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Refractive Indices

António Saraiva -- 2009-06-19
ajps2@hotmail.com

See Unified Absolute Relativity Theory at:

http://www.wbabin.net/saraiva/saraiva105.pdf

http://www.wbabin.net/saraiva/saraiva223.pdf

Einstein's speed equation:

$$w = c^2 \frac{w_0 - v}{c^2 - v w_0} \; ; \qquad w_0 = c - \Delta w_0 \; ; \qquad v = c - \Delta v$$

v^2 is the gravitational potential of the medium

$$w = c \frac{\Delta v - \Delta w_0}{\Delta v + \Delta w_0} \qquad \text{and} \qquad w = c/n \qquad \text{and} \qquad \Delta w_0 = \frac{k f_0^{\,2}}{2c}$$

$$n = \frac{2c\Delta v + k f_0^{\,2}}{2c\Delta v - k f_0^{\,2}}$$

$$\Delta v = c - \sqrt{\frac{G_e m}{R}} \; ; \qquad R = \frac{Nx}{2\pi} \; ; \qquad x = \frac{h}{mc}$$

Gravitational constant of the electron:

$$G_e = \frac{q^2}{4\pi\varepsilon_0 m_e^{\,2}} = 2.78\times10^{32}$$

N – Inverse fine structure constant

$$\Delta v = \frac{1.56\times10^{-56} - m^2}{1.04\times10^{-64}} \quad \text{(Theoric)}$$

For a black hole $\Delta v = 0 \quad \Leftrightarrow \quad m = 1.25\times10^{-28}\, kg$

$$E_0 = \left(\frac{\varepsilon_0}{\mu_0}\right)^2 = 4.964\times10^{-11}\, J \qquad \Leftrightarrow \qquad m_0 = 5.52\times10^{-28}$$

$$m_0 = \sqrt{2}.\pi.m$$

Faster than light medium for low frequency:

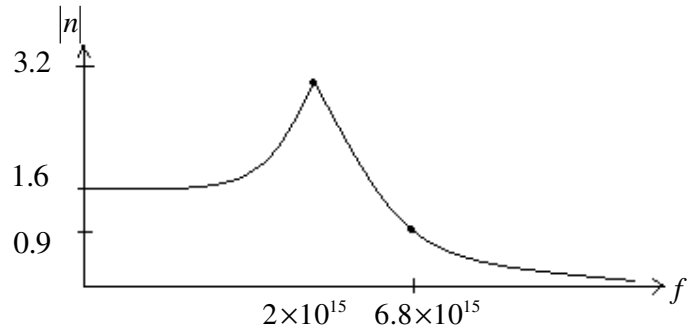
$$c = \sqrt{\frac{G_e m}{R}} \qquad \Leftrightarrow \qquad \frac{m}{R} = 3.2\times10^{-16}$$

$$\frac{m}{R\frac{4}{3}\pi R^2} = \frac{3.2\times10^{-16}}{\frac{4}{3}\pi R^2} \qquad \text{and} \qquad R = 3\times10^{-10}\,m$$

Density:

$$D = \frac{m}{V} = 0.85\,g/cm^3$$

Sapphire refractive index

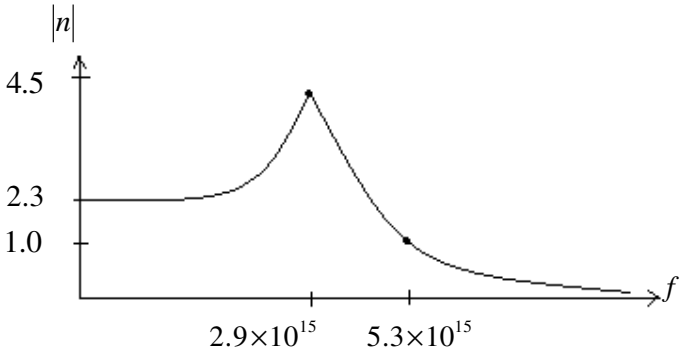


$$\Delta v = \frac{10.c.{f_{0MX}}^2}{{f_M}^2} = 2.6\times10-11$$

$$1.5 f_M = f_0\sqrt{\frac{2c}{\Delta v}} \qquad \Leftrightarrow \qquad f_0 = 6.8\times10^{15}\,Hz$$

f_0 -- Frequency for faster than light speed

Diamond



$\Delta v = 5.37\times10^{-11}$; $f_0 = 2.1\times10^{16}\,Hz$

For x rays we have speeds greater than light speed.