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Title:	The scalar triplet contribution to lepton flavour violation and neutrinoless double beta decay in Left-Right Symmetric Model
Authors:	Mitra, Manimala (/jspui/browse?type=author&value=Mitra%2C+Manimala)
Keywords:	Beyond Standard Model Higgs Physics Neutrino Physics
Issue Date:	2016
Publisher:	Springer Verlag
Citation:	Journal of High Energy Physics, 2016(4).
Abstract:	We analyse in detail the scalar triplet contribution to the low-energy lepton flavour violating (LFV) and lepton number violating (LNV) processes within a TeV-scale left-right symmetric framework. We show that in both type-I and type-II seesaw dominance for the light neutrino masses, the triplet of mass comparable to or smaller than the largest right-handed neutrino mass scale can give sizeable contribution to the LFV processes, except in the quasi-degenerate limit of light neutrino masses, where a suppression can occur due to cancellations. In particular, a moderate value of the heaviest neutrino to scalar triplet mass ratio $r \lesssim 1$ is still experimentally allowed and can be explored in the future LFV experiments. Similarly, the contribution of a relatively light triplet to the LNV process of neutrinoless double beta decay could be significant, disavouring a part of the model parameter space otherwise allowed by LFV constraints. Nevertheless, we find regions of parameter space consistent with both LFV and LNV searches, for which the values of the total effective neutrino mass can be accessible to the next generation ton-scale experiments. Such light triplets can also be directly searched for at the LHC, thus providing a complementary probe of this scenario. Finally, we also study the implications of the triplet contribution for the left-right symmetric model interpretation of the recent diboson anomaly at the LHC.
Description:	Only IISERM authors are available in the record.
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