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## CENNS-750: A Ton-Scale Liquid Argon Detector for CEvNS at the SNS

Coherent Elastic Neutrino-Nucleus Scattering (CEvNS) is a neutral-current neutrino interaction that has recently been observed by the COHERENT Collaboration. COHERENT has deployed detectors with a range of target nuclei to the Spallation Neutron Source at Oak Ridge National Laboratory.

As part of this effort, a single-phase liquid argon detector, CENNS-10, was deployed to the SNS in Fall 2016, and the 24kg fiducial volume target has recently made the first low-N measurement of CEvNS. Using the lessons learned from running CENNS-10, a ton-scale single-phase liquid argon detector, CENNS-750, is currently being designed and prototyped. CENNS-750 is expected to see around 20 times more CEvNS events per year than CENNS-10 as well as be sensitive to inelastic neutrino events. Development of CEvNS detection capabilities also provides tools for direct dark matter WIMP searches. Current progress on CENNS-750 will be presented.

### Mini-abstract

A ton-scale single phase liquid argon detector for measuring CEvNS is currently in development.

### Experiment/Collaboration

COHERENT

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