

Re: Slabinski and Mingst/Stowe disagree in Pushing Gravity

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- *From:* aphidias@xxxxxxxxxx (Strael Nosduj)
 - *Date:* Thu, 05 May 2005 04:42:57 GMT
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On Wed, 04 May 2005 Paul Stowe wrote:

- > The LeSagian force equation for the weak limit is,
- > $F = \zeta(\mu m)(\mu M)/d^2$ where
- > ζ = momentum flux (kg/m-sec²)
- > μ = total mass attenuation coefficient (m²/kg)
- > d = mean distance between centers (m)
- > m, M = mass of bodies (kg)
- > r, R = radius of bodies (m)
- > F = force (kg-m/sec²)
- > This has been known since the time of LeSage and is not in
- > dispute except, maybe by you...

The problem is not with that equation, it's with your failure to realize how much energy absorption is implied by that equation in order to account for the observed strength of gravity. Let me try to explain this in simple words:

Gravity exerts known forces on objects of known masses, in accord with Newton's law and the empirical value of the gravitational constant G , which in your model equals $\phi \mu^2$. Furthermore, the observed absence of any appreciable shielding or saturation effects – even for objects as large as the planets – implies a very low upper bound on the value of μ . Knowing the value of G , and taking the largest possible value of μ consistent with observation, we can compute the minimum possible value of ϕ as G/μ^2 . This is the minimum amount of momentum flux that must be absorbed by material bodies in order for them to be attracted with the observed force of gravity. (It's not hard to show that mixing reflection with absorption results in unequal mutual forces between bodies, i.e., it violates Newton's third law. We could allow a certain amount of this, within empirical limits, but it doesn't change the overall conclusion, so you should first try to understand the absorption case, and then if you're really interested you can learn about the effects of including reflection.)

For a given amount of absorbed momentum flux there is a definite corresponding amount of kinetic energy, depending on the velocity of the momentum flux, because the ratio of the kinetic energy to the momentum of a particle is simply $v/2$. If the ultramundane corpuscles

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are slow and heavy, the kinetic energy they deliver for a given amount of momentum is small, but if they are fast and light, the kinetic energy for a given amount of momentum is large, directly proportional to the velocity. This is just elementary physics.

So the question is, how fast are the corpuscles moving? We can place lower bounds on this speed in several different ways, and so we have everything we need to compute a lower bound on how much energy must be absorbed in order to account for the observed force of gravity and lack of shielding, and lack of aberration and lack of drag. When we make this calculation we find that matter must be absorbing energy at a stupendous rate – fast enough to vaporize any material object in a fraction of a second. This is true even if we assume the relatively slow value of c for the speed of the corpuscles.

Two factors were glossed over in the above discussion. One of them decreases the required amount of energy absorption, and the other increases it, so the conclusion doesn't change when they are taken into account... they would only serve to confuse you, so I will leave them out. (One is the effect of reflection combined with absorption, and the other is to account for the heating effect of the entire amount of absorbed flux, rather than just the net unbalanced amount.)

These conclusions can't be avoided by postulating some occult mechanism for isotropically re-radiating the stupendous amounts of absorbed energy in a form (ultra-ultra-mundane corpuscles?) that is totally invisible to and non-interacting with ordinary matter, because any such mechanism would violate the second law of thermodynamics.

- **Follow-Ups:**

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◇ From: Strael Nosduj

- **References:**

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