

Comment on the Pais Superforce Theory

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Planck Scale : Where Gravity and Quantum physics are unified

Spacetime becomes a “quantum foam” at the Planck Scale where micro-Blackhole appear and evaporate because of quantum uncertainty :

$$\hbar \cong W\tau$$

W is energy

τ is a fluctuation time

Planck Length: $r_P = \sqrt{\frac{G\hbar}{c^3}}$

Planck Mass: $M_P = \sqrt{\frac{\hbar c}{G}}$

Planck Charge: $q_P = \sqrt{\hbar c}$

The Physical Interpretation of GR by Salvatore Pais

- Field Equations of Einstein's General Relativity:

$$R_{\nu\mu} - \frac{1}{2} g_{\nu\mu} R = \frac{8\pi G}{c^4} T_{\nu\mu}.$$

- Dimensional Analysis : $\frac{1}{\ell^2} = \frac{8\pi G}{c^4} \frac{W}{\ell^3}$, W = energy ℓ = length
- Result : $\frac{\ell}{W} = \frac{8\pi G}{c^4} = \frac{1}{Force}$ (Pais "SuperForce")

How you interpret things is how
you conceptualize them, and this is

Supremely Important:
“energy per length of a String”

or

FORCE!



Pais Physical Interpretation Continued

$$L_P^2 = G h^* / c^3 \quad (h^* = \hbar)$$

L_P being the Planck Length

$$F_G = (G m_P^2 / L_P^2) \quad \text{Gravity Force at Planck Scale}$$

$m_P^2 = h^* c / G$ we obtain

$$F_G = c^4 / G$$

GEM form for Pais Interpretation

$$r_o = \frac{e^2}{m_o c^2}$$

$$m_o = (m_p m_e)^{1/2}$$

$$r_p = L_p$$

$$\left(\frac{m_p}{m_e} \right)^{1/2} = \ln \left(\frac{r_o}{r_P} \right)$$

GEM Theory Expression for Pais Superforce

$$F_G = c^4 / G, \quad \text{We define} \quad \left(\frac{m_p}{m_e} \right)^{1/2} = \sigma$$

$$G = \left(\frac{e^2}{m_p m_e} \right) \alpha \exp \left(-2 \left(\frac{m_p}{m_e} \right)^{1/2} \right) = 6.668 \times 10^{-8} \text{ dyne} - \text{cm}^2 \text{ gm}^{-2}$$

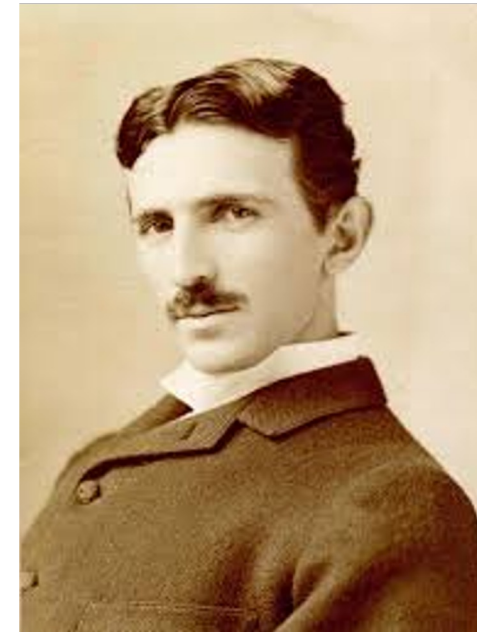
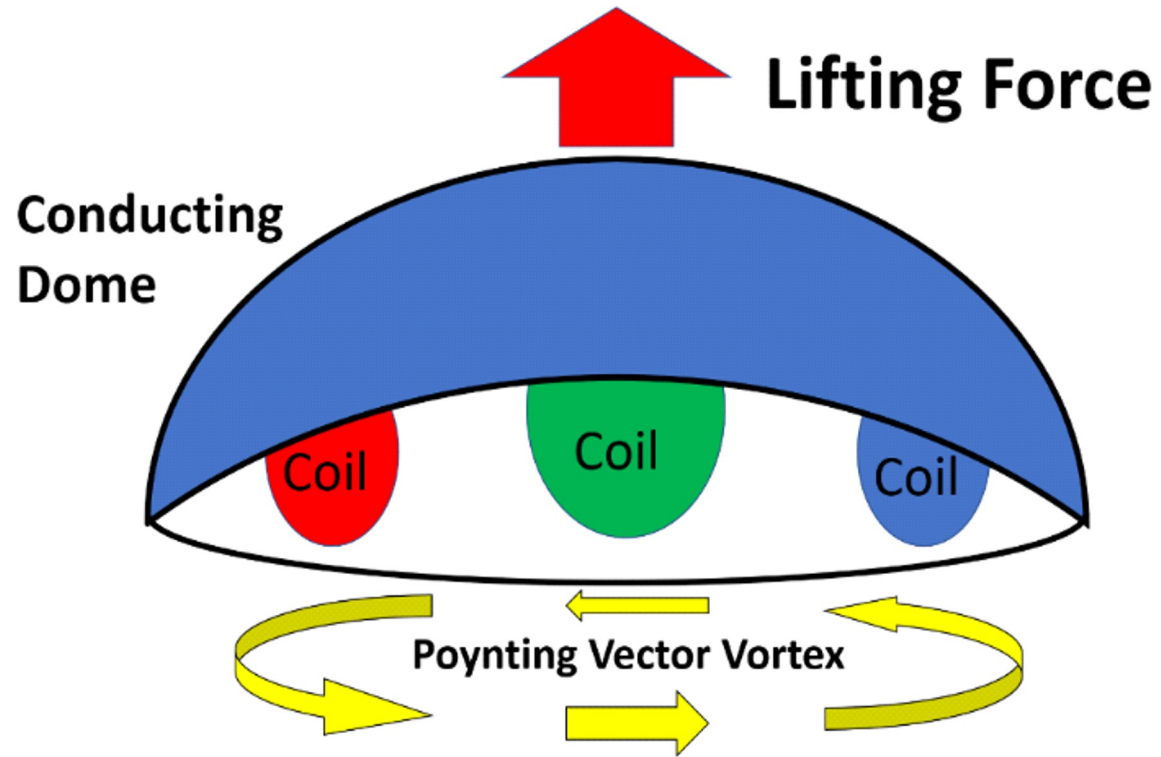
$$F_G = \frac{c^4}{G} = \frac{h^* c}{r_0^2} \exp(2\sigma) = \frac{h^* c}{L_P^2}$$

