

Proton Mass Problem

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Almost no one knows that there are two proton mass values - the chemical value of $1.67282409 \times 10^{-27} \text{ kg}$, that is the true mass, and the physical value of 938.272029 MeV , that is the true mass-energy.

If we do some calculations, we see that the Einstein's mass-energy formula, $E = mc^2$, is not correct for the proton.

$$\text{Light speed -- } c = 2.99792458 \times 10^8 \text{ ms}^{-1}$$

$$\text{Planck's constant -- } h = 6.6260693 \times 10^{-34} \text{ Js}$$

$$\text{Electron charge -- } q = 1.60217653 \times 10^{-19} \text{ C}$$

$$\text{Proton mass -- } m = 1.67282409 \times 10^{-27} \text{ kg}$$

$$\text{Proton energy -- } E = 938.272029 \text{ MeV} = 1.50327742 \times 10^{-10} \text{ J}$$

Supposing that light speed is not constant:

$$E = mw^2 \quad \Leftrightarrow \quad w = 2.99774323 \times 10^8 \text{ ms}^{-1}$$

$$E = hf \quad \Leftrightarrow \quad f = 2.26873182 \times 10^{23} \text{ Hz}$$

Supposing that light speed is variable with the frequency by the formula:

$$w = \sqrt{c^2 - kf^2} \quad \Leftrightarrow \quad k = 2.11246149 \times 10^{-34} \text{ m}^2$$

$$\text{So: } \frac{h}{k} \approx \pi$$