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Inverse seesaw in modular S_3 symmetry

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In describing a model many kinds of symmetries are made to involve, helping us to investigate neutrino phenomenology. In this paper, we explore a very simple permutation group i.e. S_3 to get neutrino mass and mixing in the inverse seesaw framework. To avoid certain drawbacks of the traditional discrete symmetries we introduce their modular forms. Here, the Yukawa couplings transforms under modular symmetry and are expressed in-terms of the Dedekind eta function. Hence the work of the flavon fields are now carried by the modular Yukawa couplings reducing their usage. By doing so, we hope to make clear the impact and importance of modular S_3 symmetry, which is taken into account when explaining neutrino mixing consistent with the most recent findings. We also examine the non-zero reactor mixing angle and make an effort to adjust the model parameters properly. Finally, we briefly discuss muon $(g-2)$ in our model explaining the current results.

Session

Neutrino Physics

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