



Contribution ID: 17

Type: **not specified**

Hunting for Two Right-Handed Neutrinos at Low Scales ($17'+3'$)

Friday, October 11, 2024 11:25 AM (20 minutes)

The addition of two gauge singlet right-handed neutrinos to the Standard Model is a minimal extension that can potentially solve multiple open questions at once, including the observed neutrino masses via the Type-I seesaw mechanism, and the baryon asymmetry of the universe via leptogenesis. We show that combining the constraints from low-scale leptogenesis and the current non-observation of neutrinoless double beta decay ($0\nu\beta\beta$) proves to be a powerful complement to the limits obtained from Big Bang Nucleosynthesis and collider searches in order to constrain the masses and mixings of heavy neutrinos. Improved limits on $0\nu\beta\beta$ from next-generation experiments will restrict the allowed parameter space to narrow bands in the mass-mixing plane in case of inverted neutrino mass ordering, which could be probed by future collider programs, making such models with MeV-GeV range heavy neutrinos fully testable.

Authors: Prof. DE VRIES, Jordy (University of Amsterdam, NIKHEF); Prof. DREWES, Marco; GEORIS, Yanis; Dr KLARIC, Juraj; PLAKKOT, Vaisakh

Presenter: PLAKKOT, Vaisakh

Session Classification: Lepton number violation in low energy processes