

Holographic Cyclic Universe E8 Symmetry Theory Indicates that Majorana Neutrinos are Unnecessary and That Neutrinos are Divided Tau Leptons

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Abstract: Using simple methods of analysis I conclude that our present broken E8 symmetry epoch without antimatter means that Majorana neutrinos cannot exist: this results, however, in neutrinos having small masses and small electric charges of 3 different amounts. The charges probably aid in neutrino detection. Masses of the leptons are derived.

In studying the role neutrons and leptons generally play in holographic cyclic E8 symmetric universe theory, I find from my earlier work¹ that antimatter cannot exist in our broken E8 symmetry epoch: therefore Majorana neutrinos² cannot exist also. This means that some other method must be used by Nature to rid the universe of surplus neutrinos. This method I believe is to have three generations of neutrinos each of smaller and smaller mass and charge. The first generation has 1/100th the mass and charge of the tau lepton³. The charge of the tau is that of the electron and the mc^2 mass energy is 1776.84 MeV (which is already approximately 1/100th the mass of the top quark). The first generation mass is therefore 17.8 MeV. The second generation has 1/100 the mass and charge of the first. The third generation has 10^{-5} the mass of the second and (probably) a very small charge. The measured masses (MeV) are 15.5, 0.17 and 0.000 0022. The values of Nature would be 17.8, 0.17, and 0.000 0018, which are reasonably close. Thus the neutrino appears to be Nature's "kitchen sink grinder disposal particle".

The mass of the tau lepton/top quark is $1776.84 \text{ MeV}/172.71561 \text{ GeV} = 10.287663 \times 1/1000 = 1.0287663 \times 1/100$, or about 3% numerically. Again the ratio $1/100$ seems to hold here too. More importantly, the top quark energy, which is also dark energy at this time (our epoch) has been amazingly morphed back into ordinary type energy in forming the tau lepton!

We have taken the top quark mass to be 172.71561 GeV . We note that this number is close to the measured mass-energy of the top quark (latest measurement 172.51): in fact 172.71561 is closer to the true value because the mass of h^{bar} is more accurately⁴ known than is the mass of the top quark. The ratio $172.71561/172.51 = 1.0011918$ is only 0.1% at present.

The mass of the muon (105.67 MeV) is the next lepton mass to be explained. See the next paragraph for this but first let us consider this particle. It has a slow decay rate (2 microseconds) so it is easy to detect and also it is a good candidate as a decay particle of the tau lepton which we have just identified as being seemingly related to dark energy: the muon is probably the particle that will allow mankind to easily utilize fast space communication (see my last note).

Next, I have given attention to the mass of the bottom quark (4.18 GeV). If one assumes this is related to a particle responsible for color and horizontal and vertical synchronization of the images sent for fast universe communication, such a particle would undoubtedly have the 8-fold gluon as the color force-particle gauge boson. Assuming the force particle is the bottom quark, $4.18 \times 8 = 33.44 \text{ GeV}$. This mass is within 1% of the mass of the "quantum of the universe", and indicates that this scenario is correct. Let us take the accurate value of the quantum $(H-Z) = 125-91.18762$

GeV = 33.81238 GeV. $1/8$ this value = 4.2265475 GeV is the most accurate value for the mass of the bottom quark we have at present. We note that $1/4$ this value $\times 1/100 = 105.66368$ MeV, which is almost exactly the measured mc^2 energy (105.6583668 MeV) of the muon lepton! This indicates that indeed the muon particle mass is closely related to the bottom quark and “quantum of the universe” mass.

The last non-neutrino lepton particle to study is the electron. Its measured mass is 0.510998910 MeV. $2X$ this value = 1.0219978 MeV. This is within 1% of the (tau lepton/top quark) mc^2 mass ratio (see earlier), and indicates a connection here. It also is even closer to the $31.8/31.5 = 1.022222222$ universe age ratio I have used several times in the past. $1.022222222/1.0219978 = 1.0002195$. This is less than 0.1% and indicates that at the scheduled collapse age of 13.5 billion years for the 9th cyclic universe which did not happen the mc^2 energy of the electron was exactly = 0.5000 000 MeV!

Next consider the most massive neutrino lepton, the tau neutrino. If we take $1/100$ the mass-energy of the tau lepton we get 17.7684 MeV as a possible mc^2 energy for this particle. If we destroyed all this much energy, however, we would destroy $4X/100$ “quanta of the universe” mc^2 energy (1.3524952 GeV) plus the binding energy of a hypothetical tau lepton made up of the mc^2 energy of a quark pair made up of a top quark + bottom quark ($172.71561 + 4.2265475 = 176.94215$ GeV). Next consider $100X$ the mc^2 energy of a tau lepton (177.684 GeV) minus 176.94215 GeV. This equals 0.74185 GeV, which is the binding energy of the hypothetical particle. Subtracting $1/100 \times (1.3524952 + 0.74185 = 2.0943452$ MeV) from 17.7684 MeV gives us 15.674055 MeV. Compare this to the measured mc^2 of 15.5 MeV for the tau

neutrino. The agreement is good to almost 1%, which confirms this scenario. For the next smaller muon neutrino, however, we are back to 0.17MeV rather than 0.155 MeV, suggesting to me that the change could have occurred as late as 13.5 billion years of universe age, i.e. after the scheduled collapse age of the 9th cyclic universe.

My work on the leptonic particles shows that holographic cyclic E8 symmetric universe theory is amazingly predictive and deserves greater attention despite the supposed poor quality of its authorship. The cosmological and particle physics experimental data I have used has been very good. Where we apparently fail is bringing all the available data together in a meaningful way. I have been able to this with no more than a cheap four-function calculator! This reminds me that a slide rule was all we had during most of the time we took to develop the atom bomb.

1. George R. Briggs, "Annihilation of top quark matter-antimatter pairs produced our universe without antimatter", ViXra 1701.0561, Jan 2017
2. "Majorana equation", Wikipedia, (2017)
3. "Lepton", Wikipedia, (2017)
4. George R. Briggs, "Richard Feynman's magic number alpha is explained by holographic cyclic E8 symmetric universe theory", ViXra 1710.0341, Oct 2017