Integral charge SUSY in Strong nuclear gravity

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Integral charge quark SUSY

Till today there is no reason for the question: why there exists 6 individual quarks? Till today no experiment reported a free fractional charge quark. Authors humble opinion is nuclear charge (either positive or negative) constitutes 6 different flavors and each flavor holds certain mass. charged flavor can be called as a quark. It is neither a fermion nor a boson. A fermion is a container for different charges, a charge is a container for different flavors and each flavor is a container for certain matter. If charged matter rests in a fermionic container it is a fermion and if charged matter rests in a bosonic container it is a boson. The fundamental questions to be answered are : what is a charge? why and how opposite charges attracts each other? why and how there exists a fermion? and why and how there exists a boson? Here interesting thing is that if 6 flavors are existing with 6 different masses then a single charge can have one or two or more flavors simultaneously. Since charge is a common property, mass of the multiple flavor charge seems to be the geometric mean of the mass of each flavor. If charge with flavor is called as a quark then charge with multi flavors can be called as a hybrid quark. Hybrid quark generates a multi flavor baryon. It is a property of strong interaction space - time - charge. This is just like different tastes or different smells of matter. Important consequence of this idea is that- for generating a baryon there is no need to couple 3 fractional charge quarks.

In integral charge quark system, if Q_f and Q_b are the rest masses of quark fermion and quark boson, $Q_b \cong \frac{Q_f}{\Psi}$ where $\Psi \cong 2.26$. Interesting thing is that $Q_{ef} \cong \left(1 - \frac{1}{\Psi}\right) Q_f$ acts as the effective quark fermion. Due to strong interaction there is a chance of coupling any two quark bosons. If any two oppositely charged quark bosons couples together then a neutral quark boson can be generated. It may be called as a neutral meson. Due to strong interaction by any chance if any quark boson couples with any quark fermion then a neutral baryon or baryon with $\pm 2e$ can be generated. This idea is very similar to the 'photon absorption by electron'. When a weakly interacting electron is able to absorb a boson, in strong interaction it is certainly possible. More over if a baryon couples with two or three quark bosons then the baryon mass increases and charge also changes. Here also if the system follows the principle 'unlike charges attracts each other' in most of the cases baryon charge changes from $\pm e$ to neutral and neutral to $\pm e$. Doublets and triplets can be understood in this way. If $m_x c^2$ is the ground state energy level, n =1,2,3.. and $I = n(n+1)$, fine rotational levels are $[I]^{\frac{1}{4}}\, m_x c^2$ and $\left[\frac{I}{2}\right]^{\frac{1}{4}} m_x c^2$. Super fine rotational levels are $[I]^{\frac{1}{12}}\, m_x c^2$ and $\left[\frac{I}{2}\right]^{\frac{1}{12}} m_x c^2$.

Quark SUSY and Higgs SUSY in strong nuclear gravity

1. In mole number of particles, strength of gravity is $(N.G)$. Similar to the classical force limit $\frac{c^4}{G}$, force required to bind mole particles $= \frac{c^4}{(NG)}$. Force required to bind one particle is $\frac{1}{N} \cdot \frac{c^4}{N.G} \cong F_W$.

2. Considering the rest mass of electron, its gravitational mass generator $= X_E \cong m_e c^2 \div \sqrt{\frac{e^2}{4\pi\varepsilon_0}\left(\frac{c^4}{N^2 G}\right)} \cong 295.0606338.$

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Using this number, tau and muon masses can be fitted. Weak coupling angle is $\sin\theta_W \cong \frac{1}{\alpha X_E} \cong 0.464433353 \cong \frac{\text{Up quark mass}}{\text{Down quark mass}}$. $X_S \cong \ln\left(X_E^2\sqrt{\alpha}\right) \cong 8.91424 \cong \frac{1}{\alpha_s}$ can be considered as 'inverse of the strong coupling constant'.

3. There exists a strongly interacting confined fermion of rest energy $M_{Sf}c^2 \cong 105.3226825$ MeV. Its boson rest energy can be expressed as $M_{Sb}c^2 \cong \frac{M_{Sf}c^2}{\Psi} \cong 46.6$ MeV where $\Psi \approx 2.26$ is the fermion and boson mass ratio. In SUSY, $m_e \cong \alpha.\sqrt{M_{Sf}.M_{Sb}} \cong \alpha.\sqrt{M_{Sf}.\left(\frac{M_{Sf}}{\Psi}\right)}$. In this way value of $\Psi \cong 2.262218404$ is fitted. $\frac{M_{Sf}}{m_e} \cong \ln\left(\frac{\hbar c}{G m_e^2}\right)^2 \cong 206.1113643$.

