A 3rd Revised MHCE8S Model Of Physics

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Abstract: A revised Quantum of the Universe is included in this model due to the recent increase in Higgs mass as a signal and the dark matter particle is recognized to be a dark neutrino particle of Majorana type (particle-antiparticle the same). We also have verified that the heavy 4430 MeV neutrino is a non-dark Majorana neutrino. A new boson also is introduced which we have called the Feynman.

All masses are MeV and 4 digits or fewer:

8 Quarks:

- Up_{proton} = 4.8
- $Up_{neutrron}$ = 3.55
- $Down_{proton}$ = 2.3
- $Down_{neutron}$ = 2.29
- Charm = 1275
- Strange = 95
- Top = 171.7 x 10^3
- Bottom = 4.180 x 10^3 (see text)

4 Bosons:

- Feynman = 90
- Higgs = 125.0 x 10^3
- Z_{weak} = 91.19 x 10^3
- W+,- = 80.38 x 10^3 (see text)

4 Massless gauge bosons:

- Photon
- Graviton
- Gluon
- Cosmophoton

8 Leptons:

- Electron = 0.511 (holo-
- Muon = 105.6 graphic)
- Tau = 1776
- Pre-holographic archaic electron = 0.5 (see tex
- Electron neutrino = 2.2 x 10^-6
- Muon neutrino = 0.17
- Tau neutrino = 15.5
- Majorana neutrino = 4430

1 Quantum of the universe Higgs - Z_{weak} = 33.91 x 10^3

1 dark composite spinless Majorana neutrino = 5285 MeV.

We note that 5285/33.91 = 155.85373 =155.8 = **nature's** 4-digit accuracy = 155 + 8. My viXra pub. #98 points out the importance of 155 in MHCE8S theory and 8 is one of Eugene Wigner's "magic numbers".

We also note that 4 cyclic universes have taken place. Cyclic universes were 1st predicted by Paul J. Steinhardt and Neil Turok as a way for growing universes to get rid of excess entropy. Collapsing cycling universes "bounce" rather than shrink to a point. Any collapsing universes would be bad news for humans and life generally but we think 4 will be our last with E8 symmetry prevailing . The 1st universe lasted 8.85 billion years and had only one particle, the archaic electron. The 2nd universe lasted 1.55 billion years longer, or 10.4 billion years, and added 5 new 2-digit particles, the 2 quarks of the proton, the muon neutrino, the strange quark, and the electron neutron. The 3rd universe lasted 1.55 billion years longer than the 2nd, or 11.95 billion years and added 4 new particles, the modern 0.511 MeV electron, the 2 neutron quarks, and the tau neutrino. The 4th universe lasted 1.55 billion years longer than the 3rd, or 13.5 billion years and added 8 new particles, the dark Majorana neutrino, the heavy Majorana neutrino, the Higgs boson, the muon lepton, the tau lepton. the charged W lepton, and the top and charm quarks. Two additional particles, the Z_{weak} and the bottom quark belong to this group but have reversed digits of a peculiar nature which requires further study (see p.6). Very recently it was realized that a new 90 MeV boson existed (see my viXra #118) and that we should have only one charged W boson instead of two. We have tentively named the new boson the Feynman.

Now Planck's constant = 41.35 x 10^-22 Mev. We note that 33.91 x 10^3/41.35 x 10^-22 = 0.8200725 x 10^+25. This

reduced to 4 digits is 0.8200 and clearly signals Eugene Wigner's "magic number" 82 and its reversed companion 28 and why we have nickel as the strongest bound element.

