

The dark side of neutrinos

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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. Assuming this $U(1)_D$ gauge symmetry is broken by only one Higgs singlet scalar that also generates masses to all dark fermions, we analyze the stability of the DM candidate which is ensured by a residual symmetry of $U(1)_D$ gauge symmetry.

There can be different DM scenarios explored in this framework and we investigate the associated scalar and fermionic DM phenomenology of one of the minimal models.

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