

Abstract Submitted
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Sterile Neutrino Dark Matter via Secret Neutrino Interactions¹

WALTER TANGARIFE, Loyola University Chicago — I will present the anatomy of production mechanisms for sterile neutrino dark matter in the presence of new interactions among either active or sterile neutrinos. These new interactions can be mediated by a scalar or a vector, and allow sterile neutrinos to make up all the dark matter while safely evading all current experimental bounds. We identify three regimes of the mediators mass and coupling where it makes a distinct impact on dark matter production through the dispersion relations and/or scattering rates. These models serve as a well-motivated target for the upcoming experimental searches.

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