

'Missing' Features of Temporal Elasticity and Gravistrong sgm, 2018/NOV/13

Please examine the article here:

<https://ned.ipac.caltech.edu/level5/ESSAYS/Bekenstein/bekenstein.html>

Table 1 – near the bottom of the article.

It's a fascinating concise list of theories of gravitation. Previously, I've made stupendous claims of how temporal elasticity unifies General and Special Relativity – and – gravitation and the strong nuclear force. 'Wonderful' to say; a bit tedious in practice. In particular, there is Lorentz contraction along line-of-flight and Lense-Thirring which are both considered geometric phenomena as of writing. We shall see while employing Occam's razor, they are not exempt from temporal elasticity as a causative agent.

Lorentz contraction:

it exclusively happens along line-of-flight; in this scenario, velocity is a vector, momentum is a vector, and relativistic momentum is a vector – all dependent on the velocity vector, rest mass, and relativistic temporal warp. In other papers, we've understood that rest mass equates with a specific temporal warp associated with the energy density of that mass; protons have high energy density relative to electrons and so appear more localized than electrons. Visualize a proton as a spherical distribution of temporal warp – perhaps a 3D Normal – with most of it contained within the classical proton radius. Nearby the 'surface' would be the 'strong force' region. Very far away would be the gravitation region. In its velocity frame, nothing has changed at all, but from an observer's frame 'at rest', it has gone from spherical to oblate spheroid along line-of-flight. The information about 'how oblate' is stored in the velocity vector. The information about 'how dilated' is contained in the relativistic temporal warp. For a passenger on the spaceship, nothing has changed; a meter is still a meter along line-of-flight; a second is still a second; but relative to space-dock, time has slowed

and the ship appears shorter when viewed with long-range telescopes. When the ship returns to space-dock, the only thing they'll have to do is reset their watches.

Lense-Thirring:

now that we're gaining some ability to visualize temporal curvature in 3D, let's return to our model of the proton but enlarge it to the size of a spinning planet or neutron star. If you can visualize 'frame dragging', you can visualize temporal dragging. But instead of dragging space-time, we're dragging time exclusively. So now we have another feature of classical mechanics to accommodate: spin-momentum. As above, we start with a spherical Normal distribution of temporal curvature with a certain major percentage within the radius. Outside the radius, is temporal curvature we'd normally label gravitational attraction. Where is the information stored to determine how much temporal dragging (and in what direction)? Spin-momentum.

So there is no hand-waving nor voodoo when it comes to temporal elasticity and gravistrong. The 'missing' data is there – encoded in relativistic mechanics with respect to Special Relativity – and classical mechanics with respect to General Relativity. Temporal elasticity is necessary and sufficient to explain mass, gravitation, relativistic effects, and the strong nuclear force. Of course, it can also explain antimatter and the apparent preponderance of matter in our universe today. Aside from electromagnetism, temporal elasticity is **the** unifying concept in physics.

Note: Lense-Thirring was **barely** detectable using Gravity Probe-B. At the particle level, this *temporal effect* is so *small* compared to other things like electrostatic attraction, we can essentially ignore it. However, when we deal with spinning neutron stars and black-holes, we can't. A comprehensive theory that bridges particle physics with cosmology necessarily must include it. To my knowledge, temporal elasticity is the *only* concept that can do it so concisely.