The Dimensionless Constant 273.55488 Indicates That Two New Quark Types Exist For Neutrons

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Abstract: The mysterious dimensionless constant 273.55488 signals that two new up and down quarks exist which accurately form neutrons: this makes 8 types of quark in all

The dimensionless constant 273.55488 has been known[1] for some time and more recently has been found to play an important role in determining the mass of the neutron. I used[2] the constant to calculate the masses of two new up and down quarks. However more recently I have found a simpler and more accurate way to calculate the two new quark masses and arrive at a more accurate value for the mass of the neutron.

I start with the 0.00488 part of the constant and subtract it from the 3.55 part of the constant to get 3.54512. This is the new down quark d_n for the neutron. I next multiply 0.00488 by 1.0447865 to get 0.005098558. I then add this to the 2.3 MeV u_p quark mass of the proton to get a new u_n for the neutron of 2.305098 MeV. I next calculate the mass of the neutron. This is 2 x 3.54512 = 7.09024 + 2.305098 = X100 = 939.5338. Now **939.56541 MeV** is the known mc^2 of the neutron: dividing by **1.0000055** which is customary we get 939.56024and939.56024/939.5338 = 1.0000289, the best yet.

1. George R. Briggs,"Improvement of the accuracy of HCE8S theory thanks to the Z(4430) tetraquark", ViXra 1807.0147, (2018)
2. George R. Briggs,"The mass of the neutron reviewed: the role of two new quarks instead of one", ViXra 1902.0498, (2019)