GEM Vacuum Bernoulli Equation for Gravity Control (Also Can be derived from Puthoff's Theory)

$$\frac{S^2}{uc^2} - \frac{g^2}{2\pi G} = K$$

S = Poynting Flux, u = background energy density , G = Newton Gravitation Constant, c= speed of light, g = Gravity field , K= constant

Utilization for Gravity –EM Flight?

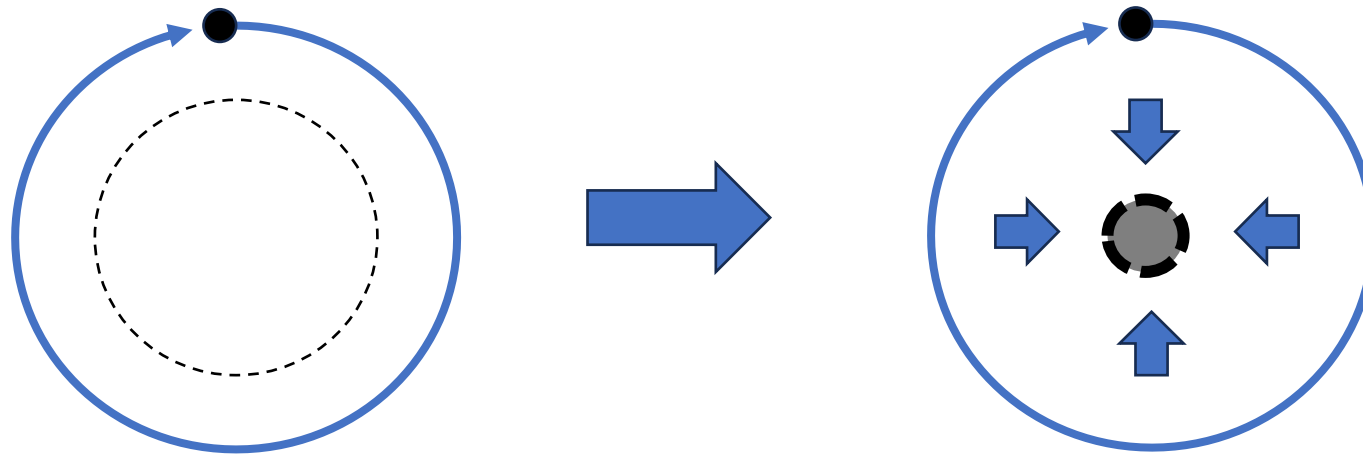


Nikola Tesla: Inventor of the Poynting Vector Vortex

GEM Theory predicts anti-Gravity lifting forces.

