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Reference Mass of Some Particles

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Particles have two masses. The one we can measure is the sum of the reference mass and the mass of the gravitational field of the reference.

The proton

Equations from the Unified Absolute Relativity:

$$\begin{cases}(c^2-w_0{}^2)^3(c^2-v^2)^3=a(c^2+vw_0)^4(w_0+v)^2\\(c^2-w_0{}^2)(c^2-v^2)(c^2+vw_0)^2=b(w_0+v)^4\end{cases}$$

$$a=\frac{g^2k}{c^2}\quad;\quad b=\frac{m^2c^6k}{h^2}\quad;\quad g=\frac{kf^3}{w}\quad;\quad m=\frac{hf}{w^2}$$

$$\frac{w_0}{c}=x\quad;\quad\frac{v}{c}=y\quad;\quad\frac{w}{c}=z=0.999939602$$

$$\begin{cases}(1-x^2)^3(1-y^2)^3=\dfrac{(1-z^2)^3}{z^2}(1+xy)^4(x+y)^2\\(1-x^2)(1-y^2)(1+xy)^2=\dfrac{1-z^2}{z^4}(x+y)^4\end{cases}\Leftrightarrow$$

$$\begin{cases}y=\dfrac{x-z}{zx-1}\\(1-x^2)(1-y^2)(1+xy)^2=\dfrac{1-z^2}{z^4}(x+y)^4\end{cases}\Leftrightarrow$$

$$\Leftrightarrow\quad x=0.9999692\quad;\quad y=-0.32433$$

$$\Leftrightarrow \qquad w_0 = 2.99783224\times10^{8} \quad ; \qquad v = -9.72316879\times10^{7}$$

$$m_0 = 1.19452706\times10^{-27}$$

The electron

$$w = c^2 \frac{w_0 + v}{c^2 + vw_0} \qquad \Leftrightarrow \qquad \Delta v = \frac{2c}{\Delta w}\Delta w_0$$

$$(c^2 - w_0{}^2)(c^2 - v^2)(c^2 + vw_0)^2 = b(w_0 + v)^4 \qquad \text{and} \qquad b = 2c^3\Delta w$$

$$\Delta w = 5.37036919\times10^{-3}$$

$$\begin{cases} \Delta v = \dfrac{2c}{\Delta w}\Delta w_0 \\ \Delta w_0 = \Delta w \dfrac{(c+v)^2}{(c^2 - v^2)} \end{cases} \qquad \Leftrightarrow$$

$$\Leftrightarrow \qquad \Delta w_0 = 8.956812\times10^{-11} \qquad \text{and} \qquad w_0 = c - \Delta w_0$$

$$v = -2.99792448\times10^{8} \qquad \text{and} \qquad \Delta v = c + v = 10.0$$

$$kf_0{}^2 = 2c\Delta w_0 \qquad \Leftrightarrow \qquad f_0 = 1.59569186\times10^{16}$$

$$m_0 = \frac{hf_0}{c^2 - kf_0{}^2} = 1.17642324\times10^{-34}$$

The neutron

$$w_0 = iV_0$$

$$w = c^2 \frac{w_0 + v}{c^2 + v w_0} \qquad \Leftrightarrow \qquad w = c^2 v \frac{c^2 + V_0^{\,2}}{c^4 + v^2 V_0^{\,2}}$$

$$(c^2 + V_0^{\,2})(c^2 - v^2)(c^2 + ivV_0)^2 = b(v + iV_0)^4 \quad \text{and} \quad 2b = 1.95724637 \times 10^{30}$$

$$\Leftrightarrow \qquad V_0^{\,2} = \frac{2bv^2 - c^4(c^2 - v^2)}{c^2(c^2 - v^2) + 2b} \qquad \Leftrightarrow$$

$$\Leftrightarrow \qquad v = -2.997702138 \times 10^8 \quad ; \quad V_0 = 1.4695392 \times 10^8$$

$$m_0 = -7.0537728 \times 10^{-25}$$

The reference mass of the neutral particles is negative.