Review of: "The quantum origins of gravity"

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In this article, the respected author, Dr. Robinson, has given a detailed description of the developments of Newton's and Einstein's theories of gravity and the strengths and weaknesses of each of them. At the end, he concludes that it is the changes in electrical conductivity that lead to the production of gravity. In this regard, the problem he encounters with Newton's theory of gravity is that in this model, no origin for gravity is introduced. Also, Newton's inverse square gravity law cannot explain the orbit of planets like Mercury—why does its zenith move? It has also been stated that Newton's theory of gravity is based on the shell hypothesis, which means that all the mass of an object can be imagined as a geometric point in the center of a shell. Although it has been emphasized that Einstein's theory of general relativity solves the problem of Mercury's orbit and shows that Mercury's orbit does not follow the inverse square law of gravity, and by calculating the movement of photons in the gravitational field, he can predict the phenomena of light beam deflection and the production of gravitational waves and the red-shift of light waves, unfortunately, general relativity, like Newton's theory of gravity, cannot predict the physical properties of space and time that are bent by mass. About the problems faced by the theories of quantum gravity that exist in the scientific literature, the author also raises by providing suitable references that they have not reached anywhere and remain at the level of mathematical models. Dr. Robinson, based on Maxwell's research, which showed that the speed of light depends on the electric and magnetic permeability constants of the medium, and the prediction of Huygens that the diffraction of light in a material environment leads to a change in the speed of light, i.e., it depends on the value of the refractive index of that medium, has tried to quantify the red-shift of light waves that the predictions of the theory relate Newton's and Einstein's gravity to the electric permittivity constant. In this regard, he used the gravitational model of Williamson and Van der Mark, in which material particles such as electrons are assumed to be introduced by electromagnetic waves or circular moving light, so that the circular moving light that is responsible for introducing the particles rotates twice in each wavelength, that is, the speed of circular light is twice that of moving light. This model is very similar to the string theory and loop quantum gravity developed by researchers. The main difference between the theory introduced in this article and Einstein's idea of general relativity is that in the general relativity model, the change in electrical conductivity causes the photon to redshift because it leads to the distortion of space-time. Although it is the material mass that leads to the distortion of space and time, in other words, in general relativity, it is not claimed at all that the change in electrical conductivity of space directly produces gravity. In this article, it has been tried to explain with strong arguments that gravity is photon deflection and electric permittivity is space-time distortion. This attitude is the opposite of general relativity's prediction. Furthermore, it is shown that the Newton and Einstein gravity models cannot predict real black hole structures because of the weakness of gravity, but in this model, which is based on the photon perspective of the particles, they can. It reminds me of the Hawking radiation of a quantum

black hole. In other words, a physical black hole is not an absolutely geometric object predicated by general relativity but is a quantum black hole, i.e., a massive stellar object with high density which is interacting with quantum particles, so that its horizon is not hairless. With this regard, recently, boson stars with no horizons, as candidates for central objects of galaxies, have become the axis of research instead of the black holes with a horizon.

In general, I think the article is very strong and expertly written. The reviews of other people's work are well and accurately measured. As we know, every physical model that is introduced to the world to explain natural phenomena must follow three main axes, as follows, which this article has tried to follow:

A) Explaining phenomena that previous theories were unable to explain

B) Following Bohr's correspondence principle means that in the weak approximation it leads to the old accepted theory

C) Having predictions for the future that can be experimentally tested to establish the validity of the new theory.

In order to develop and strengthen the article, I suggest revising the title of the article so that it matches the text of the article ("Electromagnetic Fields with No Quantization Rules") more closely. Also, regarding (B) and (C) in the above, more examples should be added to the article.

Sincerely yours,

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