

## A Measurement of the Solar Boron-8 Neutrinos with the XENONnT Dark Matter Detector

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Solar neutrinos interacting with nuclei in dark matter detectors through coherent elastic neutrino-nucleus scattering (CEvNS), often referred to as the ‘neutrino fog,’ presents a significant challenge to direct DM detection efforts. The XENONnT detector, known for its large exposure and low background, offers an exceptional opportunity to investigate this interaction. Utilizing data from XENONnT’s first and second science runs, we searched for CEvNS signals of solar B-8 neutrinos, resulting in 37 observed events above 0.5 keV, with the 26.4 background events expected, led to the rejection of the background-only hypothesis with a statistical significance of 2.73-sigma. This marks the first direct detection of nuclear recoils from solar neutrinos using a dark matter detector. In this talk, I will present a detailed view of the search for solar B-8 CEvNS signals with XENONnT.

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