

A step into the neutrino fog: first indication of solar CEvNS with XENONnT

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The XENONnT detector, located at Laboratori Nazionali del Gran Sasso, in Italy, utilizes 5.9 tonnes of instrumented liquid xenon in the direct search for weakly-interacting massive particle (WIMP) dark matter. Having achieved unprecedented levels of target purity, it is sensitive to a plethora of signals beyond WIMPs. This talk will present an overview of the experiment and its performance in the search of solar B-8 neutrino interactions via the so-called coherent elastic neutrino-nucleus scattering (CEvNS) process. This analysis, pursued with a lower detection threshold than the standard WIMP search, yielded the first-ever solar CEvNS indication, with a statistical significance of 2.7σ .

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