

Testing the seesaw mechanism

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Summary

The type-I seesaw mechanism provides a natural explanation for the smallness of the light neutrino masses due to a suppression by the Majorana masses of heavier right handed neutrinos. The magnitude of these Majorana masses is unknown because neutrino oscillation data is only sensitive to ratios of the neutrinos' Yukawa couplings and the Majorana masses. If their Yukawa couplings are comparable to that of the electron, then the heavy Majorana mass scale can lie below the TeV scale, and the heavy neutrinos may be found in laboratory experiments. We combine existing constraints from various direct and indirect searches as well as cosmology to constrain the parameter space of the low scale seesaw and outline the perspective to probe the seesaw mechanism in future experiments.

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