An Unifying Equation for Almost All Constituent Quarks Masses, of Cold and Hot Genesis

Dr. Eng. Arghirescu Marius
State Office of Inventions and Trademarks, OSIM, Bucharest, Romania

Abstract

Based on a Cold Genesis pre-quantum theory of particles and fields, (C.G.T.), based on Galilean relativity, which explains the constituent quarks and the resulted elementary particles as clusters of negatron-positron pairs ($\gamma(e^-e^+)$) forming basic z^0 -preons of ~34 me representing the CGT's prediction for the subsequent discovered boson X17, which generate preonic bosons $z_2(4z^0)$ and $z_\pi(7z^0)$ and constituent quarks in a preonic model, from two equations, one for the preonic quarks (u, d, s) and another for the heavy quarks (c-charm and b-bottom), a single unitary equation is obtained for the both mass variants: CGT/Souza and Standard Model, by using four parameters representing integer numbers from 0 to 3: $(k_1 ; k_2) \leq 3$ (for the number of z_2- and z_π- preonic bosons); f = (1;2)- flavor number; n = (1÷4) –compositeness number, and a multiplication factor depending on n, n=4 giving a predicted quark, of mass ~15 GeV/c^2.

$$M_q(q_n^f) = 3^{n-1}\left\{[M_{1,2}+k_1\cdot z_\pi + k_2\cdot(k_1-2)\cdot z_2 - z^0(2-f)] - [\beta(2-f) + \frac{z^0}{3}\ln\frac{3^{(2n-3)}}{3^{(2-f)(3n-5)}}]\cdot\left|2n-1-2^{(n-1)}\right|\right\};$$

$$M_{1,2} = M(m_1^+;m_2^-);\ \ k_1 = 0\div3;\ k_2 = 0\div2<k_1;\ f=(1;2);\ n=1 \text{ if } (k_1+k_2)<5;\ n=(1\div4) \text{ if } (k_1+k_2)=5$$

($M_{1;2}$ =69.5 MeV/c^2 ≈$(1/\alpha)m_e$; β =37.63 MeV/c^2, $m_{1;2}$ –mesonic quark; $M(u/d)c^2$ ≈ 313MeV.
For S.M.'s variant, f = 1, and it is applicable only for k_1 >2; i.e.: f = 1; n = 1, k_1 = 3,
k_2 = 1, $\rightarrow M(s^\cdot)c^2$ ≈ 0.486 GeV; n = 2 $\rightarrow M(c^\cdot)c^2$ = 1.557 GeV; n = 3 $\rightarrow M(b^\cdot)c^2$ = 4.728 GeV.