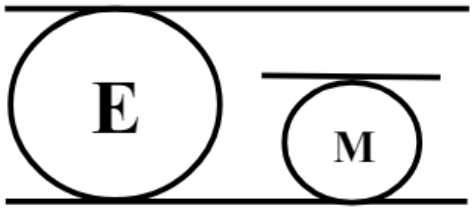


Fig 185(a) Dual or human perspective

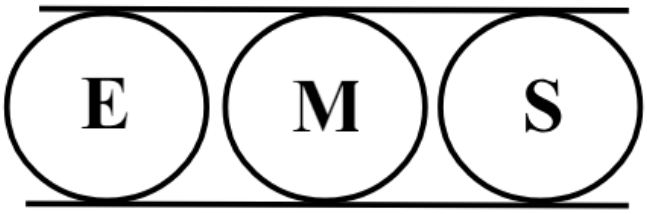


Fig 185(b) Singular perspective

Space-time fabric is shown unbent by the heavy objects such as Earth, Moon and Sun represented with average circles of same size. It is based on the fact that human perspective is dual in nature such that, human consciousness could never ignore the other face of a coin while observing head or tail at a time. Whereas, in singular perspective, there is no difference of observer and observing object as two different things to exist. Means, the whole existence is considered as an eye, in which varying sizes are solved to be same in singularity (unobserved).

3. Release of Gravitation from Sp-ti Fabric

Now we shall indicate the curvature caused by the objects in space-time in terms of **changes in Sp-ti tolerance** instead of saying it as bending of gravitational field, which is a false assumption.

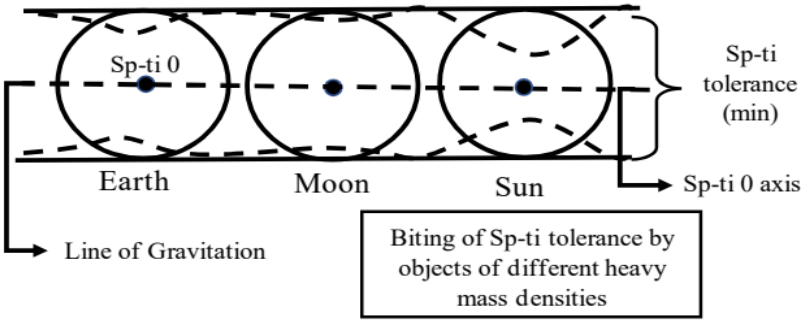
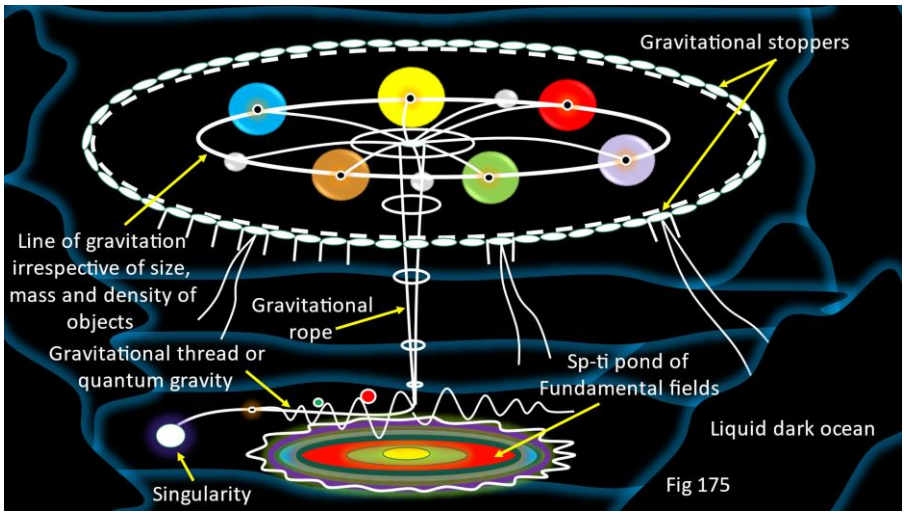


Fig 186(a)

With all these modifications what would happen to the Gravitation. The line of Gravitation is traced to be free irrespective of mass, volume and even density of objects, running along the axis of Sp-ti 0, that

passes through all the objects of existence even through the fundamental particles at quantum level. Thus, gravitation is a fourth dimensional aspect pertaining to Sp-ti medium and could not be accessed from or studied on the object side. Mass of an object is only to experience gravitation. Existence of gravitation is independent of objects and thus it is said to be associated with one of the natures of Sp-ti medium. [Fig 175 is a reference from previous journal].



