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The Fabric of Space Affects Everything

Einstein brought together the ideas of space and time with General Relativity and the warping of space-time in the early 1900s. The thought that light traveled through a medium, or luminiferous ether, began much earlier in the late 1800s. The Michelson-Morley experiment in 1887 attempted to show that light travels slower or faster in space depending on the direction of the light, relative to the direction of travel. The experiment showed no change and Einstein later proved that the speed of light is constant (in a vacuum) in every direction no matter the speed or direction of the source. Einstein also described the warping of space-time as an infinite fabric, like an outstretched blanket, which is now commonly referred to as the fabric of space-time. This invisible fabric of space may have properties that can be measured, but first the properties must be defined and explained.

Fabric of Space – Starting Small

Consider the empty fabric of space as empty foam bubbles. The boarders of the individual tiny bubbles represent the shell-like structure Neils Bohr used to describe the atom. The empty foam bubbles would be on an atomic scale, where the empty space would be empty bubbles and elements would be bubbles with protons, neutrons, and electrons within the confines of the individual bubble. The individual bubble skins would be two of the four fundamental forces, the strong force and the weak force, and gravitational force would be the result of mass displacing or warping the fabric of space. Gravitational waves would simply be a ripple effect of the fabric of space on a massive scale.

Fabric of Space – Size Matters

The size of the individual bubbles would be determined by the force of the surrounding bubbles. A bubble near a black hole would be considerably smaller than a bubble near the edge of the known universe. If we assume the individual bubbles are themselves massless and the bubble shell force is the force containing atoms and nothing can occupy the same space at the same time, then the displacement of surrounding bubbles or the surrounding fabric of space would be the force of gravity. In this scenario, occupied bubbles containing mass displace surrounding empty bubbles. The greater the mass, the greater the force of the local fabric of space pushes back against the displacement, causing the force of gravity. The surrounding empty fabric of space would be much like a denser foam or smaller bubble, warping or displacing of the fabric of space as the result. This displacement also changes the path of light as it travels through the smaller or denser fabric of space, as when traveling close to large masses like the sun or black holes. This effect of the bending of light or lensing was proven in 1919 by a solar eclipse, which confirmed Einstein's Theory of Relativity and observed in recent images of a black hole.

This foam bubble fabric of space theory would also explain why the quantum world plays by a different set of rules. If the Strong Force is the force containing atoms within a bubble and all the empty bubbles are what make up the fabric of space, then the quantum world lives in a bubble that is not directly affected by the force of gravity. The force of gravity caused by the pushback of displaced fabric of space

bubbles would not penetrate the shells of the occupied bubbles, eliminating any force of gravity upon the inner workings of any atom.

Fabric of Space – Speed of Time

Einstein predicted that the speed of light in a vacuum would travel at the same speed regardless of the speed or direction of the light source. He continued to deduce that if the speed of light is constant, then the perception of time from an observer would be different than a traveler traveling near the speed of light. This time dilation also applies to the measurement of time at different altitudes and direction of flight, as this has been tested and proven with atomic clocks. In 1971, the Hafele and Keating Experiment tested and concluded Einstein's predictions of time dilation using four cesium atomic beam clocks flying around the world.

Although the test used moving clocks instead of light particles in Einstein's prediction, it may also show that cesium atoms are affected by different environments of the fabric of space. The experiment may also show that a cesium atom acts differently at rest on the surface of the earth than it does miles above the surface traveling with the rotation of the earth and differently in the opposite direction of the rotation of the earth. A different conclusion with the same result.

The Hafele and Keating Experiment's measurement of time may be influenced by the density of the fabric of space, or what we call gravity. In other words, the clocks may need to be calibrated for the effects of gravity, making time the constant not the speed of light.

Fabric of Space – Speed of Light

If the warping of the fabric of space is the result of large masses pushing back or displacing the fabric of space, then the displaced fabric of space would be compressed, making the size of the fabric of space bubbles smaller. The reverse effect would also be true for the fabric of space bubble size for space far from any mass. This may be described as the expansion of the universe. If in fact gravity is the force of the fabric of space pushing back on the mass that is displacing the fabric of space, then all of space is being pushed out in every direction from every moon, planet, star, black hole, and the galaxies themselves. This compression or expansion of the fabric of space would also affect the speed at which light travels through the fabric of space, once again making time the constant, not the speed of light.

If light travels at a constant speed of 299,792,458 meters per second, but a meter is measured as the distance light travels in one second, then the true distance or speed that light travels would need some sort of calibration for the effects of gravity. Two extreme examples would be in deep space, where gravity is very small and a black hole, where gravity is immense. If the fabric of space bubbles is larger in deep space, then the light particles may be able to travel with less restriction and therefore faster. Conversely, the speed of light may be reduced to near zero near a black hole, as the warping or displacing of the fabric of space becomes extremely restrictive. This would also explain Steven Hawking's 1974 prediction that black holes died by evaporation. The immense displacement of the fabric of space surrounding a black hole would not be able to push back on everything 100%. Even the slightest penetration of the event horizon would result in evaporation once the fuel has extinguished.

Fabric of Space – Metrics

Measuring something that cannot be seen, heard, or felt can be extremely difficult, but the effects of other objects and light waves in and around the fabric of space may make it possible to define and measure its properties.

Einstein's theories mathematically prove the warping of space-time. For something to be warped it must be changed from one shape to another. The image of the earth warping the fabric of space like a ball over warped graph lines is simply inaccurate as it implies a source of gravity exists at the bottom of space. If we consider the fabric of space is made up of small bubbles, then the size of the bubble would be a place to start the measurement of the fabric of space. On the surface of the earth the fabric of space bubble may be smaller, making the properties of the fabric of space on the surface of the earth denser. One of the problems with measuring the size of the fabric of space is the definition of the unit of measure. One meter is defined as the distance traveled by light in one second. The speed of light is defined in terms of meters per second. This practice of measurement may make things consistent on the surface of the earth but may create inconsistencies everywhere else.

If the size or density of the fabric of space is altered by large masses in any way, then the change would be the calibration standard for everything, including the speed of light.