

Saraiva's Constant

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See Unified Absolute Relativity Theory at:

<http://www.wbabin.net/saraiva/saraiva105.pdf>
<http://www.wbabin.net/saraiva/saraiva223.pdf>

S form Surface and Saraiva.

$$S = 1.9134 \times 10^{-34} m^2$$

Light speed in vacuum w:

$$w = \sqrt{c^2 - Sf^2}$$

c – Light speed for $f = 0$, the speed of rotation of the local universe.
f – Frequency

$$w = 0 \Leftrightarrow f = f_M = \frac{c}{\sqrt{S}} = 2.167 \times 10^{25} Hz$$

f_M -- Compton frequency of the matter

For $f > f_M$ the vacuum behaves as a plasma and has electromagnetic longitudinal waves.

Speed of the longitudinal waves:

$$w = i\sqrt{S}f$$

Longitudinal waves wavelength:

$$x = i\sqrt{S} = i1.4 \times 10^{-17} m$$

Calculation of the constant

Unified and electric forces for two electrons:

$$F = \frac{hSf_e^4}{c^3} = \frac{q_e^2}{4\pi\epsilon_0 R^2} \quad \text{and} \quad R = \frac{x_e}{\pi\alpha^2}$$

h – Planck's constant; S – Saraiva's constant;

f_e -- Electron's Compton wavelength; c – Light speed
 q_e -- Electron's charge; ϵ_0 -- Vacuum permittivity;
 x_e -- Electron's Compton wavelength; m_e -- Electron's mass
 α -- Fine structure constant

$$S = \frac{\pi \cdot q_e^2 h \alpha^4}{4 \epsilon_0 m_e^2 c^3}$$

True mass of the proton

Proton energy: $E = 1.50327736 \times 10^{-10} \text{ J}$

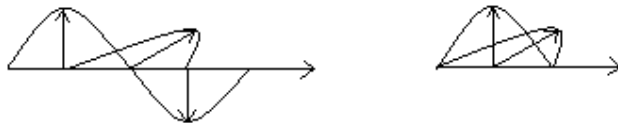
$$E = mcw = \frac{hcf}{w}; \quad w = \sqrt{c^2 - Sf^2}$$

$$\Leftrightarrow m = \sqrt{\frac{E^2}{c^4} + \frac{SE^4}{c^6 h^2}}$$

$$m = 1.6727133 \times 10^{-27} \text{ kg}$$

Waveparticle

There are two possible ways of relating the magnetic and the electric fields in a wave:



In the first way the energy oscillate between the electric field and the magnetic field so we have a truly wave.

In the second way there's no oscillation.

Real electromagnetic waves are like the second way so the wave is just a group of particles.