

# Neutrinos from the Sun as a discovery tool for dark matter - electron scattering

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We will discuss a novel strategy to search for dark matter (DM)-electron scattering. DM interacting with electrons may get captured inside the Sun. These captured DM may annihilate to produce different Standard Models (SM) particles. Neutrinos produced from these SM states can be observed in IceCube and DeepCore. Although there is no excess of neutrinos from the Solar direction, we find that the current results of IceCube and DeepCore set the strongest constraint on DM-electron scattering cross section in the DM mass range above  $\sim 10$  GeV. This implies that future observations of the Sun by neutrino telescopes have the potential to unravel DM-electron interactions.

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