Correcting the errors in the Hal Puthoff – Eric Davis Metric Engineering Papers V3

jacksarfatti@gmail.com

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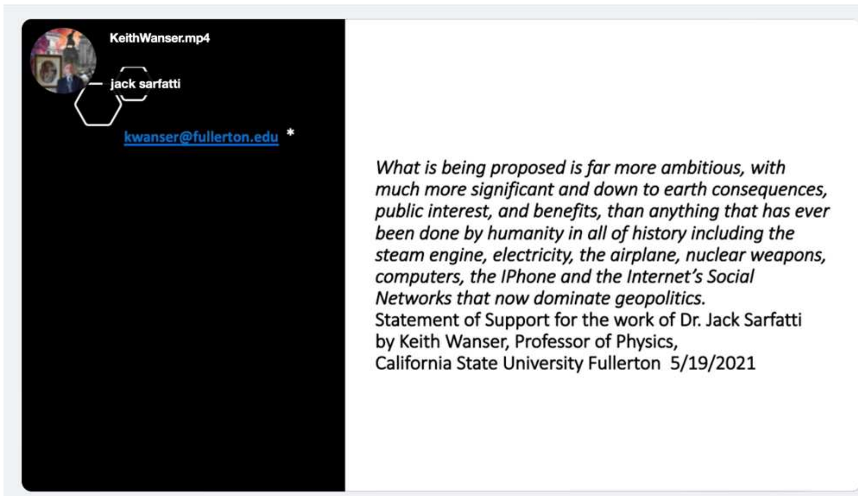
This is no small matter. Here is why:



https://vimeo.com/553816312?share=copy

Puthoff and Davis wrote:

3. METHODOLOGY

The PV methodology employed here follows that of Ref. [1]. As explained in detail there, the PV treatment of GR effects is based on an action principle (Lagrangian) that holds in special relativity, but with the modification that the velocity of light c in the Lorentz factors and elsewhere is replaced by the velocity of light in a medium of variable refractive index, c/K; expressions such as $E = mc^2$ are still valid, but take into account that $c \rightarrow c/K$; and $E \left(= E_o/\sqrt{K}\right)$ and $m \left(= m_o K^{3/2}\right)$ are now functions of K; the vacuum polarization energy associated with the variable K is explicitly included, and so forth. The Lagrangian density and resulting Euler-Lagrange particle and field equations that lead to GR-compatible results to testable order are given in Appendix A. For the Levi-Civita Effect, we examine Eq. (A-3) as it applies to empty space (static case),

$$\nabla^2\sqrt{K} = -\frac{\sqrt{K}}{4\lambda}\left[\frac{1}{2}\left(\frac{B^2}{K\mu_o} + K\varepsilon_o E^2\right) - \frac{\lambda}{K^2}(\nabla K)^2\right]. \qquad (1)$$

Here we see that changes in the vacuum dielectric constant K are driven by the energy densities of the EM fields and the vacuum polarization.

$$\begin{aligned}\nabla^2\sqrt{K} - \frac{1}{(c/K)^2}\frac{\partial^2\sqrt{K}}{\partial t^2} \\ = -\frac{\sqrt{K}}{4\lambda}\Bigg\{\frac{(m_0c^2/\sqrt{K})}{\sqrt{1-(\frac{v}{c/K})^2}}\frac{[1+(\frac{v}{c/K})^2]}{2}\delta^3(\mathbf{r}-\bar{\mathbf{r}}) \\ +\frac{1}{2}\left(\frac{B^2}{K\mu_0} + K\varepsilon_0 E^2\right) - \frac{\lambda}{K^2}\left[(\nabla K)^2 + \frac{1}{(c/K)^2}\left(\frac{\partial K}{\partial t}\right)^2\right]\Bigg\} \qquad (34)\end{aligned}$$

Puthoff says his "K" is the same as my "S". That is false.

"Jack, comparing our approaches, in Eq. (34) of my PV paper my coupling coefficient 8pi[G(sqrt K)/c^4] equates to your coupling coefficient 8pi[GS/c^4]. So, your S and my K are identical."

My "S" is in a rough approximate toy model using Puthoff's "K" is

$$S = K^4$$

However, the Puthoff-Davis "K" is only for the virtual electron-positron pairs inside the quantum vacuum with $T_{\mu\nu} = 0$. In contrast my S is for the interior matter's screened interacting complex system of real electric charges. But for now, we will neglect this important conceptual distinction and proceed purely mathematically.

Einstein's field equation neglecting the dispersion for simplicity that makes the equation nonlocal in spacetime as shown by Giovanni Modanese is

$$G_{\mu\nu} = 8\pi \frac{G}{c^4} K^4 T_{\mu\nu}$$

Taking the Newtonian weak field limit the metric gravity field in lowest order small perturbation $h_{\mu\nu}$ theory is the symmetric 4x4 matrix

$$g_{\mu\nu} = \begin{pmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{pmatrix} + \begin{pmatrix} h_{00} & h_{01} & h_{02} & h_{03} \\ h_{10} & h_{11} & h_{12} & h_{13} \\ h_{20} & h_{21} & h_{22} & h_{23} \\ h_{30} & h_{31} & h_{32} & h_{33} \end{pmatrix}$$

