

Improvement of the Accuracy of HCE8S Theory Can be Accomplished Simply Yet Strangely

George R. Briggs

Abstract: In studying the accuracy of HCE8S theory in predicting mc^2 values for the particles, I have made several minor changes which have improved predictions considerably yet in strange ways

We first note that taking 4 digits for QU (33.81GeV) has an interesting consequence. $33.81/8 = 4.22625$, and this multiplied by the TF to TR factor¹ (13.5/13.8 billion year age of the universe ratio)^{1/2} = $4.22625 \times (13.5/13.8)^{1/2} = 4.1800603$ GeV and comparing this value to the (probably correct) published value of 4.180 GeV for the mc^2 of the bottom quark, we get 1.0000144; very close agreement indeed.

Let us next consider the electron; $\frac{1}{2} \times 1.022 = 0.511\text{MeV}$ compared with 0.510998910 latest published value (again see my last publication). We get for $0.511/0.510998910 = 1.0000021$ (very good fit). For $1.02222/2 = 0.51111/0.510998910 = 1.0002174$. The fit is not as good as $1.022/2$. It appears that only when holography appears in the picture (when the square root appears for TF going to TR), 1.022 must be replaced by 1.02222-- for best fit. This indicates that holography only came into the picture when the top/bottom quark flavor appeared.

The next particle we will consider is the muon. As I have shown, its mc^2 energy is now $33.81/32 = 1.0565625 \times 100$ MeV. The fit here is 1.0000199: better than before (1.0000503).

The next particle we will consider is the tauon. Its published mc^2 value is 1776.84 MeV; in HCE8S theory this value has remained unchanged along with the muon. Like the muon its mc^2 has remained greater than 4 digits. This indicates to me that both the muon and tauon (unlike quarks, the QU entity, neutrinos, and probably the electron) have not experienced TR activity. Both particles appear to have been active only in our broken symmetry epoch, i.e. they are associated with furtherance of life.

Next we have the 3 neutrinos. These particles have less-than 3-digit mc^2 energies which are apparently known and unchanging and very revealing as to how the cosmos is designed. The neutrinos apparently also act as if they are traveling backwards in time!

Next, let us consider the c quark energy further. Its mc^2 of 1275 MeV $\times (1.022)^2 = 1331.7183 \times 1000 = 1331.7383$ GeV must be larger than the energy required to disrupt the $ttH + ttZ + tH + tZ$ fermiboson plus antifermiboson 8-entity super symmetric entity form = $12t - 8Z$ (the H particles cancel in supermassive black holes and the Z particles double in number) = 12×171.7 (see below) $- 8 \times 91.19 = 2060.4 - 729.52 = 1330.88$ GeV. Now $1331.74 - 1330.88 = 0.86$ GeV, which we must assume is sufficient to disrupt the supersymmetric entity.

Finally, must consider what the latest mc^2 values for the top and bottom quarks and the significance of the top quark/bottom quark ratio (41.100478) are for understanding the meaning of the dimensionless number inverse α^2 (137.035999139). We note that this number times $c = 2.99792458 = 41.082355$. We also note that the t/b ratio is higher than 41.082355 by only 1.000441. My most recent work

(unpublished) indicates the strong possibility that the top quark is 0.1 GeV lower in mc^2 ; this gives 41.076555 for the t/b ratio, and 1.0001411 for the $c \times$ inverse alpha comparison ratio, a very close fit. The new mc^2 value for the top quark is 171.7 GeV. Note the strange use of the muon neutrino mc^2 prediction (0.17 MeV) twice in what appears to be the correct actual mc^2 energy value for the top quark.

Knowing inverse alpha $\times c$ to high precision (more than 8 digits 41.082355 - -) and relating this number to the radius of the universe ($41.082355 - - \times 10^{25}$ M) at universe age 13.5 billion years, or $1.0222222 \times 41.082355 = 41.995295 \sim 42 \times 10^{25}$ M for the radius today, we note that using HCE8S theory makes it possible to predict this very important radius number, which has otherwise been impossible to date (see Wikipedia article "universe").

1. George R. Briggs, "A simpler yet more revealing HCE8S flow diagram", ViXra 1804.0488, (2018)

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