

Low-Scale Leptogenesis in Extended Neutrino Mass Models

Wednesday, 23 May 2018 14:20 (20 minutes)

Standard thermal leptogenesis in the type-I seesaw model requires very heavy right-handed neutrinos (RHNs). This diminishes the prospects of directly testing this scenario in experiments and, thus, motivates efforts to construct models that generate the baryon asymmetry of the Universe at a lower RHN mass scale. In this talk, I will discuss two such alternative scenarios: First, I will revisit Ernest Ma's scotogenic model of radiative neutrino masses and present an analysis of "scotogenic leptogenesis for pedestrians". Then, I will turn to a singlet-extended version of the type-I seesaw model that introduces additional sources of CP violation as well as novel RHN decay channels. In both cases, successful leptogenesis can be achieved for a RHN mass scale of 10 TeV (or lower) and without any approximate degeneracy in the RHN mass spectrum. The two scenarios discussed in this talk therefore present viable and attractive alternatives to the well studied case of resonant leptogenesis. This talk is based on work in collaboration with Tommi Alanne, Thomas Hugle, and Moritz Platscher at MPIK Heidelberg.

Presenter: Dr SCHMITZ, Kai (MPIK Heidelberg)

Session Classification: Parallel Session on Neutrinos and Baryogenesis