The reason why we are now happy with 3 digits for the down neutron quark is that we have realized that we can accurately calculate 5 digits for the mass of the neutron as soon as we know the masses of the proton quarks (4.8 + (2 x 2.3)) = 4.8 + 4.6 = 9.4 x 100 = 940 MeV)) and the 1st 3 digits of the $up_{neutron}$ (3.55). This comes about (see my #89) because **939.56541** is the known mc^2 of the neutron and we can calculate 5-digits 939.56 for it as soon as we know the mc^2 mass 3.55 x 2 = 7.1 MeV of the 2 $up_{neutron}$ quarks X100 = 710 x 10^-4 (**nature's factor)** + 940 - (unused electron = 0.511 MeV of the neutron) = 939.489 + 0.071 = **939.56**. Now 939.56541/939.56 = 1.0000057/1.0000055 = **1.0000001**, a very close fit. By the use of the 10^-4 factor on the 710 MeV $up_{neutron}$ quarks = 0.071 MeV together wth the 940 MeV mass of the 3 proton quarks - 0.511 MeV mass of the electron we get **939.56**: 5-digit neutron mass accuracy immediatly.

We also update this publication following the recent increase of the quantum of the universe by 0.1 GeV caused by the inrease of 0.09 Gev in the mass of the Higgs boson. In all we also have 2 different types of quarks for protons and 2 different types of quarks for neutrons and 1 charm and 1 strange quark for the 80-million-year epoch (20 million years for each of 4 cyclic universes) during which the symmetry of the universes was held unbroken so that important new particles could be introduced, i.e. in this case 4430 MeV Majorana neutrino particles and 5285 MeV dark Majorana neutrinos types that would be impossible to manufacture in our broken symmetry epoch.

The dark matter particle mass of 3552 MeV I introduced in an earlier physics model paper I have realized was too light upon review of my viXra #34 publication, fermion matter mass/dark energy matter mass including dark neutrino mass-energy was measured to be 0.256177 and since the most recent fermion mass was calculated to be 1332.1 MeV (see my flow diagram #93), the dark matter was 1332.1/0.256177 = 5285.8561 or 5285 Mev to **nature's** 4-digit accuracy. This dark matter has Majorana neutrino characteristics, i.e. capability to assume both particle and antiparticle characteristics in the same particle but is too heavy to be the heavy Z(4430) neutrino (see Marjorana fermion, Wikipedia). The 5285 MeV mass dark neutrino like the 4430 MeV non-dark neutrino I believe have both been overlooked, both as neutrinos and Majorana neutrinos until my viXra may 2019 publication (#95) opened the window on the lighter neutrino.

The next subject I wish to address is why did I fail to notice that my dark particle of 3552 MeV was too light? I think it was because **nature** meant 3552 as a very important signal of the mass of the two $up_{neutron}$ quarks (this knowledge together with the knowledge 940 MeV for the mass of the 3 proton quarks immediately gives you 5-digit accuracy for the MeV mass of the neutron) and did not intend 3552 as the mass of an actual particle. Also I made what appears to be an error in both #111 and #123 models of physics viXra notes: I assumed unbroken symmetry epochs of 0.1 billion years when they were actually 0.2 billion years (0.2 for each of 4 cyclic universes = 0.8 billion years, see my flow diagram #93), but for 1/2 of the time the universes were so hot that they had effectively broken symmetry and so 0.1 billion years unbroken symmetry for each cool cyclic universe was correct after all (see my #80).

Continuing on, why has the physics community failed to heed **nature's** strong hints that the heavy Majorana neutrino MHCE8S model is correct. The 1st hint is contained in my viXra publication #47 where the density of matter in the universe was correctly calculated to be too low by a 4-digit factor of 1.355 (8.62/1.355 = 6.3616236 vs, 6.3600743, a ratio of 1.00024. Unfortunately I wrote this note before I realized the importance of 1.355 as a factor of **nature** and so I failed to pick up on this fact. My publication #49 was my 2nd hint: by pointing out the correctness of the holographic method here in 4-digit calculating (**nature's method**) 6.376 vs 6.361 for a ratio = 1.0023 (0.01/4%).

I noticed some peculiar things about the new dark Majorana neutrino of 5285 MeV. If you divide it by 4430 you get 1.1930022 = 1.19 + 3 (4 - digits) which clearly signals the cosmological constant 1.19 and holographic factor 1/3. If you subtract 4430 from 5285 you get 855. Now 855/1.501 = 0.5696 and the strong force (gluon mediated) needs 545.23 MeV (see my #99). Now 5696/5452 = 1.044 (known 4-digit energy factor needed to go from reverse time to forward time).