The Arnowitt-Deser-Misner (ADM) warp drive velocity v_s shift 3-vector ~ $f(r_s)v_s$ $(e.g., Alcubierre)$ for *external observers in vacuum* outside the warp bubble is

$$N_i = (g_{01} g_{02} g_{03})$$

The ADM **attractive gravity redshift**/**repulsive antigravity blue shift** lapse function is

$$N = g_{00}$$

In the weak field Newtonian limit to first order bare perturbation theory in the sense of Feynman's diagrams for quantum field theory. We have the gravity wave equation inside dispersive matter that is roughly speaking for now glossing over the convolution theorem necessitated by dispersion of EM inside matter using the Puthoff-Davis notation, the correct "Equation 34" of Puthoff-Davis is really in Einstein's GR not their bogus PV theory

Assuming the toy model equation of state for this isotropic material with a simple electromagnetic field source is

$$K^2 = \varepsilon_r \mu_r$$

$$\mu_r = \frac{K^2}{\varepsilon_r}$$

$$\nabla^2(K^2\phi) - \frac{1}{c^2}\frac{\partial}{\partial t}^2 (K^4\phi) = 2\pi \frac{G}{c^4} K^4 \varepsilon_r \left(\frac{\vec{B}^2}{K^2\mu_0} + \varepsilon_0 \vec{E}^2\right)$$

The induced universal Paul Hill UFO warp drive acceleration field that cancels Earth gravity is in the static near-field limit for quantum coherent Glauber states of virtual spacelike spin 2 massless gravitons

$$\vec{g} = c^2 \vec{\nabla}\left(\frac{\phi}{K^2}\right)$$

In the simplest case neglecting the all-important gradients of K that we nano-engineer into the artificial space-time metamaterials of the NHI warp drive time machines that disable our nuclear weapons with gravity laser beam directed energy weapons, using the divergence theorem of vector calculus for a flat parallel plate capacitor of area A separated by d with metamaterial dielectric between the plates in the static limit with zero magnetic field with unit vector $\hat{z}$ normal to the plates

$$\vec{g} = 2\pi \frac{G}{c^2} K^4 \varepsilon_r \varepsilon_0 \vec{E}^2 d\hat{z}$$

Feynman's diagrams for quantum gravity as a spin 2 field on globally flat Minkowski space-time background gives Einstein's classical 1915 field equation in lowest order perturbation theory as the graviton bare vertex function in Fourier transform 4-momentum space.[1] I use a mean field screening semi-phenomenological model including the effects of dispersion of the electromagnetic field from emergent quasi-particles and collective modes in the long wave low frequency "effective field theory" limit that suffices for practical metric engineering physics at least for subluminal warp drive as reported by US Navy pilots in their Close Encounters with "Tic Tacs."

[1] Feynman's 1962 Cal Tech Lectures is for active mass sources at the microscopic level. This concept is explained well by Richard Tolman in his 1930s Cal Tech Lectures "Relativity, Thermodynamics, Cosmology."

The Feynman bare graviton vertex function including the Frohlich condensate "Meissner" effect is using the Puthoff-Davis notation for continuity of the narrative

$$\tilde{h}_{\mu\nu}\left(\omega,\vec{k}|\nu,\vec{q}\right) = 8\pi\frac{G}{c^4}\frac{\widetilde{K}(\nu,\vec{q})^4\tilde{T}_{\mu\nu}\left(\omega,\vec{k}\right)}{\widetilde{K}(\nu,\vec{q})^2\left(\frac{\omega}{c}\right)^2 - \vec{k}^2 - \frac{k_0^2}{\widetilde{K}(\nu,\vec{q})^2} \pm i\epsilon}$$

The spacetime metamaterial electromagnetic susceptibility screening function $\widetilde{K}$ is Floquet pumped with modulation frequency/wave vector $\nu,\vec{q}$ the active mass source stress-energy tensor Fourier transform frequency/wave vector is $\omega,\vec{k}$.

The near field static low frequency limit is the Helmholtz equation Fourier transform

$$\tilde{h}_{\mu\nu}\left(0,\vec{k}|\nu,\vec{q}\right) = 8\pi\frac{G}{c^4}\frac{\widetilde{K}(\nu,\vec{q})^6\tilde{T}_{\mu\nu}\left(0,\vec{k}\right)}{-\widetilde{K}(\nu,\vec{q})^2\vec{k}^2 - k_0^2 \pm i\epsilon}$$

The near field low frequency long wave limit is

$$\tilde{h}_{\mu\nu}(0,|\nu,\vec{q}) = 8\pi\frac{G}{c^4}\frac{\widetilde{K}(\nu,\vec{q})^6\tilde{T}_{\mu\nu}\left(0,\vec{k}\right)}{-k_0^2 \pm i\epsilon}$$

This approximation breaks down in the high frequency short wave limit. Also, we must keep

$$\tilde{h}_{\mu\nu} \ll 1$$

The universal induced Paul Hill acceleration field is in this regime is

$$\vec{g}(k,|\nu,\vec{q}) = \frac{c^2}{\widetilde{K}(\nu,\vec{q})^2}\vec{k}\tilde{h}_{\mu\nu}(k,|\nu,\vec{q}) = 8\pi\frac{G}{c^2}\frac{\widetilde{K}(\nu,\vec{q})^4\tilde{T}_{\mu\nu}\left(0,\vec{k}\right)}{-\widetilde{K}(\nu,\vec{q})^2\vec{k}^2 - k_0^2 \pm i\epsilon}\vec{k}$$