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LHC test of the see-saw

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We discuss the prospects for detecting right-handed neutrinos which are introduced in the see-saw mechanism at future colliders. This requires a very accurate cancellation between contributions from different right-handed neutrinos to the light neutrino mass matrix. We search for possible symmetries behind this cancellation and find that they have to include lepton number conservation. Light neutrino masses can be generated as a result of small symmetry-breaking perturbations. The impact of these perturbations on LHC physics is negligible, so that the mechanism of neutrino mass generation and LHC physics are decoupled in general. In constrained cases, accelerator observables and neutrino masses and mixings can be correlated.

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