[Line of Gravitation (General relativity) – Gravitational rope – Quantum gravity]

3.1. General Relativity Connected to Quantum Mechanics

This line of gravitation passing through objects at macro-scale and then to nano-scale is the connection that solves the contradiction between general relativity and quantum mechanics. The only difference in interpretation of gravitation between two scales is, for macro-objects it is shown to pass through the core or center point of the object whereas in case of nano objects like sub atomic or fundamental particles, the line of gravitation serves Sp-ti 0 axis for particles to move across perpendicularly. Appearance and disappearance of particles occur with intermediate zeros along this axis perpendicular to their wave path. [Ref: Previous journal on particle physics Fig no.84, 85]

Now, we require another way of representing Sp-ti tolerance to move deeper into space-time. We see the tolerance is bitten by the heavy objects that forms a ridge and deep surface levels. Let us show it like a uniform wave (two waves shown for symmetry) with crests and troughs well within the Sp-ti tolerance max.

What is different about this alternative representation, is very minute. Previously, the dual line represents Sp-ti tolerance minimum from where the heavy objects begin to bend the space-time lines, but now it is Sp-ti tolerance maximum beyond which there is no object exist, leading to black holes in space-time medium. These black holes simply mean, it is beyond living limit in space-time medium. Black holes are not hollow for objects. Edge of a black hole itself has points of space zero-time zero (Sp-ti 0).

At this edge point the **gravity is absolutely zero**. The line of gravitation terminates / emerges at this point [Ref: Previous journals for structure of black holes Fig.142 (d)]. Scientists wrongly believe that, it is the point from where high gravity pull begins towards singularity. But the force involved inside a black hole is not a gravitation is the truth, which could be found or marked only with real dimensions of space-time.

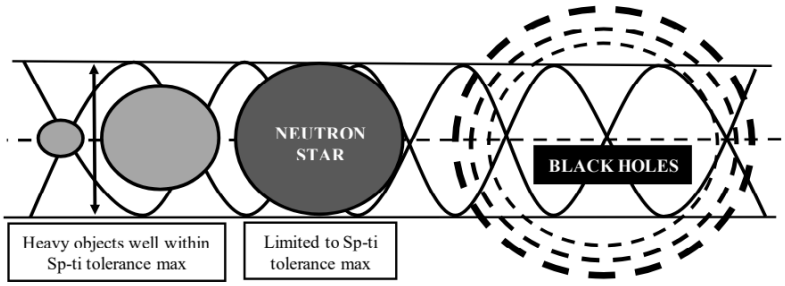
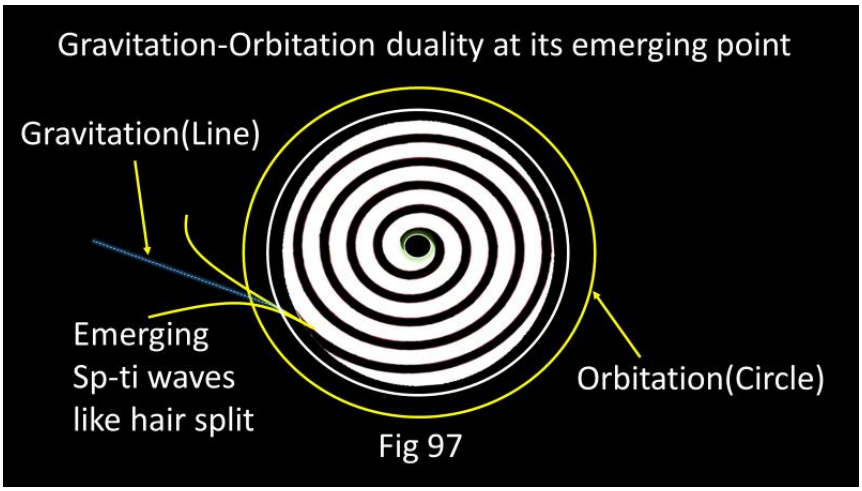
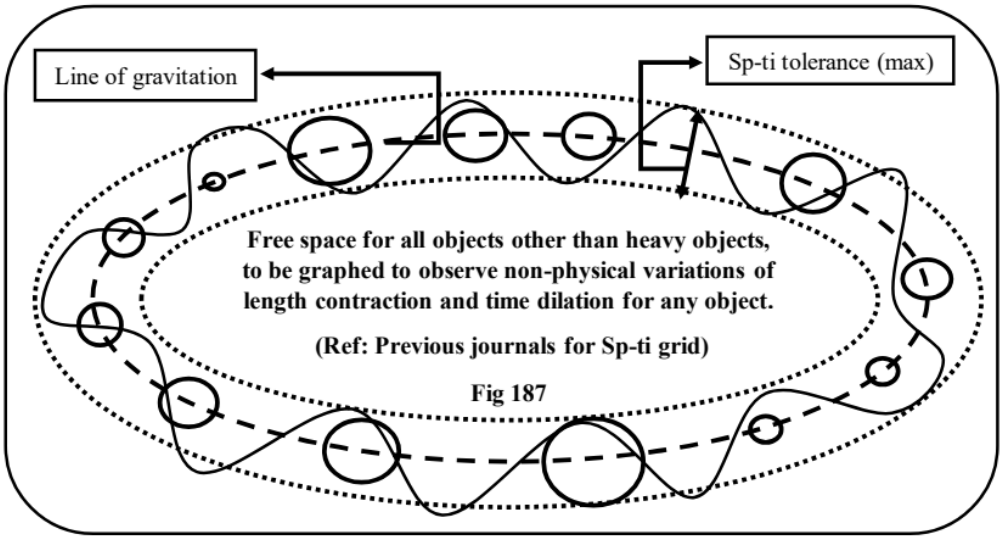


