

Dark matter and neutrino mass in the radiative seesaw model

Wednesday, 14 July 2021 14:30 (15 minutes)

We study the simplest viable dark matter model with an additional neutral real singlet scalar, including a vectorlike singlet and doublet fermions. We find a considerable enhancement in the allowed region of the scalar dark matter parameter spaces in the presence of these fermions. This model could also accommodate tiny neutrino masses and mixing at one loop-level through the radiative seesaw mechanism. Dilepton + transverse missing energy signature arising from the new fermionic sector can observe at Large Hadron Collider (LHC), satisfying relic density, including other theoretical and experimental bounds. We perform such analysis for a benchmark point in the context of 14 TeV LHC experiments with a future integrated luminosity of 3000 fb^{-1} .

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Session Classification: Dark Matter

Track Classification: Dark Matter