Contribution ID: **11** Type: **not specified**

Type-III Seesaw: Phenomenological Implications of the Information Lost in Decoupling from High-Energy to Low-Energy

Friday 19 February 2021 13:18 (15 minutes)

The type-III seesaw seems to explain the very minuteness of neutrino masses readily and naturally. The high-energy see-saw theories usually involve a larger number of effective parametres than the physical and measurable parametres appearing in the low-energy neutrino phenomenology. Casas-Ibarra parameterization facilitates to encode the information lost in integrating the heavy fermions out in an arbitrary complex orthogonal matrix. The CMS collaboration has already searched for triplet fermions in the context of a simplified type-III seesaw with only one generation of them in the flavour democratic scenario. We reinterpret this CMS search based on multilepton final states in the context of a realistic type-III seesaw model with two or three generations of triplet fermions, and endeavour to comprehend the implications of the foregoing matrix on the 95% CL lower limit on the mass of the triplet fermions. Depending on the choice for the said matrix, we find that the bounds could be notably contrasting than that obtained by the CMS search.

Authors: ASHANUJJAMAN, Saiyad (Institute of Physics, Bhubaneswar); Dr GHOSH, Kirtiman (Institute of Physics, Bhubaneswar)

Presenter: ASHANUJJAMAN, Saiyad (Institute of Physics, Bhubaneswar)

Session Classification: Workshop talks