Contribution ID: **622** Type: **not specified**

Lepton Number Breaking from the Electroweak Scale

Wednesday 15 May 2024 14:00 (15 minutes)

Unravelling the mystery of neutrino masses is one of the top priorities in particle physics and tremendous model building efforts have been devoted to exploring new physics beyond the Standard Model (BSM) in order to state the puzzle succinctly. In this work, we consider a simple extension of the standard model of particle physics (SM) —a class of models called Two-Higgs Doublet Model with Lepton number (2HDML) where a second Higgs doublet and right-handed neutrino/heavy neural lepton, both carrying lepton number, are introduced. With the breaking of lepton number at the electroweak scale, the right-handed neutrino/heavy neural lepton is naturally light and the nonzero neutrino masses are generated via Type-1 seesaw mechanism. This talk presents the construction and the phenomenology of such 2HDML model and discusses constraints on the 2HDM parameter space such as those derived from the CP-even Higgs exotic decays.

Mini Symposia (Invited Talks Only)

Authors: Dr BHOONAH, Amit (University of Pittsburgh); Prof. BATELL, Brian (University of Pittsburgh); HUANG, Wenjie

Presenter: HUANG, Wenjie

Session Classification: Neutrino Physics

Track Classification: Neutrino Physics