The Role of Charm and Strange Quarks in Holographic Cyclic E8 Symmetric Universe Theory

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Abstract: It is noticed that the sum of the s and c quarks mc^2 = 1370 MeV. 1000X this energy is close to the energy needed per second per active galaxy to energize the universe according to HCE8S theory.

During a recent study of possible uses for the intermediate mass charm and strange quarks[1] in holographic cyclic E8 symmetric theory, I noticed an interesting fact concerning the masses of these particles. Their sum (1370 Mev) is quite close[2] to 1/1000 x 1350.56 GeV per second per active galaxy energy needed to keep our present universe functioning according to HCE8S theory.

In fact, the energy needed of 1350.56 GeV per second is somewhat too small upon utilizing the latest measured mc^2 values for the H, Z and top quarks and remembering that the latest values were posted (by whom!) at a universe age of 13.5 billion years or 300 million years ago, requiring a multiplying factor of 13.8/13.5 = 1.0222222 to be introduced. Taking the top quark latest measured value = 172.51GeV x 12 = 2070.12 – 864.75048 (4 x H+Z = 4 x (125+91.18762 GeV) = 1205.3696 +135.24952 GeV (galaxy annihilation radiation per second) = 1340.6191 x 1.0222222 = 1370.4106 GeV per second for the most accurate value of the energy per second per active galaxy needed. 1/1000 this value = MeV. 1370.4106/1370 = 1.0002997, in agreement to within 0.1%!

This indicates that the intermediate mass family of quarks plays an important role in HCE8S theory. Since the sum of s

and c has the electric charge -1/3 +2/3 = 1/3, we need the anti particle to cancel the charge out. This means that we are looking for a tetraquark of type (c, anti-s, s, anti-c). Unfortunately, if any such exist they must be dark matter and unobservable. Usually, though, an ordinary particle version exists for us to discover. We will have to be patient!

Another very important use for the intermediate family of quarks: their evolution appears to be going backwards in time! Relatively light tetraquark entities are decaying into a much heavier E8 symmetry 8-fold system: Thus Nature has provided entropy with a second way (see my last publication) to decrease with time, thanks to E8 symmetry phenomena!

Also I have noticed that the s particle mc^2 mass is close to 1/10 the mass of the proton, and since it is logical for the proton to be also involved with reverse time I will assume the proton's more accurate value[3] of 93.8272 MeV is meant rather than 95 MeV. Also the most accurate c + s particle value is 1370.4106 MeV. Thus the c particle mc^2 = 1276.5834 MeV and c/s =1276.5834/93.8272 = 13.605685, which is 13.605685/13.5 = 1.0078285 or within 0.8%. Thus the c/s particle mass ratio closely approximates the age (in billions of years) of the universe when it was scheduled to collapse and did not. The intermediate mass charm and strange quarks appear to play very important roles in HCE8S theory along with the proton itself!

1. "Quark", Wikipedia, (2017)

2. "The significance of the holographic and non-holographic versions of the cosmological constant", ViXra 1705.0477, May 2017

3. "Proton", Wikipedia, (2017)