4. Characteristic nuclear fermion is $X_S.M_{Sf}c^2 \cong 938.8716604$ MeV and its corresponding nuclear boson is $M_{Sb}c^2 \cong \frac{X_S M_{Sf}c^2}{\Psi} \cong \frac{938.8716604}{\Psi} \cong 415.0225543$ MeV. This boson is the mother of presently believed strange mesons like 493, 548, 1020 MeV etc.

5. There exists Higgs charged fermion of rest energy $M_{Hf}c^2 \cong 103125.417$ MeV. Its corresponding Higgs charged boson rest energy is $M_{Hb}c^2 \cong \frac{M_{Hf}c^2}{\Psi} \cong 45585.97\ MeV$. With reference to Beta decay, it is noticed that $\frac{m_e c^2}{F_W R_0} \cong \frac{M_{Hf}}{m_e} \cong \frac{1}{2}\left(\frac{m_e^2 c^4}{\hbar c F_W}\right)^2$. Higgs charged boson pair generates the electro weak neutral Z boson. Top quark boson is nothing but the SUSY electroweak W boson. Higgs charged boson and W boson couples together to form a neutral boson of rest energy 126 GeV. W boson pair generates a neutral boson of rest energy 161 GeV.

6. Relation between electron rest mass and up quark rest mass can be expressed as $\frac{Uc^2}{m_e c^2} \cong \left[\frac{m_e^2 c^4}{\hbar c F_W}\right]^{\frac{1}{3}} \cong 8.596650881 \cong e^{\alpha X_E}$. Relation between up quark and down quark rest masses is $\frac{Dc^2}{Uc^2} \cong \ln\left[\frac{Uc^2}{m_e c^2}\right] \cong 2.151372695 \cong \alpha X_E$. Up, strange and bottom quarks are in first geometric series and Down, charm and top quarks are in second geometric series. USB geometric ratio is $g_U \cong \left[\frac{D}{U} \cdot \frac{D+U}{D-U}\right]^2 \cong \left[\alpha X_E \cdot \frac{\alpha X_E+1}{\alpha X_E-1}\right]^2 \cong 34.66$ and DCT geometric ratio is $g_D \cong \left[2 \cdot \frac{D}{U} \cdot \frac{D+U}{D-U}\right]^2 \cong \left[2 \cdot \alpha X_E \cdot \frac{\alpha X_E+1}{\alpha X_E-1}\right]^2 \cong 138.64 \cong 4r_U$.

7. Quark baryon rest energy $= Q_F c^2 \cong \frac{\sin\theta_W}{2}\left[M_{Hf}^2 \times Q_f\right]^{\frac{1}{3}} c^2$ and Quark meson rest energy $= Q_B c^2 \cong \frac{\sin\theta_W}{2}\left[M_{Hb}^2 \times Q_b\right]^{\frac{1}{3}} c^2$. Accuracy point of view $\frac{\sin\theta_W}{2}$ can be replaced with $\frac{1}{2\alpha(X_E+1)}$. Effective quark baryon rest energy $= Q_E c^2 \cong \frac{\sin\theta_W}{2}\left[M_{Hf}^2 \times Q_{ef}\right]^{\frac{1}{3}} c^2$. These effective quark baryons play a vital role in fitting the unstable baryon masses. Quark meson masses play a vital role in fitting the unstable meson masses. Charged ground state baryon rest energy is close to $\left(Q_{E1}Q_{E2}\right)^{\frac{1}{2}} c^2$ or $\left(Q_{E1}Q_{E2}^2\right)^{\frac{1}{3}} c^2$ or $\left(Q_{E1}Q_{E2}Q_{E3}\right)^{\frac{1}{3}} c^2$ where Q_{E1}, Q_{E2}, and Q_{E3} represents any three effective quark baryons. Neutral ground state meson rest energy is close to $\left(Q_{B1}+Q_{B2}\right)c^2$ where Q_{B1} and Q_{B2} represents any two quark mesons.

8. Rest energy of nucleon is close to $\left(\frac{2U_F D_F}{U_F+D_F}\right)c^2 \cong 940.02$ MeV and nucleon rest energy difference is close to $\left(m_n - m_p\right)c^2 \cong \sin^2\theta_W \cdot \left(\frac{2U_f D_f}{U_f+D_f}\right)c^2 \cong 1.29623$ MeV.

References

[] SUSY and strong nuclear gravity in (120-160) GeV mass range. Hadronic journal, Vol-34, No 3, 2011 June, p277-300