Fig 186(b)

The objects of varying mass densities are shown in Fig 186(b) with different sizes in which the Sp-ti 0 axis is running through their center. Here, varying sizes refers to density and not volume.

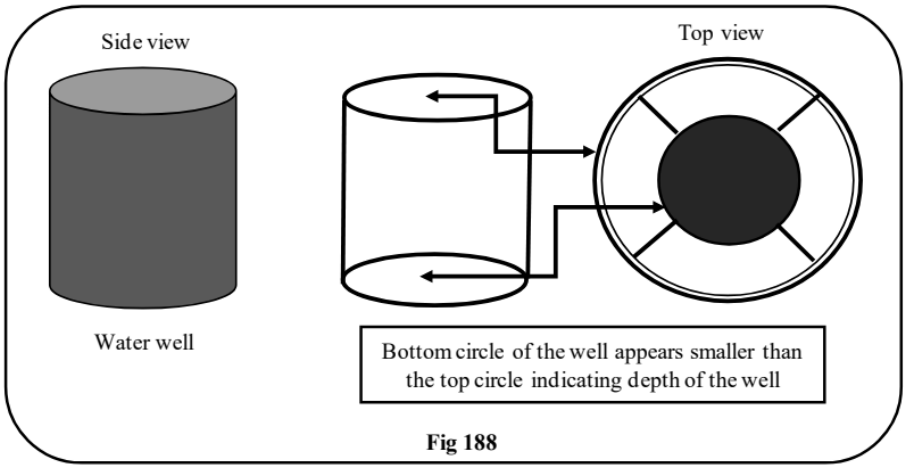


. [Fig 97 is a reference from previous journal]



Now considering a set of heavy objects that constitute a solar system can be represented as shown in Fig 187. Here Sp-ti tolerance max is the limit or boundary for heavy as well as light objects in space-time to be noted.

Now, back to **Time dilation, what does it actually means with the observation of speed of light?** Let us consider a water well, a daily life example to understand this. Assume the well is constructed with symmetry that looks like a cylinder as shown in the following picture,



But in our day-to-day life, when a measurement is made from top to bottom it is called depth and vice versa is called as height. This way of consideration did not affect studies in local reality. However, this perspective has importance in space-time studies. Depth in reality could not be measured. Now, let us project the top and bottom circles of the well in the same way it appears and thus modify the side view.

