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Parameter space for low-energy CP phases and low scale leptogenesis within Inverse seesaw model.

Tuesday 13 December 2022 14:00 (1 hour)

The extension of the standard model with heavy right-handed neutrinos simultaneously accounts for the light neutrino mass and baryon asymmetry through leptogenesis. In addition to the properties of the heavy neutrinos, leptogenesis exhibits dependence on the CP phases measurable at neutrino oscillation and neutrinoless double beta decay experiments. In this work, we examine the scenario where the Dirac and Majorana phases are the dominant source of CP violation required for successful leptogenesis. We will demonstrate a scenario within minimal inverse seesaw (ISS(2, 2)) framework with texture zeros in which the CP violation necessary for leptogenesis comes from low-energy CP phases. We perform a numerical study of the evolution of lepton asymmetry by solving the associated Boltzmann equations. Furthermore, the effective neutrino mass relevant for neutrinoless double beta decay amplitude is found to be constrained by successful explanation of neutrino experimental data and the baryon asymmetry of the universe.

Session

Neutrino Physics

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