Neutron, Proton and Electron Mass Formula

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Abstract. This is an improved and simplified version of [1]. This version of the formula clearly shows the importance of information in physics, through the logarithm of the base 2 and form of formula, \( y = 2^x \).

Mathematical constants are: \( e = 2.71828 \ldots \) 2\( \pi = 6.283185 \ldots \) and two physical constants: Proton/electron mass ratio \( \mu = 1836.152\ 672\ 45\ (75) \) and inverse fine structure constant \( \alpha = 137.035\ 999\ 074\ (44) \) [2]. The following relation is valid:

\[
\gamma = \sqrt{2} \left[ \frac{e^{2\pi} + \frac{1}{1+1/(\mu/\alpha'+1)}}{1+2\log(\mu, 2) - 1} \right] = 1.00137841920390(92)
\]

That is neutron/proton mass ratio: \( \gamma = 1.001378\ 419\ 17\ (45) \) [2]

From personal experience I can say that few people are interested in reading the explanation for this formula. The perspective of the majority can be summed up by the statement of a reputable professor: “The formula is a coincidence, maybe even a curiosity.” In the past ten months I have published dozens of these “curiosities”, with more than ten significant digits correct, thanks to viXra.org. An attentive reader can notice Planck’s values and nucleus in the exponent [3].

I would like to thank the minority who understood the fundamental importance of the formula and contacted me. I would especially like to express my gratefulness to Mr. Hugh Matlock for determining the uncertainty in this version of the formula.

References: