Gravitational wave theory

Timo Huovinen

t_huovinen@hotmail.com

University of Eastern Finland, Kuopio

18.3.2015

The abstract

Gravitational wave theory contradicts how we understand gravity, and how it affects on matter. Basis of my theory is, that Isaac Newton misunderstood vacuum, and because of this, his theory on gravity is incorrect. Because of this mistake, science got divided (over centuries) into different branches; physics, chemistry, cosmology and so on.

Gravitational wave theory explains how gravity works, and by doing so, it combines these different fields back together. According this theory, all matter has same basic principles, whether you look at it at atomic or cosmic level.

According gravitational wave theory, gravity is caused by gravitational waves that occur between two same substances rotating around each other. This generates gravitational waves, which pulls same substance towards itself (because it matches the same wavelength as the gravitational waves). So every element has its own gravity. Bigger the atom of given substance is, the bigger the wavelength. Gravitational waves frequency is determined by how much (and how fast) there is substance in question spinning around each other. Force of gravity depends on the distance between source of gravitational waves and the substance that is affecting.

In this text I explain this theory in physics point of view, as doing so it explains other fields of science as well, such as chemistry, cosmology, geology and meteorology. Of course, to this theory to be correct, it must hold true in every different field of science concerning physical interactions, but I start with physics, so the basic principle is clear.

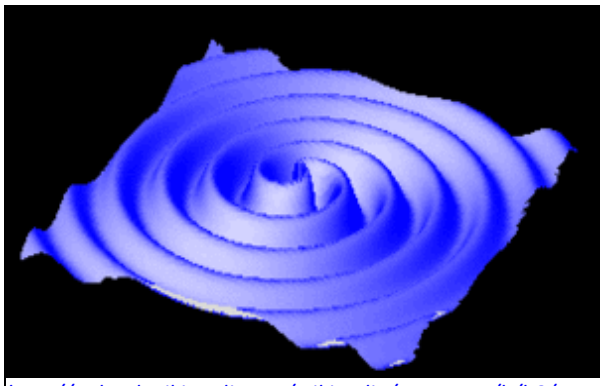
Gravitational wave theory

I'll start by describing the thought process that led to this theory, to make it easier to approach by reader. I have always been interested by science, as a whole, and that's how I have been studying it. I think, to understand the universe, whole picture is needed. I have studied the basics of many different science fields, and what i have found out, there is a lot more in common in these fields, than there are differences. So, as i have studied science, I have been ”constructing” universe in my mind, as it has been taught to us. By doing so, you come to an conclusion, that different set of rules are in affect in different size scales (from atomic level to cosmic level). This has been troubling many scientist, like Albert Einstein, and numerous scientist have been working to reveal ”theory of everything”, which would combine everything in single theory. Gravitational wave theory is doing just that.

In school, I have studied basics in physics, but my journey to this theory started when I started to study physics more on my own, particularly quantum mechanics (I was interested how quantum computer would work). Quantum mechanics provides description of dual *particle-like* and *wave-like* behavior and interactions of energy and matter. Conclusion I came, was that there are waves (later i understood them as gravitational waves), on which particles like photons travel. This explained double-slit experiment.

After this, I wanted to learn about origins of such ”waves”, so I went backwards in scientific study, and I studied general relativity theory by Albert Einstein. I tried to understand movement of light

(photons), as Einstein understood it, keeping in mind what I had learned about their *wave-particle* nature from quantum mechanics. In this point I had already read about gravitational waves (predicted by Einstein), and I thought to try how would it make photons act, if star (like sun) emitted these waves. It explained deflection of starlight by the sun (observation made during the total solar eclipse of May 29, 1919). Next problem was, how these gravitational waves came to be? It was then, when I remembered this picture, which describes how two neutron stars rotate rapidly around one another gradually losing energy by emitting gravitational radiation. I pictured how universe would look like, if gravity worked like this. Keeping in mind Newton's theory about gravity (force of gravity depends on mass and the distance of the objects), this would have made all the matter in the universe collapse into a single object. Then I thought, what if every particle had their own gravity, and this was the mechanism how it was created. This is when pieces started to fall into their places. There was a problem though: This went against Newton's theory about gravity.



http://upload.wikimedia.org/wikipedia/commons/b/b8/Wavy.gif

After this I compared this gravitational wave theory against Newton's theory of gravity, and I understood where Newton had made his mistake:

In the vacuum solid object doesn't move (assuming gravitational waves don't rip the object apart), but everything else moves around it, depending on how hard elements are being pulled by the planets and the stars. It seems like entropy, because the gravitational forces in the universe are so strong that the substance is pulled in every direction. So there are so much gravitational waves in the vacuum that it seems like elements are being pulled to random directions. If you "drop" two different objects in vacuum on surface of the Earth, those objects stay still, but Earth keeps moving (according it's rotation speed). This is where Newton's 9,81 m/s^2 comes from, which have been understood as force of gravity (here on Earth).

