The Z(4430) Tetraquark Acts Like a Heavy Majorana Neutrino With No Electric Charge

George R. Briggs

Abstract: A chargeless Z(4430) tetraquark acts physically like a ~ 270X heavier tau neutrino.

If we take the mc^2 of the TR tau neutino x 100 x $(1.022148)^2$ = 15.5 x 1.0447865 =1619.419 MeV, we can use this as the TF starting energy for a proton, antiproton pair. Similarly, if we take the 4430 MeV energy of the TF Z(4430) tetraquark and divide by 1.0447865, we can use the energy to form a TR ~ 270X more massive tau neutrino. If we divide again by the 15.5 MeV mc^2 of the tau neutron , we get the dimensionless number 273.55488, We can use this number to more accurately calculate the mc^2 of the neutron. The 27 part of the number undoubtely refers to the 10^27 galaxies of the 8th universe[1]. Unfortunately, this part of the calculation was done incorrectly in my last note.

I next correct the calculation I did just previously for the neutron: Taking 3.55 x 2 +0.00488 = 7.10488 for the mass of $2d_n$ quarks and 0.00488 x 2 = 0.00976 subracted from 2.3 (mass of the u_p quark), one gets 2.29024 for the mass of the u_n quark, and the final more accurate (1.000056) mass of the neutron is 939.512 MeV. Note all masses and energies are carried to 6 decimal places which means that the heavy neutrino and the neutron are products of the 8th (broken symmetry) universe. We also have 2 more quarks (8 in all--There's that number 8 again!)

This all tells us that the Z(4430) tetraquark acts very like a heavy 4430 MeV Majorana[2] neutrino. This means that the

tetraquark is its own antiparticle and has no electric charge. This charge question has not been answered satisfactorily as yet due mostly to neglect of the problem. It also means that the particle is both left- and right- handed (0 net chirality). This is the first time the issue of chirality has entered HCE8S theory. It may eventually force a change in name for the theory to either MajoranaHCE8S (MHCE8S) or HCChiralityE8S (HCCE8S).

Contiuing my study of the number of digits Nature uses to inform us of which of 8 cyclic universes a certain particle was born in, we have shown thus far that the 2 neutronic quarks each require 6 digits indicating the 2 neutronic quarks and associated neutrons first appeared in the latest broken symmetry universe (the 8th). The proton needs only 2 digits for each of its 2 quarks but 6 digits for its value, indicating its 2 quarks appeared in the 2nd cyclic universe but the proton itself not until the 8th (this is supported by my flow diagram which shows the 100X amplified 3-digit (3rd cyclic universe) tau neutrino producing most of the mass-energy later used for the proton).

In addition to the 2-digit proton quarks of the 2nd cyclic universe we notice a 2-digit value for the muon neutrino (probably for metric expansion) and a 2-digit value for the electron neutrino (probably for electromagnetic radiation utilizing the electron particle).

The 1st cyclic universe had only 0.5 MeV electrons of 1-digit type. This also indicated that this universe had unbroken TR E8 symmetry but was followed by a 2nd cyclic universe TF universe of broken E8 symmetry producing electrons of 6-digit type (0.510996 MeV). This was followed by a 3rd cyclic TR universe of unbroken E8 symmetry and producing particles of 2-digit type: then a 4th cyclic TF universe of broken symmetry

producing only 6-digit particles: then a 5th cyclic TR universe of unbroken symmetry producing particles of 3-digit type: then a 6th cyclic TF universe of broken symmetry producing particles of 6-digit type: then a 7th cyclic TR universe of unbroken symmetry producing particles of 4-digit type and finally a 8th cyclic TF universe (our own) which is of broken symmetry and can only produce 6-digit particles. All-in-all, 4 unbroken-broken E8 symmetry universe cycles have occurred and 4 unbroken symmetry and 4 broken symmetry universes have been cyclicly produced. It is important to notice that all 8 universes developed sequentially.

Let us continue: the s quark has 2 digits indicating 3rd unbroken symmetry universe origin and the c quark has 4 digits indicating 5th unbroken symmetry universe origin, i.e. , the 7th universe, that universe just prior to the expected unbroken E8 symmetry 9th, but this last universe has been delayed so we are still in the 8th. This means all recent particles must be of 6-digit type. Thus all 4-digit particles (c, b, but probably not t) originated during the last unbroken symmetry epoch (the 7th universe just prior to our own). The reason the top quark is not included is because its 4-digit type is not definite as of now.

The muon and tauon leptons each have 6 digits or more so they must be of broken symmetry origin, probably recent but not neccessarily so: (the tauon probably a signal notifing us of the LE life energy constant and the muon used in fast universe communication, etc.)

1. George R. Briggs, "The critical fermion density of the universe found from cyclic universe E8 symmetry theory", ViXra 1703.0310, (2017)

2. "Neutrino", Wikipedia, (2018)