

Abstract Submitted  
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**Constraining Dark Matter-Neutrino Interactions with High-Energy Astrophysical Neutrinos** CARLOS ARGUELLES, MIT — IceCube has continued to observe cosmic neutrinos since their discovery. The origin of these cosmic neutrinos is still unknown. Moreover, their arrival direction is compatible with an isotropic distribution. The this observation, together with dedicated studies looking for galactic plane correlations, suggest that the observed astrophysical neutrinos are of extragalactic origin. If there is a dark matter-neutrino interaction, then the observed neutrino flux and its spatial distribution would be distorted. We perform a likelihood analysis using four years of IceCube’s high energy starting events to constrain the strength dark matter neutrino interactions in the context of simplified models. Finally, we compare our results with cosmology and highlight the complementary between the two constraints.

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