Contribution ID: **153** Type: **Poster**

Single source for Neutrino and Quark Mixing

Tuesday, 18 June 2024 17:30 (2 hours)

In our model, all the CKM mixing of the quarks and MNS mixing of the leptons has one source, namely a mixing of the fermions of the Standard Model with a set of vector-like fermions in the context of SU(5) grand unification. Because the mixing of the 5 bar multiplets can be described by a single 3x3 matrix, a highly predictive model result. We showed that the 9 mass and mixing parameters of the neutrinos can be determined in terms of just 5 free parameters of the model. This leads to predictions of the Dirac CP phase of the neutrinos, the mass of the lightest neutrino and the two Majorana neutrino phases.

In this work, simple approximate analytical formulas for the predictions of the model are derived. So that as new measurements are made, revised predictions can easily be extracted. This would allow one to determine which measurements would best test the model without doing the entire global numerical fit over again. About the phenomenology of vector-like fermions, for the models involve the existence of new vector-like fermion multiplets, if these have masses near the weak scale, their phenomenology is worth investigating.

Poster prize

No

Given name

Heng-Yu

Surname

Chen

First affiliation

Trinity Christian College

Second affiliation

Gender

Male

Collaboration (if any)

Institutional email

hychen4250@gmail.com

Primary author: CHEN, Heng-Yu

Presenter: CHEN, Heng-Yu

Session Classification: Poster session and reception 1

Track Classification: Theory of neutrino masses and mixing, Leptogenesis