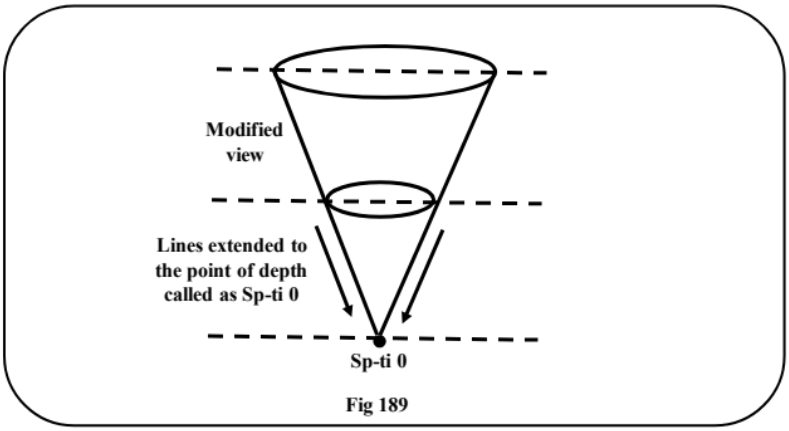


Fig 189

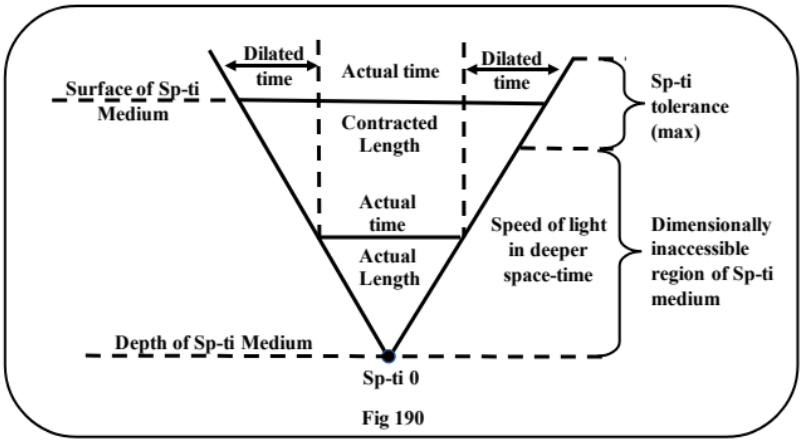


Fig 190

Now, how the speed is not a factor affecting time dilation to be analyzed. The speed of light is something natural and its energy source is a constant emitting source rather an accelerating one. Also, it is happening at certain deep quantum range of sp-ti medium which is only observable from surface along with the depth indication called **'time dilation'**.

Thus, the results are obtained with difference between estimated and actual values of time or length, as a comparative study. With all the other energy sources used for accelerating the speed of objects in daily life, these variations in space-time are insignificant, as they are adjusted within the Sp-ti tolerance for their free motion, to be noted. (Ref: Published articles for detailed explanations and drawings)

So, speed of light just enables us to observe something happening at the depth of space-time. Means, even though we handle or do experiments with light in our lives, it is only at the surface level. Behavior of quantum objects is just an appearance in the foreground of life whereas it actually involves fourth dimensional aspects at its background which is their fundamental nature.

We have shown the line of gravitation passing through the axis of all the objects. Means, time dilation observed must be due to ridges and troughs caused in Sp-ti tolerance bitten by heavy objects.

4. Final Representation

Two different cases of time dilation in space-time are summarized as follows,

1) Sp-ti tolerance (Time dilation – 1)

- Gravitation is not affecting time in any way, only the objects (two clocks at different locations) whose positions along the ups and downs caused in sp-ti tolerance by heavy objects, actually indicates the difference in crest or trough levels between them accordingly. Means, overall surface

of Sp-ti is not flat, same like surface of earth which we see is an uneven land area with ups & downs, mountains & valleys.

- The surface and depth levels in this case, is similar to accessing the water well that we shall reach to its bottom (depth) level, physically.

