Icosahedral (A_5) Family Symmetry and the Golden Ratio Prediction for Solar Neutrino Mixing

Tuesday 28 July 2009 15:00 (15 minutes)

I investigate the possibility of using icosahedral symmetry as a family symmetry group in the lepton sector, focusing on the intriguing hypothesis that the solar neutrino mixing angle is governed by the golden ratio. I will present a basic toolbox for model-building using icosahedral symmetry, including explicit representation matrices and tensor product rules. As a simple application, I will construct a minimal model at tree level in which the solar angle is related to the golden ratio, the atmospheric angle is maximal, and the reactor angle vanishes to leading order.

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