

Abstract Submitted
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The Checkerboard Model of the Nucleus THEODORE LACH, Retired — The Checker Board Model (CBM) of the nucleus and the associated extended standard model predicts that nature has 5 generations of quarks not 3 and that Nucleus is 2 dimensional. The CBM theory began with an insight into the structure of the He nucleus around the year 1989. Details of how this theory evolved which took many years, and 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 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 of the proton) turns out to be exactly one de Broglie wavelength something determined after the mass and speed of the up quark were determined by other means. This theory explains the mass of the proton and neutron and their magnetic moments and this along with the beautiful symmetric 2D structure of the He nucleus led to the evolution of this theory. When this theory was first presented at Argonne in 1996, it was the first time that anyone had predicted the quarks orbited inside the proton at relativistic speeds and it was met with skepticism.

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