

Abstract Submitted
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The Checkerboard Model of the Nucleus THEODORE LACH, Retired — The Lach Checker Board Model (CBM) of the nucleus and the associated ESM predicts that nature has 5 generations of quarks not 3. The heaviest generation in the Extended Standard Model (ESM) has a t' quark of mass 65 GeV and a b' quark of 42.4 GeV. The lepton in this generation has a mass of 27 GeV. Part of this theory evolved because it appears that the quarks and lepton of each generation have masses related by the geometric mean. The Geometric mean of 65 and 27 is 42. Charge is conserved (+2/3 and -1 is -1/3). Details of how this theory evolved is found on my web site (<http://checkerboard.dnsalias.net>) or in the following references [T.M. Lach, Checkerboard Structure of the Nucleus, Infinite Energy, Vol. 5, issue 30, (2000); T.M. Lach, Masses of the Sub-Nuclear Particles, nucl-th/0008026, @<http://xxx.lanl.gov/>] One independent check of this CB model is that the wavelength of the “up” quark orbiting inside the proton at 84.8123% the speed of light around the “dn” quark in the center turns out to be exactly one DeBroglie wavelength. This explains the mass of the proton and neutron and their magnetic moments. This along with the beautiful symmetric 2D structure of the He nucleus led to the evolution of this theory. One would expect a t'-anti t' meson of mass of about 130 GeV.

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