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Below are the predicted quark data of the harmonic neutron hypothesis from 2013 compared to the experimental data of 2014. It shows that the 2013 predictions were all very accurate except for the strange quark. This error was a principal quantum number assignment error of using 3 times 10 for a quantum fraction of 29/30, instead of 3 times 9 for the quantum fraction 27/28 for the strange quark.

If the model is numerology then the predictions should not be accurate or logical. If one analyzes the hypothesis the predictions are sound and logical. If the model were numerology none of the quarks would fall on any of the predicted lines or quantum fractions values.

There are three restrictive criteria that need to be fulfilled simultaneously in the model. First all constants must be related to the annihilation frequency of the neutron raised to integer harmonic fractions. The δs have to be defined by a natural unit δ line which is defined by only three properties of hydrogen. In this case one of the lines is xaxis*-bem+bem. Next the only possible higher order principal quantum numbers are products of the lower order generation entities.

The model states that the quarks will fall on lines with unit slopes of –bem and y intercepts are unit values of bem. This is related to the reciprocal slope of the ionization energy hydrogen δ line. The principal quantum number of R is 3,and the quantum fractions of ±1/3, ±2/3 and 4/3. This is logical since the quarks are associated with charges of 1/3 and 2/3 and have many integer physical property dualities related to the number 3. The paper from 2009 actually plotted the points related to the quarks with masses greater than the neutron so this is a fulfilled prediction.

The principal quantum numbers of the other quarks have to be related to the integers 3 for R, 9/10 for the up quark, and 10/11 for the down quark. The model states that the other generations of quarks must be products of these lower principal quantum numbers 3, 9, 10, 11. These products are 27, 30, 33 and 110. Therefore the only possible quantum fractions for the quarks are listed below. There are 24 possibilities. The actual known quark quantum fractions are shown in bold. The hypothesis is confirmed since of these 24 possibilities all six quarks are associated with one of these quantum fractions and simultaneously fall on unit –bem slope lines. These predictions are not an infinite possibility “shotgun” approach, but highly restricted. The must be a logical reason for these specific quantum fractions that do exist, but it is not apparent at this time.

8/9 or 10/9

9/10 or **11/10** up and top

10/11 or 12/11 down

27/28 or 29/28 strange

28/29 or 30/29

29/30 or 31/30

30/31 or 32/31

31/32 or **33/32** bottom

32/33 or 34/33

33/34 or 35/34

109/110 or 111/110

108/109 or **110/109** charm

Table 5

quark	2013 experimental data	2014 experimental data	2013 predictions	2014 predictions
up (u)	1.7-3.1 $\times 10^6$ eV/c^2	$2.3^{+.7}_{-.5}$ $\times 10^6$ eV/c^2	2.35 $\times 10^6$ eV/c^2	2.3509679 $\times 10^6$ eV/c^2
down (d)	4.1-5.7 $\times 10^6$ eV/c^2	$4.8^{+.5}_{-.3}$ $\times 10^6$ eV/c^2	4.7 $\times 10^6$ eV/c^2	4.7176309 $\times 10^6$ eV/c^2
strange (s)	100^{+30}_{-20} $\times 10^6$ eV/c^2	95^{+5}_{-5} $\times 10^6$ eV/c^2	106.6 $\times 10^6$ eV/c^2	93.707502 $\times 10^6$ eV/c^2
charm (c)	1290^{+50}_{-100} $\times 10^6$ eV/c^2	1275^{+25}_{-25} $\times 10^6$ eV/c^2	1280 $\times 10^6$ eV/c^2	1280.3435 $\times 10^6$ eV/c^2
bottom (b)	4190^{+180}_{-60} $\times 10^6$ eV/c^2	4180^{+30}_{-30} $\times 10^6$ eV/c^2	4214 $\times 10^6$ eV/c^2	4214.1930 $\times 10^6$ eV/c^2
top (t)	$172.9^{+1.5}_{-1.5}$ $\times 10^9$ eV/c^2	$173.5^{\pm.6}_{\pm.8}$ $\times 10^9$ eV/c^2	172.2 $\times 10^9$ eV/c^2	172.19010 $\times 10^9$ eV/c^2

Table 5 lists the experimental data from 2013, experimental data from 2014, the predictions from 2013, and the high resolution predictions from 2014. All of the predictions/ derivations are essentially within the known ranges. The only prediction at was inaccurate in 2013 was the strange quark since the qf of

29/30 was used instead of 27/28. Now utilizing this qf it generates an accurate prediction. All of the derived values have a relative error of approximately 5 x 10^{-8}.

Table 6

quark , qf , 1/n	x 10^6 eV/c^2	exponent	upper δ_k x 10^{-3} lower δ_k x 10^{-3} δ_d x 10^{-3}	Hz
up (u) 9/10, -1/10				
upper bound	3.0	0.89314245	-6.8575525	7.2539680 x 10^{20}
lower bound	1.8	0.88364403	-16.355974	4.3523808 x 10^{20}
predicted	2.3509679	0.88860944	-11.390556	5.6846153 x 10^{20}
down (d), 10/11, -1/11				
upper bound	5.5	0.90441309	-4.6778186	1.3298941 x 10^{21}
lower bound	4.5	0.90068177	-8.4091405	1.0880952 x 10^{21}
predicted	4.7176309	0.90155996	-7.5309461	1.1407181 x 10^{21}
strange (s), 27/28, -1/28				
upper bound	100	0.95834427	-5.9414395	2.4179893 x 10^{22}
lower bound	90	0.95638517	-7.9005397	2.1761904 x 10^{22}
predicted	93.707502	0.95713580	-7.1499161	2.2658374 x 10^{22}
charm (c), 110/109, +1/109				
upper bound	1300	1.0060376	-3.1367180	3.1433861 x 10^{23}
lower bound	1250	1.0053083	-3.8659979	3.0224867 x 10^{23}
predicted	1280.3435	1.0057543	-3.4200168	3.0958571 x 10^{23}
bottom (b), 33/32, +1/32				

upper bound	4210	1.0278877	-3.3623286	1.0179735×10^{24}
lower bound	4150	1.0276208	-3.6292363	1.0034656×10^{24}
predicted	4214.1930	1.0279062	-3.3438185	1.0189874×10^{24}
top (t), 11/10, +1/10				
upper bound	174.9×10^{3}	1.0971838	-2.8161612	4.2290634×10^{25}
lower bound	172.1×10^{3}	1.0968837	-3.1162479	4.1613597×10^{25}
predicted	172.19010×10^{3}	1.0968935	-3.1065153	4.1635384×10^{25}

Table 6 lists the upper and lower ranges of the experimental quarks and the predicted values in eV/c^2, exponents, δ, and frequency equivalent Hz. All of the derived values have a relative error of approximately 5×10^{-8}. The known experimental are labeled δ_k, and the derived as δ_k.