

Commentary on Waves Especially Gravitational Waves and General Relativity

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Abstract Gravitational waves were observed for the first time by the LIGO detectors and have won 2017 Nobel Prize in physics. This is a commentary on waves in general and gravitational waves and general relativity theory of gravity in specific. The form of matter has wave-particle duality. However, I show that the form of wave is the form of energy and in the state of gravitational waves and gravity is that instead, it has magnetic field or magnetic force.

Keywords Waves, Gravitational Waves, General Relativity, Wave-particle duality

The concept of matter waves, carried out by De Broglie [1]. In addition, because of wave-particle duality it is believed that sound waves and all the waves consisting of particles like the photon and the electron [2]. It is also believed that sound waves are another type of photon.

However, it is believed that maybe the form of wave is the form of energy because the wave's definition in classical mechanics and quantum mechanics is not well defined [2].

In Einstein's formulation, gravity is the manifestation of the curvature of spacetime [3]. On 14 September 2015, the universe's gravitational waves were observed for the very first time came from a collision between two black holes [4]. The LIGO detectors have observed gravitational waves from the merger of two stellar-mass black holes [5]. After Einstein published the general theory of relativity, one of its predictions was verified by direct detection: the production of gravitational waves in spacetime by accelerating objects. Since then, gravitational-wave astronomy has enabled tests of the nature of gravity [6].

Scientists worked on a variety of topics, such as the quest for a unified field theory of gravitation and electromagnetism [7].

However, there is not gravity or gravitational waves because what we can understand from the word "gravity" is the attraction of objects to make them next to each other, but in fact the solar system does not have attraction between objects, it has orbits in a well-defined model of the solar system.

Instead of the expression of gravity, we can use words of magnetic field or magnetic force in the solar system or between objects in space that generates the controlling motion of any object in a system. The magnetic field is forming the model or the structure of the solar system.

It is like electromagnetism and outlining of iron powder in effect of a magnetic field or magnetic force [8]. The magnetic field of the sun is making the outlining structure of the solar system.

It is believed that all waves may have particles and the form of wave should be left without consideration. It is also believed that we must take into consideration the form of energy instead of form of wave for materials.

Gravitational waves consisting of particles that it is known as graviton [3]. The state of gravitational waves have graviton in quantum gravity is not considered when we acknowledge the form of energy or the magnetic force.

The form of wave whereas disturbance travelling through a medium maybe is disturbance in the medium itself that not making a correct conclusion conducted for the experiment. The expression of wave is not convenient and is not convincing for the new age of science.

The thing of making us held to the earth and making things fall to the earth is also because of the magnetic field and magnetic force of the earth and not because of space-time curvature of general relativity in my point of view.

The reason why I am saying that is because when the arrows of electric field lines come from the south pole of the earth (figure 2) pushed to the upper side of a body on the earth to meet with north pole (the surface of earth) making it held or attached to earth in a well-defined pattern and not in an arbitrarily pattern (figure 2).

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Figure 1. Gravitational waves [4]

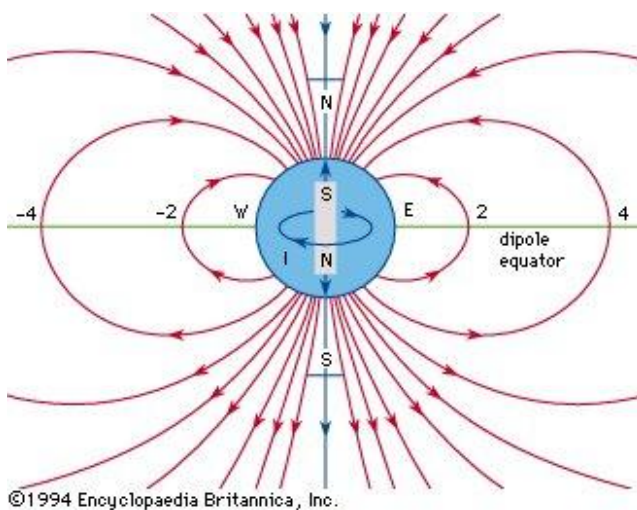


Figure 2. Magnetic field lines of earth [9]

If there is gravity for the Newtonian gravity, the body collisions with the earth in arbitrarily movement or randomly and also not in a well-defined pattern which it does not happen. Also, space-time curvature for general relativity making things fall to earth is not a convincing theory.

The reason why all bodies fall in the same speed to the earth is also because of the magnetic force of the earth. If there is gravity, they fall with different speeds because of different masses in the gravity equations.

In addition, general relativity is not convincing theory because there is not gravity in my point of view.

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