Review of: "Reinterpreting Relativity: Using the Equivalence Principle to Explain Away Cosmological Anomalies"

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Potential competing interests: No potential competing interests to declare.

It is certainly agreed that modern physics, the standard model, and cosmology are in crisis. Those problems are scientific, not philosophical. The reference to Quine suggests that readers can interpret the written word in any way they like. That may be acceptable in philosophy. It should not be accepted in science.

Philosophy and mathematics don't make things happen. Things happen for physical reasons. If one wishes to interpret: "in terms of mass-energy *locally logarithmically accelerating* the metric expansion of a second-order spacetime fabric around objects located in an absolute first-order Newtonian coordinate system—which we argue generates 'spacetime curvature' as a *measurement artifact*", one should give a physical reason for that interpretation to be valid. That reason should be backed by the appropriate mathematics. None are given.

As a philosophical presentation, it raises some interesting ideas. The use of many postulates and the lack of physical reasons supported by mathematics limits its scientific value.

For example, "Einstein's inclusion of Λ is obviously justified, since the Universe hasn't collapsed". Einstein only considered a finite universe when he introduced Λ to prevent it from collapsing. The paper "Physical explanations of Einstein's gravity" - V N E Robinson 2021 *J. Phys. Commun.* **5** 035013 (https://doi.org/10.1088/2399-6528/abee2f), shows that the exact solution to Einstein's gravity predicts that it is weaker than the inverse square. Gravity weaker than the inverse square means an infinite steady-state universe will not collapse.

That paper also shows that Einstein's space-time distortion is photon redshift. Explaining aspects of gravity using photon redshift is straightforward. It is the author's choice as to which philosophical path is taken.

By way of background, distances are measured using photons. When photons are redshifted, the measured distance changes. Einstein's relativity theory is that local measurements will always be the same, irrespective of speed or the strength of a gravity field. It is only when photons pass from a strong gravitational field to a weaker one that photon redshift means lengths have increased. There is no need to introduce other "grids" to explain gravity effects.