Contribution ID: **26** Type: **not specified**

Chiral gauge theories connecting Dark matter and neutrinos

Monday 9 May 2022 17:45 (15 minutes)

We carry out a systematic investigation for minimal scotogenic models based on a dark $U(1)_D$ gauge symmetry, in which the neutrino masses are induced at the one-loop level and include a chiral dark matter(DM) candidate. Moreover, we assume this $U(1)_D$ gauge symmetry is broken by only one Higgs singlet scalar that also generates masses to all dark fermions. The stability of the DM candidate is ensured by a residual symmetry of $U(1)_D$ symmetry. We study a complete theory with chiral $U(1)_D$ with various possible dark matter scenarios and explore the associated DM phenomenology for these feasible cases (scalar DM (singlet-doublet mixture), Majorana/Dirac DM) consistent with the current experimental bounds.

Authors: CHAKDAR, Shreyashi; Mr VISHNU, P.K (Oklahoma State University)

Co-author: Prof. BABU, Kaladi (Oklahoma State University)

Presenter: CHAKDAR, Shreyashi

Session Classification: Neutrinos I