Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

Update on Work on CENNS-750 MAX HUGHES, Indiana Univ - Bloomington, COHERENT COLLABORATION — Coherent elastic neutrino-nucleus scattering (CEvNS) has been detected in a 24 kg single-phase liquid argon (LAr) scintillator detector. Further data collection and analysis for a 5σ measurement is ongoing. To obtain an event rate 20 times that of the 24 kg detector, a 750 kg LAr scintillator detector has been designed by the COHERENT collaboration to be deployed at the Spallation Neutron Source at Oak Ridge National Laboratory. This tonne-scale detector is designed to operate at a low threshold to do a precision measurement of the CEvNS recoil spectrum, which can be used to probe other physics such as nuclear form factors or for non-standard neutrino interactions. The detector can also search for light accelerator-produced dark matter. The 750 kg detector will also sensitive to inelastic charged-current and neutral-current events. To meet these goals, work in competent testing and design must be done. This talk will be an update on current efforts in the light collection and cryogenics of the detector.

Maximilian Hughes
Indiana Univ - Bloomington

Date submitted: 01 Jul 2020 Electronic form version 1.4