Some philosophical point of view around special and general theory of relativity and a solution on nature of gravity and time

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Abstract

In this paper, I showed how the circular definition in special relativity and unknowable question in general relativity, become clear with the new definition of time. In the end, I found out the creation of everything out of space and motion.

I. Introduction

In the special and general theory of relativity, some problems epistemologically are not acceptable [1, 2]. The theory of special and general relativity is based on some experimental situations that are not clear. For example, special relativity is based on the speed of light constancy. It claims that this is the highest speed that can be achieved, but it does not demonstrate why this is the limit. By assuming the constancy of the speed of light and using Lorentz transformations, we can deduce that time is variable, meaning that time in different inertial frames moving relative to each other has a different quantity. Since time is variable, one can conclude that the speed of light is constant, and if asked why time is variable, he would respond that it is because the speed of light is constant. It is a circular definition. It lacks a solid foundation for interpreting both of them in physical terms and also in general relativity based on the equivalence of gravity and inertial masses. It finds that space around mass curves, but the mechanism behind this is unclear. So, from a theoretical standpoint, one argues that there must be some inexplicable reasons behind them that humanity cannot comprehend.

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II. A new definition of time and how it's related to gravity

In this paper, for resolving the problems mentioned above, we, first of all, define the process of time. Time is not a dimension. Time is the changeability and convertibility of all objects and things in the effect of interaction . According to this hypothesis, if there was just one object or thing in the universe, there would be no time passing since there would be no interaction between it and the rest of the cosmos. That is to say, if the cosmos were made up of only one object with no diversity and was homogeneous in all directions, and if the world were made up of only one particle, it would remain the same for forever with no time passing on it:

1) There should be changeability and convertibility in order to make things and objects sense the time,

2) For changing being a part of any object and thing, in other words, the process of time governing the things, there should be other objects and phenomena in the world to interact with each other and bring about the time in reality.

By this definition of time in full compliance with reality, I start with my hypothesis and try to see the change of time in different inertial frames and a gravitational field. Except for all the material body which spread all over the universe in the form of stars, galaxy, atomic particles, subatomic particles, different rays like light, electromagnetic waves and as a general everything appearing as a material body, space itself is not continuous and consist of particle which I called them space particle. Space particles are primary, and all other material bodies are secondary. They are all created from space particles that means they all have come into existence from space particles, or they all are a combination of space particles. Since all objects in the universe develop from space, space and masses are interacted according to the following procedure: We know that the total energy of a body is

$$E^2 = E_0^2 + p^2c^2 => E = \sqrt{E_0^2} + p^2c^2. \tag{1}$$

So every material body in space has a mass of $E = +m_0\ c^2$ while is at rest in its frame of reference and also its space around it has an energy of $E = -m_0\ c^2$. Between these two energies, the graviton is passing on. Graviton is emitted from masses by energy $E = +m_0c^2$, and as it passes through space, it collides with space particles, which gives them enough energy to travel from space near the mass to space far away from the mass on a different level of energy, causing space near the mass to become depleted

of space particles, causing space near the mass to contract and become nonlinear. In this hypothesis, mass and space around it, look like atomic nucleus and electron around it. When by impacting graviton, which is emitted out of masses consisting of energy $E = +m_0\ c^2$ on space particle, by imparting the energy to the space particle they move to higher shell but there is some different matter between the analogy of atomic model and space around the mass. Here when the space particle moves to a higher shell, it should be confined in its place with higher rest mass-energy, and it does not orbit or move around, and in returning to the lower shell when mass moves away from its original place, it emits one particle of graviton which is attracted by mass again. It should be noted here that volume per particle of space near masses become smaller than before, and as we go far away, volume with the higher number of particle spreads out and become bigger and stretches more, but the density of particle per volume does not change. Suppose we apply this hypothesis to a star with a mass greater than a critical mass. In that case, the following phenomenon will occur: graviton aggregation will impact on space particles inside the star, causing the space inside the star to contract, causing the mass of the star to accelerate toward the contracted space, which should be more stable due to the low energy level, and this process will continue until all space particles are depleted. Both space and time shrunk and became nonlinear as a result of this process, since not only space around the star but also space particles emptied of material, resulting in no interaction and, according to our definition, time slowed and changed its duration. If we are interested to show it by formula it will be like $\Delta T = \Delta L\ V$

$$\begin{aligned} \Delta T &= duration\ of\ time, \\ \Delta L &= changing\ length\ of\ space\ by\ depletion\ of\ space\ particle, \\ V &= rate\ of\ change\ of\ interaction\ of\ particle\ on\ each\ other. \end{aligned} \tag{2}$$

So when space around the mass is depleted and become contracted V, the rate of change of interaction of particle on each other decelerate faster than ΔL so that in the limit when there is one space particle left ΔT the duration of time become very big and as a result time will be stopped. As a result, this is the essence and nature of gravity, as mentioned above. In special relativity, we know that, relative mass in different inertial frames is $m = \frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}}$ So, at the light speed limit, m becomes very large, and the space is depleted of particles due to the process described above, so there is no interaction, and the time comes to a halt. Now we apply this hypothesis to cosmology. The process is the same as when we

described a star with a mass greater than critical mass turning into a black hole with a singularity point at the end, implying only one space particle remaining. The dimension of this particle is Planck length that is $L = \sqrt{\frac{\hbar G}{c^3}} = 1.6 \cdot 10^{-33} cm$. The cosmos comes into being precisely from this particle and the rest of space, and after that, under material motion, h, G, and c are generated, which together comprise a dimension of space particle.

III. Conclusion

At the beginning of time, there was only space in the shape of four cones, each with one space particle at its vertex, and the remainder of space was filled with space particles of various amounts of negative energy. Because these particles are unstable at different energy levels and are attempting to become more stable at a lower energy level, and because there will be infinite energy at the vertex according to the uncertainty relation. With masses and positive energy, the entire cosmos will be infinity generated. In a cyclotron, a space particle can be identified by achieving the energy of $E = m_c c^2$, where m_c is the critical star mass. It must be discovered the mathematical relationship between how space particles construct the remainder of the particles in a positive energy condition.

References

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