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Searching for heavy neutral leptons in electron positron colliders

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The origin of neutrino mass is a long standing puzzle. Plethora of models have been proposed to explain the origin of small neutrino mass. Among them tree level seesaw and inverse seesaw scenarios are the simplest ones where Standard Model (SM) is extended by SM-singlet heavy Right Handed Neutrinos (RHNs). If the RHN masses are $\mathcal{O}(\text{TeV})$ scale, they could be produced in lepton colliders through the mixing between the light-heavy neutrino mixing ($|V_{\ell N}|^2$) depending on the center of mass energy. Such RHNs can decay into a variety of models involving leptons and jets. Studying such final states from the RHNs we will show the projected bounds on the plane containing $|V_{\ell N}|^2$ and the mass of the RHN and compare with existing bounds.

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