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Neutrino masses, mixings and leptogenesis using A_4 modular symmetry

We have studied neutrino masses and mixings by adding a scalar triplet η to the particle content of minimal inverse seesaw. In order to realize this extension of minimal inverse seesaw we implement an isomorphic modular group $\Gamma(3)$ and a non-abelian discrete symmetry group A_4 . The use of modular symmetry in our work helps us to reduce the number of flavons. We have also used Z_3 symmetry group in our work. We find that a sufficient parameter space for both the hierarchies is found to lie within the allowed range as given by various experiments and observations. In order to examine the validity of our model with various experimental constraints, we have calculated neutrino masses and mixings, baryogenesis via leptogenesis. Finally, we find that the model is successful in producing the neutrino parameters in the 3σ range.

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