27th International Conference on Supersymmetry and Unification of Fundamental Interactions (SUSY2019)

Contribution ID: **244** Type: **Oral**

Natural Neutrino Masses and Mixing Angles in an Intersecting D-brane World

Wednesday, 22 May 2019 16:20 (20 minutes)

The correct quark and charged lepton mass matrices along with a nearly correct CKM matrix may be naturally accomodated in a Pati-Salam model constructed from intersecting D6 branes on a $T^6/(Z_2 \times Z_2)$ orientifold. Furthermore, near-tribimaximal mixing for neutrinos may arise naturally due to the structure of the Yukawa matrices in the model. Consistency with the quark and charged lepton mass matrices in combination with obtaining near-tribimaximal mixing fixes the Dirac neutrino matrix completetly. Then,applying the seesaw mechanism for different choices of right-handed neutrino masses and running the obtained neutrino parameters down to the electroweak scale via the Renormalization Group Equations (RGEs), we are able to make generic predictions for the neutrino masses and mixing angles.We find that the neutrino masses are normal ordered (NO) with $\Delta m^2_{32} \approx 0.0025$ eV^2,$\Delta m^2_{21} \approx 0.000077$ eV^2, and $\sum m_\nu \approx 0.088$ eV consistent with experimental observations and cosmological constraints. Finally, we also obtain neutrino mixing angles which are consistent with observations.

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Session Classification: Neutrinos: Models, Phenomenology, Experiments

Track Classification: Neutrinos: Models, Phenomenology, Experiments