

Testing the neutrino mass generation mechanism at the future colliders

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The generation of the neutrino mass is an essential observation from the neutrino oscillation experiments. This indicates a major revision of the Standard Model which initiated with the massless neutrinos. A possible interesting scenario is the seesaw mechanism where SM gauge singlet Right Handed Neutrinos are introduced. Another interesting aspect is the extension of the SM with $SU(2)$ triplet fermions. Alternatively a general $U(1)$ extension of the SM is also an interesting idea which involves three generations of the SM singlet RHNs to generate the tiny neutrino mass through the seesaw mechanism. Additionally such models can contain a Z' boson which could be tested at the colliders through the pair production of the RHNs.

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