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Vacuum structure II

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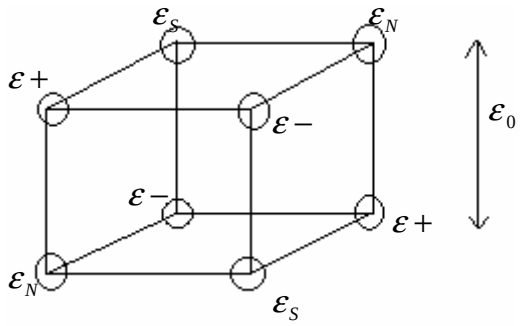
See the Unified Absolute Relativity Theory at:

www.wbabin.net/saraiva/saraiva305.pdf
www.wbabin.net/saraiva/saraiva306.pdf
www.wbabin.net/saraiva/saraiva307.pdf
www.wbabin.net/saraiva/saraiva328.pdf
www.wbabin.net/stham/saraiva347.pdf
www.wbabin.net/stham/saraiva366.pdf

The vacuum is a cubic lattice of vacuons:



Vacuon energy and mass:

$$E_0 = \frac{{\varepsilon_0}^2}{{\mu_0}^2} = 310MeV \ ; \qquad m_0 = \frac{E_0}{c^2} = 5.524\times10^{-28}\,kg$$

Relation Vacuon-neutrino:

$$\frac{m_0}{m_\nu} = \frac{{\varepsilon_0}^2}{{\mu_0}^2 c^2 q_e \sqrt{S}} = \frac{1}{\sqrt{2}\alpha^4} \ ; \qquad \frac{m_0}{m_e} = \frac{\sqrt{2}\pi}{\alpha}$$

Neutrino wavelength and fine structure constant:

$$\sqrt{S} = \frac{\sqrt{2}\alpha^4 {\varepsilon_0}^2}{{\mu_0}^2 c^2 q_e} = \frac{h^2\alpha^3}{3{q_e}^3} \; ; \qquad \alpha = \frac{h^2 {\mu_0}^2 c^2}{3\sqrt{2}{q_e}^2 {\varepsilon_0}^2}$$

$$\frac{\sqrt{2}h^3 {\mu_0}^2 c^3}{3{q_e}^4 \varepsilon_0} = 1$$

Frequency and wave speed of the magnetic Vacuon:

$$E_0 = hf\frac{c^2}{w^2} \; ; \qquad f = \frac{h + \sqrt{h^2 + 4{m_0}^2 c^2 S}}{2m_0 S}$$

$$w = \sqrt{c^2 - Sf^2} \; ; \qquad S = 1.91\times10^{-34}\, m^2$$

$$f = 6.3\times10^{27}\, Hz \; ; \qquad w = i8.71\times10^{10}\, m/s \; ; \qquad x = i\sqrt{S}$$

$$\frac{6\pi.k_B {q_e}^3}{h^2 x_e} = 1$$

Minimum possible electric resistivity before superconductivity:

$$\rho = \frac{1}{c} = 3.34\times10^{-9}\,\Omega m \; ; \quad \text{c – Light speed.}$$

The same for mobility.

Maximum possible magnetic field of a neutron star:

$$B = c = 3\times10^8 T$$

Magnetar field:

$$B = 10^{11} T$$

Magnetars must be very different from neutron stars, they pass a phase change.