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Lepton Private Higgs and the discrete group \Sigma(81)

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Abstract:

We embed a (modified) Private Higgs model for leptons into a flavor group \Sigma(81) = (Z_3 x Z_3 x Z_3)\rtimes Z_3. This suggests a relation among the off-diagonal entries of the neutrino mass matrix and explains the muon magnetic moment anomaly, a_\muˆexp-a_\muˆSM ˜ 10ˆ{-9}. We predict three new nearly degenerate Higgs doublets with masses of order ˜500 GeV to ˜ 1 TeV, and three nearly degenerate SM-singlet TeV-scale neutrinos. The largest scale in the model is ˜10 TeV, so there is no severe hierarchy problem. We conclude by discussing the possibility of extending the model to the quark sector.

Author: BENTOV, Yoni (U)

Co-author: ZEE, A. (UCSB, KITP)

Presenter: BENTOV, Yoni (U)

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