

Phenomenology 2018 Symposium



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A new theorem for lepton number conservation in seesaw models

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The observation of neutrino oscillations requires an extension of the Standard Model that generates neutrino masses and mixing. The seesaw mechanism and its various realisations are among the most studied possibilities and one of their most striking phenomenological signature is lepton number violation. We will present a new theorem stating that the requiring the light neutrinos to remain massless to all orders in the perturbative expansion is equivalent to enforcing lepton number conservation. This provides a firm basis in requiring lepton number to be nearly conserved in low-scale seesaw models and proves that any symmetry used to lower the seesaw scale contains lepton number as a subgroup or as an accidental symmetry.

Summary

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