

Abstract Submitted
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Non-Standard Interaction of Solar Neutrinos in Dark Matter Detectors SHU LIAO, Texas AM Univ, JAMES DENT COLLABORATION, BHASKAR DUTTA COLLABORATION, JAYDEN NEWSTEAD COLLABORATION, LOUIS STRIGARI COLLABORATION, JOEL WALKER COLLABORATION — Future direct dark matter search experiments can be an ideal probe of information on non-standard interaction (NSI) of solar neutrino through both elastic neutrino-electron scattering and coherent neutrinoj nucleus scattering, and these channels provide complementary probes of NSI. NSI affect neutrino production, propagation, and detection, and have been searched for through each of these channels. For propagation, the presence of NSI modifies the matter potential through both the diagonal and off-diagonal elements in the effective Hamiltonian. For detection, NSI affects the interactions with leptons or quarks, either enhancing or decreasing the cross section relative to the SM value. With dark matter experiments we can identify a range of NSI parameter space that is not ruled out by neutrino experiments. For certain range of NSI parameters the NSI event rate can be reduced by approximately 40% due to the interference between SM and BSM term. In addition to normal LMA solution of neutrino oscillation, "dark side" solution for solar neutrino mixing angle can also be probed by forthcoming dark mattering experiments.

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