

Documents

Benaoum, H.B.

Nonzero θ_{13} from the triangular ansatz and leptogenesis

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Abstract

Recent experiments indicate a departure from the exact tri-bimaximal mixing by measuring a definitive nonzero value of θ_{13} . Within the framework of type I seesaw mechanism, we reconstruct the triangular Dirac neutrino mass matrix from the $\mu - \tau$ symmetric mass matrix. The deviation from $\mu - \tau$ symmetry is then parametrized by adding dimensionless parameters y_i in the triangular mass matrix. In this parametrization of the neutrino mass matrix, the nonzero value θ_{13} is controlled by $\Delta y = y_4 - y_6$. We also calculate the resulting leptogenesis and show that the triangular texture can generate the observed baryon asymmetry in the universe via leptogenesis scenario. © 2012 World Scientific Publishing Company.

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