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New signatures of decaying HNLs in large scale detectors

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Heavy neutral leptons (HNLs) are among the simplest and most natural extensions of the Standard Model; they are widely expected in a range of more complicated dark sector models. At MeV scale masses, HNLs are typically very long lived and can be difficult to search for with laboratory experiments. In this talk I will discuss how large volume detectors can search for decaying HNLs produced by neutrinos scattering against terrestrial material (i.e. the entire volume of the Earth). This represents an exciting new detection strategy that can already place new constraints on $\nu_\tau - N$ mass mixing and constraints on dipole portal couplings to all flavors of neutrinos.

Summary

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