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First Detection of CEvNS on Argon with the CENNS-10 Liquid Argon Detector

The first observation of coherent elastic neutrino-nucleus scattering (CEvNS) was made by the COHERENT collaboration at the Oak Ridge National Laboratory (ORNL) Spallation Neutron Source (SNS) in August 2017 with a 14.6 kg CsI(Na) detector. One of the physics goals of the COHERENT experiment is to test the N^2 dependence of the CEvNS cross section predicted in the Standard Model by observing CEvNS in multiple nuclei. To that end, the ∼24 kg CENNS-10 liquid argon detector was deployed at the low-background Neutrino Alley at the SNS. An observation of CEvNS with CENNS-10 provides a low N measurement to begin to map out the CEvNS cross section. CENNS-10 was deployed at the SNS in early 2017 and has been continuously operating since its deployment. Results showing the first detection of CEvNS on argon with this detector will be presented.

Mini-abstract

First detection of coherent elastic neutrino-nucleus scattering on argon nucleus

Experiment/Collaboration

COHERENT

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