

## The Significance of the Charm Quark/Strange Quark $mc^2$ Ratio is Shown For An HCE8S Universe

George R. Briggs

Abstract: It is noticed that the charm quark/strange quark  $mc^2$  ratio is not equal to 13.5 (age of the eighth cyclic universe in billion years but is close to it (13.42). The small difference is now seen to be very important.

Nature apparently<sup>1,2</sup> has a way of alerting us that for 10 million years of each of 8 cyclic universe galaxies cannot exist because they are too hot and dense. As a result during these periods they cannot energize the universe: This verifies indirectly that indeed 8 bouncing cyclic universes have occurred, each having an epoch of 10 million years of unbroken E8 symmetry, for 80 million years total and 54.08 billion years<sup>3</sup> total including our broken E8 symmetry epoch. This finding contradicts my recent suggestion that TR may be a fast sort of time acting only while E8 symmetry is unbroken.

Nature is trying to give us humans even more information: the  $mc^2$  energy of the top quark (for rapid space communication and metric space expansion) via the  $mc^2$  energy of the muon neutrino (0.17 MeV) and the age difference between successive cyclic universes (1.5 billion years) via the  $mc^2$  energy of the tau neutrino (15 MeV) and the age ratio of the universe (13.8 billion years now vs. 13.5 billion years ago at the end of the 9<sup>th</sup> cyclic universe (2.2% older) via the  $mc^2$  energy of the electron neutrino ( $2.2 \times 10^{-3}$  eV).

A peculiar thing is noticed in all this: if the  $mc^2$  energies of the known particles are examined, only those particles with unchanging energy values of 4 digits or less are included if the

entities participated in unbroken E8 symmetry activities (see my flow diagram notes): all entities (except neutrinos) that were engaged with broken E8 symmetry involved uncertain  $mc^2$  energy values having more than 4 digits. These include the proton, the tau lepton, the muon lepton, the W and Z weak particles and the b and t quarks. The Higgs is unclear: my work indicates 125 GeV for the Higgs now, which puts it in the unbroken E8 symmetry classification.

Another peculiarity is noticed: the muon neutrino is given only as 0.17 MeV, rather than its presently known value which should be given as 0.1725 MeV. This value is 1.0147058 larger than 0.17 and happens to be only 1.0000141 larger than  $1.0146914 = 6.5039242/6.4097555$ , the ratio of (my yet unpublished) corrected matter densities of the universe taking account of the lighter proton (1.0072764658 upper calculation) and larger<sup>4</sup> cosmological constant (1.1962789 lower calculation) than I used before!

It appears that Nature is telling us something very important via the dimensionless mass ratios. Nature is also including all the neutrinos and c and s quarks directly and universe age ratios. I have to ponder farther about this.

1. George R. Briggs, "A revised and improved energy flow diagram is shown for an HCE8S universe ", ViXra 1803.0210, (2018)

2. "Quark", Wikipedia, (2017)

3. George R. Briggs, "Thanks to Bekenstein bound holographic phenomena collapse of E8 symmetry cyclic universes can be prevented", ViXra 1708.0484, (2017)

4. George R. Briggs, "Richard Feynman's "magic number" alpha is explained by holographic cyclic E8 symmetric universe theory", ViXra 1710.0341, (2017)