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Testing Neutrino Physics with Colliders

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The Majorana nature of neutrinos can be experimentally verified only via lepton-number violating processes involving charged leptons. The unambiguous signal of Majorana neutrinos can be probed in many low energy experiments such as study of beta decay spectra, accelerator based experiments such as decays of taus and mesons and collider experiments with direct production and decay. These decays are absent in the Standard Model but, in the presence of Majorana neutrinos in the appropriate mass range the rates for these processes would be enhanced due to their resonant contribution. The wide range of experiments probe neutrino masses over many orders of magnitude and place stringent constraints on the mass and mixing of neutrinos in the case of non-observation. In this talk we review the many promising probes of neutrino physics.

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