

Equivalence Theory Revision leads to Antigravity

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In Waser's equation^[1], which he has derived from the Maxwell equations, he shows a connection with SOL and gravity. The equation appears simply as the total force = force of gravity + electrostatic force. Inside this simple relation unification between electromagnetism and gravity is waiting to unfold. Waser is correct in his analysis that gravity and the variable speed of light are connected, this follows directly from the equations.

We also know from Einstein that light is bent by spacetime curvature in the equivalence principle since mass warps spacetime. It must follow that anything that deforms spacetime or in more recent view, the "the electromagnetic zero-point field vacuum energy", must also affect the propagation of light. So we see a fundamental relationship that when vacuum energy is altered, so to gravity and light must be affected. Or conversely, if light propagation is curved, so also, spacetime and gravity must change.

In the early 1900, when Einstein first sought to explain how the universe operates, he avoided a hypothetical aether to explain things. With no aether cited, he simply proposed that the presence of matter and energy curves spacetime and this warping of spacetime then tells matter and energy how to move. Since spacetime is something, then it has physical properties and in this sense it was a aether. Just not the aether that was depopularized by the Michelson-Morley experiments. Einstein description of spacetime, in simple terms is a model of space and time conceived in a way, that would be consistent with the observed constancy of the speed of light. Spacetime effects must operate in accordance with other laws of nature and so spacetime could be described from its effects.

In recent times we have learned a great deal more about this universe. We now know that vacuum energy exists, and it can produce identical effects as the spacetime description gives. So spacetime, which has physical properties, is really just the vacuum sea of energy that produces real effects while it remains cloaked from view. The frequency-cubed spectrum of the ZPF renders it Lorentz invariant. Therefore it is nothing like the 19th century aether concept. It is not like a flowing river so the MM experiment could not have detected it. It must be in agreement with relativity when a solution exists. This speaks very highly of relativity's power to describe the laws of nature. In typical Einstein fashion, a thought experiment was made to show how a constant accelerating inertial mass and

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gravitational mass were related. The elevator experiment demonstrated that equivalence existed between the two. The problem was however, that vacuum energy, and its direct effects on accelerated charges was then unknown. This unknown fact has lead the world in the right direction, except on the wrong road. Einstein sought the remainder of his life trying to unify the forces that shape our world into a single unified field theory, and was unsuccessful. We can see where the paths crossed, and it was embodied in that elevator thought experiment.

It has made a revolutionary prediction, massive bodies bend light, or in relativity jargon, spacetime is distorted and light follows the curvature of space. The whole thought experiment was hailed by the media and Einstein's theory was subsequently widely embraced. We now know that the experiment had failed to include the radiation forces that arise from acceleration through the vacuum energy fields. This unknown force, had it been known to Einstein, would have lead to the sought after unification and changed mankind's role in the universe. This unknown source of electromagnetic energy and subsequent non-inclusion in the theory, resulted in a wrong path or view that gravitational mass and inertial mass were equivalent and indistinguishable from one another. We now know that only in the absence of electromagnetic radiation absorption is the gravitational mass and inertial mass equivalent.

So in all fairness the thought experiment was correct, because accelerating radiation was not included. This however, in reality, happens, and must be included for a complete formulation of equivalence. Drag from Radiation scatter through absorption and desorption by the elevator would oppose the cable acceleration and be the source of antigravity. Here we speak of radiation as the electromagnetic or photonic in nature. It arises quit literally from seemingly empty space, that is, from the vacuum energy when matter is accelerated through it. If the radiation produced by accelerating has a high 'momentum', it could stop the cable retraction or even reverse it. In this regard it is an inescapable repulsive term that is fundamental and must be included as fundamental, just as the concepts of gravitational mass and inertia in the equivalence principle. We then see that gravitational mass is equivalent to inertial mass minus the electromagnetic radiation, since this acts against the inertial equivalence. There is no intrinsic gravitational force in the vacuum, it arises from the presence of standing waves or mass, because mass's very existence produces a vacuum energy imbalance, that is resistance. The resistance creates the acceleration component from vacuum energy.

This says the vacuum force is simply the same as mass times acceleration. It should be noted that it also means mass must always have some component of acceleration. When two standing waves approach each other the energy screening or greater negative vacuum pressure increases between them. While an exact but opposite vacuum pressure forms on the outward sides of the standing waves that would cancel out the imbalance, except for the fact that each standing wave exerts a 'radiation pressure' between themselves that are repulsive or positive. The resulting imbalance is the force called gravity, while the standing waves or masses become gravitational masses. Where before we had just one standing wave or many greatly separated ones they were just inertial mass. Here we see that gravitational mass is really equal to inertial mass when we subtract out their positive radiation components, that is we separate the masses. This is the reason why to produce antigravity we must increase the positive radiation pressure of the gravitational

mass to match or exceed the vacuum energy screening that leads to the gravitational construct.

Since ELF radiation has more momentum or radiation pressure for a given amount of energy it is the best way to accomplish this task. Magnetic dipole flipping in connection with gross momentum will show some antigravity effects because the momentum from overall spin adds some momentum vectors into the dipole fluctuating radiation field, but this momentum contribution is very small compared to a System-G design.

References

- [1] WASER André, „ Gravity Potential Caused by the Variable Speed of Light ?“, www.aw-verlag.ch (August 25, 2000)