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My Constant in the Intergalactic Vacuum
(Variation of Light Speed with Frequency-Correction)

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See Unified Absolute Relativity Theory at:

www.wbabin.net/saraiva/saraiva105.pdf
www.wbabin.net/saraiva/saraiva223.pdf

Light speed in the vacuum at the gravitational field of the earth surface:

$$w = \sqrt{c^2 - k_T f^2} \quad ; \qquad k_T = 1.9 \times 10^{-34} m^2 \quad ; \qquad \text{f = frequency}$$

Earth surface gravitational acceleration:

$$g_T = 9.8 ms^{-1}$$

Gravitational acceleration of the universe:

$$g_U = \frac{c^2}{R_U} = 6.9 \times 10^{-10}$$

My constant in intergalactic vacuum:

$$\frac{k_V}{k_T} = \left(\frac{g_U}{g_T} \right)^2 \qquad \Leftrightarrow \qquad k_V = 9.5 \times 10^{-55} m^2$$

My constant is variable with the gravitational acceleration.

Light speed variation:

$$w = \sqrt{c^2 - k_V f^2} \qquad \Leftrightarrow \qquad \frac{\Delta w}{c} = \frac{k_V}{2c^2} \left(f_1^2 - f_2^2 \right)$$

A) $f_1 = 7.1 \times 10^{24} Hz$; $f_2 = 2.4 \times 10^{18}$ $\Leftrightarrow$ $\Delta w / c = 2.7 \times 10^{-22}$

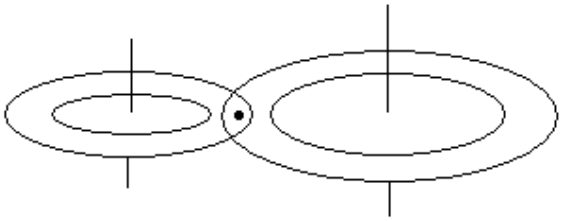
B) $f_1 = 4.8 \times 10^{19}$; $f_2 = 7.3 \times 10^{18}$ $\Leftrightarrow$ $\Delta w / c = 1.2 \times 10^{-32}$

Experimental values:

A) $\Delta w / c < 6.3 \times 10^{-21}$; B) $\Delta w / c < 4.2 \times 10^{-18}$

Forces speeds

The interaction of the forces happens at half distance between the two particles, so there's no aberration. There are equal delays for both particles:



The field of each particle transmits the forces with virtual photons or longitudinal photons:

For the electron

$$f = \frac{{f_M}^2}{f_e} \; ; \qquad f_M = \frac{c}{\sqrt{k}} \; ; \qquad f_e \text{ -- Electron Compton wavelength}$$

Frequency and speed:

$$f = 3.8 \times 10^{30} Hz \; ; \qquad w = f\sqrt{k} = 5.3 \times 10^{13} ms^{-1}$$

For a visible photon, frequency and speed:

$$f = 9.4 \times 10^{35} \; ; \qquad w = 1.3 \times 10^{19}$$

For the proton:

$$w = 3.3 \times 10^{10}$$