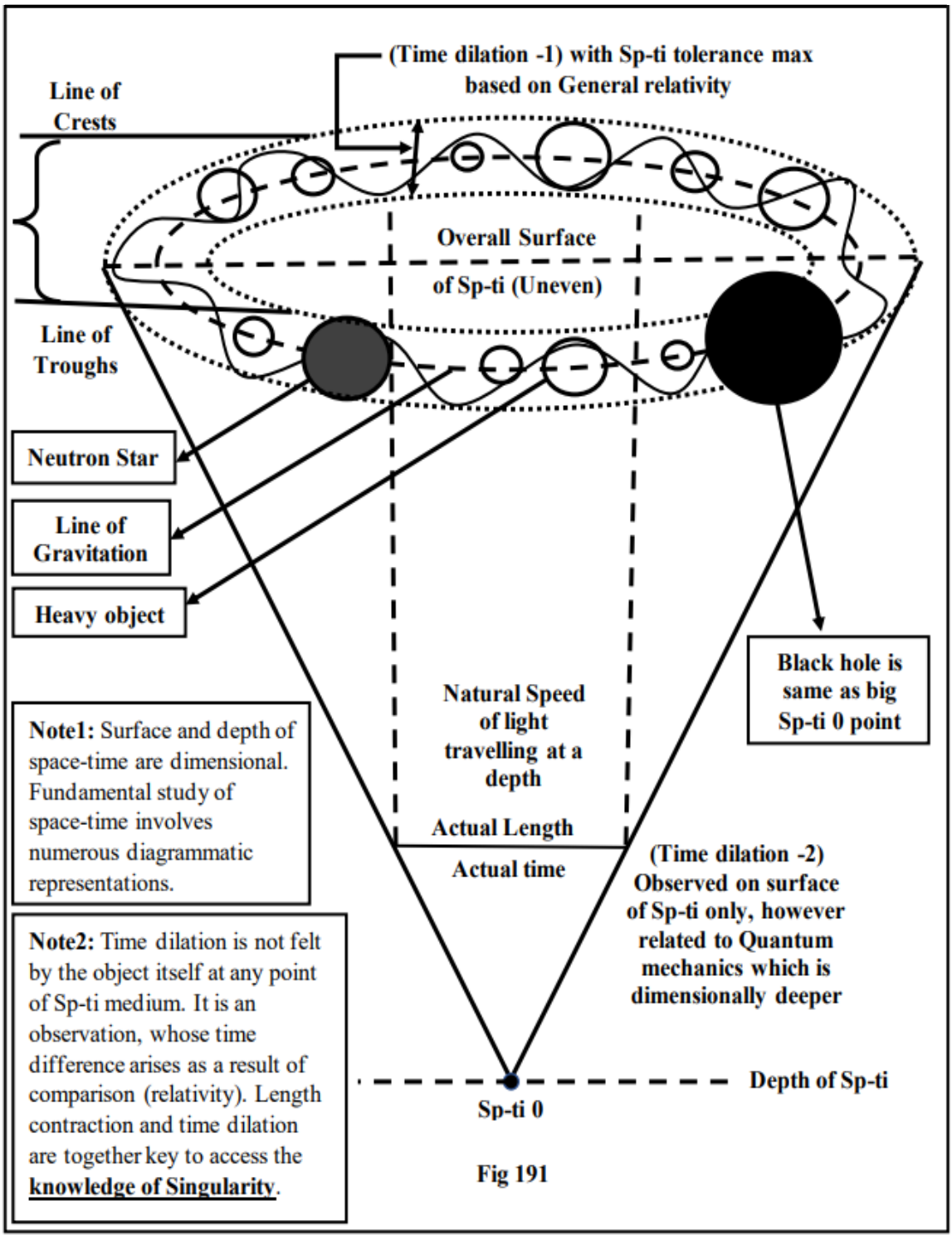


Fig 191

2) <u>Speed of light (Time dilation-2)</u>

- Speed of light is not a factor affecting time but in fact, it enables us for the observation of time dilation at the surface of space-time with a clock. In this case, it indicates the depth of sp-ti medium itself (dimensionally inaccessible depth pertaining to quantum mechanics). This depth could be compared with core of the earth which is deeper from its land surface. The Sp-ti 0 in every object at its center has an attraction towards another deeper Sp-ti 0 point in existence based on which Gravitation-Orbitation duality works.

