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Beyond Standard Model scales constrained by recent double beta decay experimental data

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Neutrinoless double-beta decay, if observed, would signal physics beyond the Standard Model (BSM). In particular, neutrinoless double-beta decay offers the possibility to test BSM theories that predict that neutrinos are Majorana fermions and that the lepton number conservation is violated. We investigate the contribution of possible extensions to the Standard Model Lagrangian that could contribute to the neutrinoless double beta process, and we establish limits on the associated couplings. From these limits we extract limits on the energy scales for different terms contributing to the BSM effective Lagrangian, and we compare with those extracted from other data.

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