

Abstract Submitted
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Towards a Precision CEvNS Measurement with a Tonne-Scale Liquid Argon Detector¹ MATTHEW HEATH, Oak Ridge National Laboratory, COHERENT COLLABORATION — Precision measurements of coherent elastic neutrino-nucleus scattering (CEvNS) will allow a broad collection of physics studies ranging from improving constraints on non-standard neutrino interactions to probing nuclear structure. A CEvNS detector near a spallation target also provides the opportunity to search for light accelerator-produced dark matter. Such studies require large-scale low-threshold detectors. To that end, the COHERENT collaboration has designed a 750 kg liquid argon (LAr) scintillation detector to deploy at the Spallation Neutron Source at Oak Ridge National Laboratory. The detector is designed to achieve the 20 keVnr threshold needed for efficient detection of nuclear recoils. In this talk I will present the experimental design and discuss the expected physics sensitivity of this detector, as well as outline the ongoing R&D to further improve the light collection for future CEvNS studies with LAr.

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