

Study of heavy neutral leptons in displaced vertex in proton proton collisions

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In the present work, Monte Carlo simulation methods were employed using the MADGRAPH software. A range of masses was tested for a fourth type of neutral lepton, HNL, symmetrically coupled with the three generations of neutrinos in the standard model. Additionally, different orders of magnitude for the coupling of the HNL with the neutrinos were tested. The reconstruction of the HNL signal is highly sensitive to variations in the coupling. The faithful reconstruction of the W boson mass was also shown to be important for applying a correct weighting of the jets that are taken into consideration.

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