According gravitational wave theory, gravity is caused by gravitational waves that occur between two same substances rotating around each other. This generates gravitational waves, which pulls same substance towards itself (because it matches the same wavelength as the gravitational waves). So every element has its own gravity. Bigger the atom of given substance is, the bigger the wavelength. Gravitational waves frequency is determined by how much (and how fast) there is substance in question spinning around each other. Force of gravity depends on the distance between source of gravitational waves and the substance that is affecting.

In next chapters I compare my theory with current theories, and of course observations made by scientist in different fields (as I encourage readers to do). As I said in introduction, to this theory to be correct, it must hold true in every physical interaction.

How to test gravitational wave theory experimentally

I think that easiest way to test this theory experimentally is to test it with an centrifuge strong enough (strong enough to create gravitational waves). Experiment is simple. You spin any given pure chemical substance in the centrifuge, and observe, does it pull same substance towards centrifuge on the outside of the centrifuge. If this is the case, it proves gravitational wave theory to be correct, and using same principle, we can determine how much substance in question is needed, and how fast spinning speed is required to create gravitational waves. We should also test, how using molecules affects the results.

Mathematical approach to gravitational wave theory

As I understand it, there are three factors that needs to be accounted for creating mathematical formula for this theory: amount of the given substance, rotation speed of the given substance, and the distance between source of gravitational waves and the substance that is affected by these gravitational waves. For determining ratios for these factors, experimental phase (explained in previous chapter) is needed. After we have measured these factors, we can produce mathematical formula for this theory, and we can use it to determine substance composition of Earth's core (for example).

Physics

In this chapter I explain principles of physics according gravitational wave theory.

Fundamental forces

Fundamental interactions, also known as fundamental forces or interactive forces, are the interactions in physical systems that science haven't been able to be reduce to more basic interactions. In following paragraphs I explain these forces according gravitational wave theory.

Strong nuclear force

According mainstream science, the strong nuclear force (also known as strong interaction) is the force that binds protons and neutrons (nucleons) together to form the nucleus of an atom. According gravitational wave theory, this interaction happens because of gravity, protons and neutrons spin around each other, creating gravitational waves, which pulls electrons and other atoms towards the center of the atom (according the strength of the gravitational pull). If gravitational wave theory is proven to be correct, I think we need to re-evaluate the nature of these subatomic particles (protons, neutrons, electrons and photons).

Weak nuclear force

According mainstream science, the weak interaction is responsible for both the radioactive decay of subatomic particles and nuclear fission.

According gravitational wave theory, each chemical substance has different gravity, because each substance has its own wavelength (force depends on gravitational sources for any given substance). When it comes to radioactive substances, their half-time (quantity of atoms falls to half its value) depends on the gravitational forces affecting given substance. Stronger the gravitational pull is, faster the radioactive substance decays.

Gravitational force

Newton's law of universal gravitation, which postulates that the gravitational force of two bodies of mass is directly proportional to the product of their masses and inversely proportional to the square of the distance between them. This theory works well when used in Earth's surface, but when used in atomic or cosmic scale, it starts to fail. In cosmic scale this theory needs hypothetical dark matter to work (which existence haven't been proved). I think the biggest problem, and why gravity was so long misunderstood, was the lack of understanding the nature of the vacuum in space. Principle of gravitation by gravitational wave theory is explained in previous chapters, so in this paragraph I concentrate explaining vacuum according my theory.

According gravitational wave theory, if gravitational waves doesn't affect to object, let's say asteroid, then it doesn't move in vacuum. Stars and planets keep on spinning according their orbits, but asteroid need to wait, that something comes and moves it. When, let's say Earth's orbit intersects with the location of the asteroid, two things can happen: If asteroid doesn't have same elements as earth, they will collide. If there is same elements, then according Earth's gravity (gravitational waves of different elements in question) to asteroid, asteroid can stay in Earth's orbit

(Distance depends how much asteroid is pulled by earth, and how much by other stars and planets).

Electromagnetic force

According mainstream science, electromagnetic force is a type of physical interaction that occurs between electrically charged particles. The electromagnetic force usually manifests as electromagnetic fields, such as electric fields, magnetic fields and light.

According gravitational wave theory, principle of electromagnetism is the same as other gravity, but in this instance we concentrate on electrons. As explained in strong nuclear force-paragraph, electrons are orbiting atom's core according gravitational pull of the atom. When it comes to substances, like iron, which have "room" on the outer orbit of the atom, gravitational pull of that atom "attracts" electrons to the orbit of the atom (magnetism). After the atom's orbits comes saturated with electrons, atom starts to repel excess electrons.

Conclusions

Like said in introduction, if gravitational wave theory is correct, it will merges different scientific fields (concerning physical interactions) to one. First logical step would be the experimental phase

(with centrifuge-test described before, or otherwise). If those experiments give results predicted by this theory, we need to start re-evaluating science as we know it.