Contribution ID: **936** Type: **Parallel**

Low-scale leptogenesis with 3 right-handed neutrinos

Friday 6 July 2018 11:30 (15 minutes)

We provide the first systematic study of the low-scale leptogenesis scenario in the minimal Standard Model extended with 3 right-handed neutrinos having masses at the GeV scale.
We highlight and discuss the differences between the 2- and the 3-right-handed neutrino cases, the major qualitative distinction being the possibility, in the latter scenario, of probing part of the parameter space at the LHC. Moreover, 3-right-handed neutrinos allow for the generation of a CP-asymmetry already in the oscillating sterile sector, without the need of relying on flavour asymmetric washout. We quantitatively study the differences between the parameter space of solutions in the two scenarios, highlighting the viability of the models and their testability in current and future experiments, as well as the different impact of the identified solutions in neutrino observables, as for instance in the neutrinoless double beta decay expected rate.

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Session Classification: Astro-particle Physics and Cosmology

Track Classification: Beyond the Standard Model