Serendipitous Hints Toroid Shape of Muon and Muon/Neutron Mass Ratio and Muon Neutrino Mass Proposal

1.0 Abstract

It was shown in “Serendiptious Mathematical Geometric Origin of Mass Ratio of the Proton to the Neutron” (1), that the mass ratio of the proton to neutron to within 9 digits and within one sigma of the 2014 Codata values. It was shown in “Serendipitous hints at shape of Electron and Electron/Neutron Mass Ratio”(7) that the mass ratio of the electron to neutron could be well approximated with an integrated polynomial equation to 9 digits and within one sigma of the 2014 Codata values. It was also shown that the electron could be contained in or composed of 6 components, possibly a toroid shape. It is expected, that if this integrated polynomial reflects that actual mathematics of the mass ratios of fundamental particles, that the muon could also be modeled similarly with the integrated polynomial with Lorentz transformation factor against the equilibrium of the aether. It is shown below that a similar pattern is followed for the muon neutron mass ratio.

2.0 Calculations Proton Neutron Mass Ratio and Electron Neutron Mass Ratio from previous papers.

It was shown in “Serendiptious Mathematical Geometric Origin of Mass Ratio of the Proton to the Neutron” (1) the following equation was used to model a mass ratio of the Proton to the Neutron.

Equation 1 $P(1-P)=\sqrt{3}/2\int_0^1 x^4(1-x)^4\,dx$ (1)

This yields the following two solutions.

Where P_x~~0.998623461644084 and P_y~~0.00137653835591585

Compared to the Codata proton neutron mass ratio of

proton-neutron mass ratio $m_{\mathrm{p}}/m_{\mathrm{n}}$	
Value	**0.998 623 478 44**
Standard uncertainty	**0.000 000 000 51**
Relative standard uncertainty	**5.1×10^{-10}**
Concise form	**0.998 623 478 44(51)**

(2)

It was shown in **"Serendipitous hints at shape of Electron and Electron/Neutron Mass Ratio"(7), that the following equations were used to model the mass ratio of the Electron to the Neutron.**

Equation 2 $$\frac{1}{(1-(\frac{\pi * Py}{12^{0.5}})^2)^{0.5}} = \alpha = 1.00000077922996619330$$

If we use the first solution to the equation (1) of y=0.998623461644084 and the Lorentz transformation in equation 2 above of 1.00000077922996619330 we can develop the following equation.

Equation 3 $$(E)(1-E) = \frac{\alpha}{6Px}((\sqrt{2})^8)/(\sqrt{3})^7 \int_0^1 x^4(1-x)^4 dx$$

Equation 3 gives the solutions for z of

E_x= 0.0000906445574284686867 and E_y= 0.999909355442571531

If we propose that the electron is contained in six structures of
E_x=0.0000906445574284686867
Then we can multiply E_x by 6 in Equation 4

Equation 4 $$Ex*6 = \frac{Me}{Mn} = 0.0000906445574284686867*6 = 0.00054386734446$$

$$\frac{Me}{Mn} = 5.4386734446*10^{-4}$$

Compare this to Codata Electron/Neutron mass ratio of

electron-neutron mass ratio m_e/m_n	
Value	**5.438 673 4428 x 10^{-4}**
Standard uncertainty	**0.000 000 0027 x 10^{-4}**
Relative standard uncertainty	**4.9 x 10^{-10}**
Concise form	**5.438 673 4428(27) x 10^{-4}**

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It was also shown in "Serendipitous hints at shape of Electron and Electron/Neutron Mass Ratio"(7) that the mass ratio of the Neutron Mass minus the Electron Mass all divided by the Neutron mass could be modeled as follows.

One can also use the other result from equation 3.0 of E_y= 0.999909355442571531 to calculate a mass ratio of the (Neutron Mass-Electron Mass)/Neutron Mass. If one uses the following equation

Equation 2.2.1 Using Equation 3 results.

$$\frac{Mn-Me}{Mn}=1-(1-Ey)*6=1-(1-0.999909355442571531)*6=0.999456132655$$

Equation 2.2.2 Using Codata values

$$1-\frac{Me}{Mn}=1-5.4386734428(27)*10^{-4}=0.999456132655$$

Note that both Methods give identical results to 12 digits

3.0 Muon/Neutron Mass Ratio

Considering the calculations in section 2.0, Calculations Proton Neutron Mass Ratio and Electron Neutron Mass Ratio from previous papers, can a similar equation be used that can describe the mass ratio of the muon to the neutron. One must show similar pattern to deter the impression of numerology. If there is a pattern to the ratios of the masses of particles, it must be a similar pattern, that does not use an infinite number line for coming up with numbers to model the ratios of masses. At the same time, if the patterns were too similar, these patterns would have been discovered before. Once the patterns are discovered, it may tell us useful information for the construction of Baryons and Mesons. Below is a set of equations to model the muon neutron mass ratio.

Equation 3 $$Px*48M\frac{1-M}{9}=\int_0^1 x^4(1-x)^4\,dx$$

Where the equation is being solved for M, and P_x =0.998623461644084, one of the solutions to Equation 1

Mx=0.99970188182917 and My=0.00029811817083363

It has been clear, for a long time, that the mass of the muon is close to one ninth of the neutron. Below we see an equation that gives the exact mass, to within one sigma of the 2014 CODATA ratio of the Muon/Neutron mass ratio.

First there is a Lorentz transformation.

Equation 3.1 $Lm = \frac{1}{\sqrt{1-(\frac{\pi My}{9})^2}} = 1.0000000054$

Where M_y=0.00029811817083363 , is one of the solutions to equation 3.0 above.

Equation 3.2

$$\frac{Mu}{Mn} = 1 - Lm * Px - \frac{Mx}{9} = 1 - 1.0000000054 * 0.998623461644084 + \frac{0.99970188182917}{9} = .1124545198$$

Which compares to 2014 Codata of

muon-neutron mass ratio m_μ / m_n	
Value	0.112 454 5167
Standard uncertainty	0.000 000 0025
Relative standard uncertainty	2.2×10^{-8}
Concise form	0.112 454 5167(25)

Where Mu = Mass of Muon, Mn=Mass of Neutron, Lm=Lorentz solution to Equation 3.1 =1.0000000054, Px=0.998623461644084, a solution to equation 1.0 in Section 2, and Mx=0.99970188182917 is solution to Equation 3 in Section 3.

4.0 Discussion

It is clear that the Equation 3.2 yields a value that is within 2 sigma of the 2014 Codata value for the Muon/Neutron mass ratio. It is a similar equation to that used for the Proton/Neutron mass ratio and the Electron/Neutron mass ratio. In fact the mass ratio of the Muon/Neutron depends on the mass ratio of Proton/Neutron Mass ratio. There are similarities to the Electron/Neutron Mass ratio as well. Is it numerology or is further evidence that is empirical? Obviously, it has been difficult to find a final theory. The solution cannot be straight forward either.
The Lorentz transformation in Equation 3.1, the 0.0000000054 part, when multiplied by the mass of the proton, may be the rest mass of the muon neutrino.

Proposed Muon Neutrino Mass $= 0.0000000054 * 1.67262178 * 10^{-27} Kg = 9 * 10^{-36} Kg = 5eV$

5.0 References

1) http://vixra.org/pdf/1502.0193v2.pdf
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