

## RvMDM and lepton flavor violation

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A model relating radiative seesaw and minimal dark matter mass scales without beyond the standard model (SM) gauge symmetry (RvMDM) is constructed. In addition to the SM particles, the RvMDM contains, a Majorana fermion multiplet  $\text{NR}$  and scalar multiplet  $\chi$  that transform respectively as  $(1, 5, 0)$  and  $(1, 6, -1/2)$  under the SM gauge group  $\text{SU}(3)_C \times \text{SU}(2)_L \times \text{U}(1)_Y$ . This choice for representation of the new multiplets is the minimal one that combining the minimal dark matter model and radiative seesaw mechanism successfully. The neutral component  $\text{NR}_0$  plays the role of dark matter with a mass in the range of 9 to 10 TeV. This scale also sets the lower limit for the scale for the heavy degrees of freedom in  $\text{NR}$  and  $\chi$  which generate light neutrino masses through the radiative seesaw mechanism. The model predicts an  $\text{NR}_0$ -nucleus scattering cross section that would be accessible with future dark matter direct detection searches as well as observable effects in present and searches for charged lepton flavor violating processes, such as  $\text{li} \rightarrow \text{lj} \gamma$  and  $\mu - e$  conversion.

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