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Light Neutrinophilic Dark Matter from Scotogenic Model

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We explore a novel possibility of light thermal dark matter within the context of neutrino mass models. In the sub-GeV mass regime, dark matter relic solely annihilates into neutrinos without affecting the Cosmic Microwave Background anisotropies. We have proposed a minimal UV-complete model for this scenario. All new physics states lie at or below the electroweak scale, affecting Higgs physics, neutrinoless double beta decay process, and lepton flavor violating process. We find that the indirect detection of dark matter at large-volume neutrino detectors such as Dune, Hyper-Kamiokande, and JUNO experiments is the most effective way to test this model. Results will be presented.

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