

Lepton number violation in future lepton colliders and neutrinoless double beta decay

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We investigate the origin of neutrino masses, focusing on theoretical models in which neutrinos are massive Majorana fermions.

Such neutrinos naturally lead to processes that violate the lepton number which is strictly conserved in the Standard Model.

We discuss the current constraints on such models from lepton number violating processes, such as neutrinoless double beta decays.

Especially, we consider a model extended by right-handed neutrinos with the seesaw mechanism, and discuss the impacts on the lepton number violating search for right-handed neutrinos in future lepton collider experiments.

The lepton number violating processes provide crucial insight into the fundamental nature of neutrinos and offer potential signatures of physics beyond the Standard Model.

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