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Discrete Rotational Subgroups of the Standard Model dictate Family Symmetries and Masses

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Family symmetries of leptons and quarks are expressions of specific discrete rotational subgroups of the Standard Model gauge group. Their discrete symmetry properties include elliptic modular functions and the invariant J from which one predicts mass ratios, without any need for a Higgs. The family hierarchies, the origin of baryon number, and exact color symmetry are explained. The geometric properties dictate 3 lepton families and 4 quark families and the unique unification of the fundamental interactions in 4-D spacetime as well as in 10-D spacetime with the discrete group Weyl E8 x Weyl E8. The 4th quark family predicted masses are: b' quark state at ˜80 GeV and t' quark at ˜2600 GeV!

(1) "Unification of Interactions in Discrete Spacetime", www.ptep-online.com/index_files/2006/PP-04-01.PDF
(2) "Geometrical Basis for the Standard Model", Int. J. of Theor. Phys., 33 (1994), pp. 279-305 or www.sciencegems.com/gbsm.html]

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