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Lepton Number Violation and the Baryon Asymmetry of the Universe

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Neutrinoless double beta decay, lepton number violating collider processes and the Baryon Asymmetry of the Universe (BAU) are intimately related. In particular lepton number violating processes at low energies in combination with sphaleron transitions will typically erase any pre-existing baryon asymmetry of the Universe. In this contribution we briefly review the tight connection between neutrinoless double beta decay, lepton number violating processes at the LHC and constraints from successful baryogenesis. We argue that far-reaching conclusions can be drawn unless the baryon asymmetry is stabilized via some newly introduced mechanism.

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