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Title:	Discrete symmetries for electroweak natural type-I seesaw mechanism
Authors:	Chattopadhyay, Pratik (/jspui/browse?type=author&value=Chattopadhyay%2C+Pratik) Patel, K.M. (/jspui/browse?type=author&value=Patel%2C+K.M.)
Keywords:	symmetries electroweak natural type-I
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Abstract:	The naturalness of electroweak scale in the models of type-I seesaw mechanism with Yukawa couplings requires TeV scale masses for the fermion singlets. In this case, the tiny neutrino masses have to arise from the cancellations within the seesaw formula which are arranged by fine-tuned correlations between the Yukawa couplings and the masses of fermion singlets. We motivate such correlations through the framework of discrete symmetries. In the case of three Majorana fermion singlets, it is shown that the exact cancellation arranged by the discrete symmetries in seesaw formula necessarily leads to two mass degenerate fermion singlets. The remaining fermion singlet decouples completely from the standard model. We provide two candidate models based on the groups and and discuss the generic perturbations to this approach which can lead to the viable neutrino masses.
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