

Beyond PMNS and Precision Tests for Heavy Neutral Leptons

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The origin of the smallness of neutrino mass is still unknown to us. In seesaw like theoretical models, heavy neutrinos are often included to justify the small masses of the known three active light neutrinos. In the talk, we explore the influence of these additional heavy neutrino states on the Z-boson decays with lepton flavor violating and conserving channels in the context of the Z-physics e+e- colliders precision studies. We consider the simplest seesaw Majorana-type model with two heavy neutrinos, limiting Dirac neutrino, and non-decoupling light-heavy neutrino mixing scenarios. Constraints on nonstandard neutrino masses and mixing from rare low-energy lepton-violating processes are essential to the analysis. We also discuss the connection between heavy neutrinos probed at colliders and low-scale leptogenesis.