Gravity fields have negative energy density

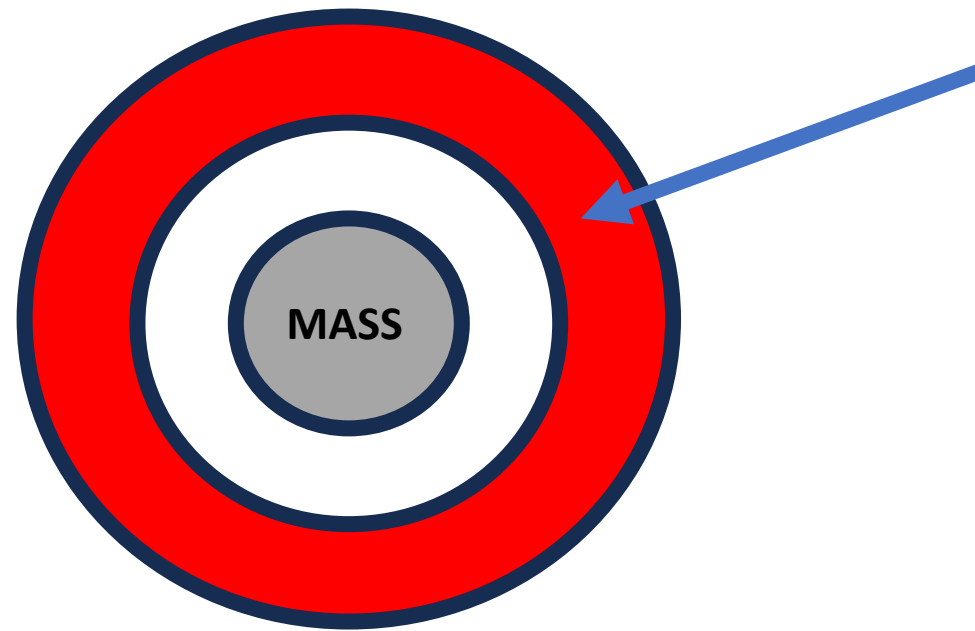
- Thought experiment : Spherical shell collapses – 'mass at a distance' is unchanged
- Kinetic energy of collapsing shell $\frac{1}{2} mv^2$ is compensated for by negative energy density: $-g^2/8\pi G$, of increased gravity fields



Orbit of distant mass is unaffected by collapse of spherical shell

Inertia Reduction through VBE? (The Pais Concept)

- Surrounding shell of high S^2 (EM fields) may lower inertia of mass inside shell



High energy
microwave fields
→ VBE →
 $-g^2/8\pi G$

**Negative
mass
density!**

● Inertia reduced by Equivalence Principle!

Utilization of EM fields for Inertia Reduction?(Pais)

US Patent US 10 , 144 ,532 B2 Dec . 4 , 2018 Inventor Salvator C. Pais

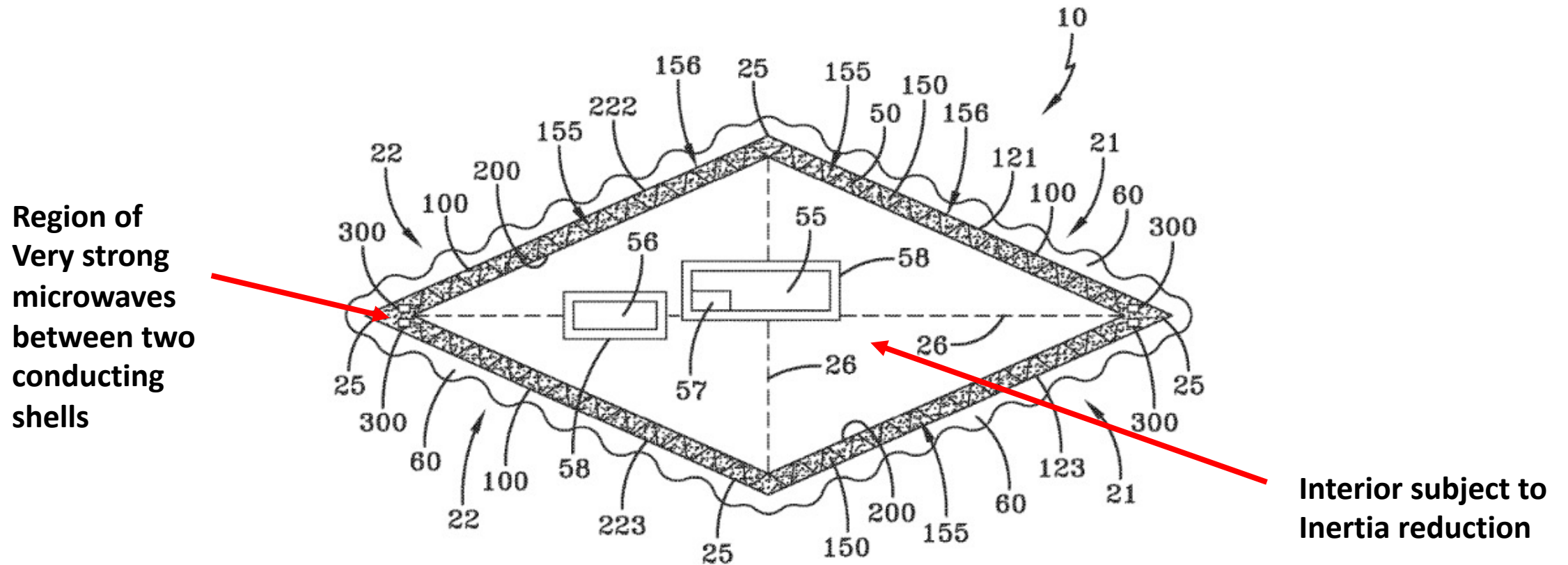


FIG-2

Summary

- **Pais Physical interpretation of “SuperForce” appears very useful**
- **Numerous areas of agreement between Pais, Puthoff and GEM**