5. General Discussion

Points to remember

- As discussed earlier the "theory of relativity" is based on a duality that, it requires two objects for comparison. It could not serve the fundamental for everything as even to describe the gravitation, it equates curvature in space-time fabric and the matter causing this curvature, which is an inseparable duality.
- The theory works as long as the two considered objects are related to each other. For example, time is said to be relative however, what is the time for a single object in existence could not be explained, as it refers to absolute time.
- When it comes to the consciousness of the observer, the time is said to be absolute. It begins and ends as "moment to moment" in terms of **Sp-ti frames**.
- Theory of relativity could be thought with an example. Consider two fruits that need a plate to carry them, now the theory is based on the fact that the two considered fruits are related to each other. Means, the plate basically needs support of these two fruits to be kept under it. Thus, the inverted plate (space-time fabric) is modified with new representation and the gravitation is released from general relativity to reach or connect to quantum mechanics.
- Physicists and scientists are looking for one equation that would be fundamental for everything. But the truth is, it is not an equation but only dimensions could accommodate or contain everything in it. The Einstein's field equation has actually equated a duality on either side that blocks the way to Singularity (the ultimate and simplest form of nature).
- One may wonder that singular perspective is an unobserved one, which literally means if there is nobody to observe the Universe, then presence of the existence itself is nothing. Then what is the use of all these studies? The answer is singular perspective could be applied to some extent that, it could hold very minute details and techniques for our knowledge about space-time, that are almost about to collapse into nothing.

6. Conclusion

The two kinds of time dilation, one due to **speed of light** and the other one due to **sp-ti tolerance** are discussed in this paper. Sir Einstein's general relativity is said to have failed to explain the fundamentals of quantum mechanics. He himself exclaimed regarding the communication between two entangled particles separated by large distances to be **"spooky action at a distance"**. But the truth is, he is the one who actually discovered the time dilation pertaining to quantum mechanics whereas time dilation discovered by modern science with two synchronized clocks, one in satellite and the other on earth, observed over a period of time, resulting in a time difference is only at the surface level of space-time, based on relativity. It is clearly distinguished and shown with the diagrammatic representation (Fig 191). The problem of incompatibility between these two studies is due to the fact that the true findings such as length contraction and time dilation are not completely analyzed. And time dilation is wrongly assumed for moving back and forth in time physically and so hooked up with the **concept of time travel**. Our research work solves all these fictions & mysteries with detailed drawings and clears the path towards singularity.

References

[1] Self-reference_1: Length contraction and time dilation with real dimensions of space-time. Volume-9, Issue-8, 2022. (International journal of advanced research in physical science (IJARPS) – www.arcjournals.org).

[2] Self-reference_2: Length contraction and time dilation are experimental but non-physical variations in space-time. Volume-9, Issue-8, 2022. (IJARPS – www.arcjournals.org).

[3] Self-reference_3: General relativity Vs Quantum mechanics; Incompatibility solved with real dimensions of space-time. Volume 9, Issue-9, 2022. (IJARPS – www.arcjournals.org).

[4] Self-reference_4: Particle physics based on real dimensions of space-time. Volume 9, Issue 10, 2022. (IJARPS – www.arcjournals.org).

[5] Self-reference_5: Fundamental study of space-time – (Zero, One and Infinity). Volume 10, Issue 01, 2023. (IJARPS – www.arcjournals.org).

[6] Self-reference_6: Fourth dimension of space-time – Study of gravitation; part-1. Volume 10, Issue 01, 2023. (IJARPS – www.arcjournals.org).

[7] Self-reference_7: Fourth dimension of space-time – Study of gravitation; part-2. Volume 10, Issue 02, 2023. (IJARPS – www.arcjournals.org).

[8] Self-reference_8: Fundamental Theory of Singularity. Volume 10, Issue 03, 2023. (IJARPS – www.arcjournals.org).

[9] Self-reference_9: New Study of Gravitation in Singularity. Volume 10, Issue 04, 2023. (IJARPS – www.arcjournals.org).

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Prabhakaran Natesan, Tamil Nadu, India. [prabhakar3112@gmail.com] Bachelor's degree in Electrical and Electronics Engineering (2011) – Affiliated to Anna University, Chennai. General relativity and Quantum mechanics are followed to be two fundamentals of nature, contradicting each other. **"New study of gravitation and fundamental theory of singularity"** published recently - year 2023, serves a single frame work that accommodates the above said, two major branches of physics. The series of papers 9 nos. on **"Theory of singularity" (unformulated)** are published as it is originally worked, to be useful for everybody's reference. Upcoming works including this journal shall contain formulated theory with more details and technical drawings, for easy understanding to serve educational purposes.

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