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Matching Neutrino-Dark Matter Scattering Limits from Boosted Dark Matter and Neutrino Echo using Supernovae Neutrino Flux

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In recent years, there have been limits placed on neutrino-dark matter scattering using the neutrino echo effect and using boosted dark matter detection respectively. In this work, we aim to combine the analysis on both parts by using galactic supernovae neutrino fluxes covering an extended energy range, which shows effects from both phenomena, thereby matching the parameter spaces from the two types of analysis which have been independent from each other previously. This gives us a better understanding of where current limits stand for neutrino-DM scattering, preparing for the next generation astroparticle DM detectors.

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