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Ordered anarchy from a 5D SO(10)

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mechanism to generate flavour hierarchy via 5D wave-function localization is revisited in the context of SO(10) grand unified theory. An extra-dimension compactified on an orbifold together with SO(10) breaking generates different zero-mode profiles for fermions of different charges. Utilizing suitable scalar fields, a predictive model for fermion masses and mixing is constructed and shown to be viable with the current data through a detailed numerical analysis. All the Yukawa couplings in the model are of order unity while the hierarchies among different fermions result from wave-function profiles. The naturalness of Anarchical Yukawa couplings is studied and the predictions for various observables in the lepton sector are also derived. The scalar field content of the model is suitable to solve the doublet-triplet splitting problem through missing partner mechanism.

Based on work done with F.Feruglio, K.Patel, D.Vicino

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Classification de Session: Poster presentation