Contribution ID : **101** Type : **not specified**

Tri-bimaximal neutrino mixing and CKM matrix from finite group family symmetry in SU(5) GUT

Friday, 10 October 2008 18:30 (0:45)

Abstract content

We propose a model based on $SU(5) \times {}^{(d)}T$ which successfully gives rise to near tri-bimaximal leptonic mixing as well as realistic CKM matrix elements for the quarks. The Georgi-Jarlskog relations for three generations are also obtained. There are only nine operators allowed in the Yukawa sector up to at least mass dimension seven due to an additional $Z_{12} \times Z'_{12}$ symmetry, which also forbids, up to some high orders, operators that lead to proton decay. The resulting model has a total of $\sim \theta_c/3 \sqrt{2}$, the model gives rise to a sum rule, $\tan^2\theta_\odot \simeq \tan^2 \theta_{\odot, \mathrm{TBM}} - \frac{1}{2} \theta_c \cos\beta$, which is a consequence of the Georgi-Jarlskog relations in the quark sector. This deviation could account for the difference between the experimental best fit value for the solar mixing angle and the value predicted by the tri-bimaximal mixing matrix.

Summary

Primary author(s) : CHEN, Mu-Chun (UC Irvine)

Presenter(s) : CHEN, Mu-Chun (UC Irvine)

Session Classification : Beyond SM