Continuing on, 5285 - 3552 = 1733 =17 (alerts us to the 171.7 GeV mass of the top quark) and 33 (alerts us to the "quantum of the universe" 33.91 GeV, and 91 in turn alerts us to the mass 91.19 GeV of the Z_{weak} boson. Finally, forward-reverse time is signaled by the mass of this boson. We specially note that we have no signal of a stopped time. Time is either forward or backward but is never stopped in MHCE8S theory.

My next subject is the archaic electron (see my viXra #103). The mass difference between the modern electron and its archaic precusor is 0.511 - 0.5 = 0.011 MeV = 11 x 10^-3 MeV. Now a single ~33 GeV "quantum of the universe = ~33 x

10^3 MeV converts holographically to **1/3** x 33 x **1000** x 10^3 = 11 x 10^6 MeV = 0.011 MeV x 10^9 energy packets. Thus we have sufficient energy to convert 10^9 archaic electrons of 0.5MeV mass into modern electrons of 0.511 MeV mass from each "quantum of the universe".

My next subject concerns Eugene Wigner's "magic number" **20**. If one takes **4x20 = 80 + 83** (bismuth: last psudo stable element of the periodic table), the W boson's 4-digit mass is 80.**38:** I conclude that the W's + and - particles only use (and the big bang also) is as a signal that bismuth is the last element of the periodic table useful to man. The two W bosons plus the Z_{weak} and bottom quark (4 particles again !) all exhibit the reversed digit phenomena which seems to be **nature's way of alerting us.**

My next subject is a rather peculiar one yet it seems to be part of Paul J. Steinhardt's and Neil Turok's cyclic universe theory and Richard Feynman's fine-structure constant alpha.There seems to be a faster sort of photon in existence that I call a cosmophoton. It is the expected 4th gauge boson (see page 1). It was 1st brought to my attention by study of the Y(4140)tetraquark of energy 4140 MeV. If a 40 MeV (signal of 4 cyclic universes of 10 million years unbroken -E8 symmetry) amount is added to the 4140 MeV of the Y(4140)tetraquark we get 4180 MeV which is the mass-energy of the bottom quark. If we reverse 4180 like **nature** has done with the Z_{weak} 91.19 MeV and the 2 charged W's we get **4.108** GeV which is now the 4 - digit x 10^26 M radius of the universe! We had found earlier that the (dimensionless 1/alpha) x velocity of light = 137.035 x 29.9792 cm/s = **4108.19,** and this is **nature's dimensionless 4 -digit signal 4108 for the numerical radius of the universe.**

My next subject is Richard Feynman's mysterious dimensionless fine-structure constant alpha. this constant (in 1/alpha form) is 137.035999139 and (1/alpha) x c (velocity of light = 2.99792458 x 10^8 M/s)= 410.82355 x 10^8 M/s = **4.108** x 10^10 M/s. Consulting Wikipedia, the radius of the observable universe is 4.4 x 10^26 M. Now 4.4/4.108 = 1.071 to **nature's 4-digit accuracy** and 0.071 brings us back to my # 89 viXra publication and its somewhat mysterious constant of 0.071 which makes it possible to calculate the mass of the neutron accurately to 5 digits, i.e. **939.56** vs. the measured value of **939.56541.** Now 939.56541/1.0000055 as we did for the proton we get 939.56024 and this divided by 939.56 = 1.0000002, indicating a very close match with the true mass value of the neutron. Feynman's fine-structure dimensionless constant alpha was sensed by him to be very important but its important connection with cosmology went unrecognized in his lifetime.

Another way the constant 0.071 can be **indicated by nature** is to express all numbers to 4-digit dimensionless accuracy: (Feynman's 1/alpha = 137.0) x (c = 2.997 M/s) = 410.5. Now 4.108 (see above)/4.105 = 1.00073 = 0.073% and again 0.071 is being indicated (to an accuracy of 2.8% now