

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Latest Results and Status of CEvNS on LAr from the COHERENT Collaboration BENJAMIN SUH, Indiana Univ - Bloomington, COHERENT COLLABORATION — Coherent Elastic Neutrino-Nucleus Scattering(CEvNS) is a neutral-current neutrino interaction first observed by the COHERENT Collaboration in 2017 using a Cesium Iodide scintillating crystal. Measurement of the CEvNS cross-section could lead to new physics including constraints on nonstandard neutrino-quark interactions and on the weak nuclear radius. In addition, development of CEvNS-sensitive technologies is useful for WIMP dark matter searches and sterile neutrino searches. As part of the effort towards precision measurements of the CEvNS cross-section, the collaboration has deployed detectors with a range of target nuclei to the Spallation Neutron Source at Oak Ridge National Laboratory(ORNL). A single-phase liquid argon detector, COH-Ar-10, was deployed to the SNS in Fall 2016 by the COHERENT Collaboration. The 24kg fiducial volume target recently made the first low-N measurement of CEvNS in Spring 2020. The data used to make this measurement encompassed eighteen months of operation between mid-2017 and early 2019, for a total of 6.12GW_{hr} total integrated beam power. Here we detail the recent COH-Ar-10 result, discuss improvements for an ongoing analysis, and expected results.

Benjamin Suh
Indiana Univ - Bloomington

Date submitted: 08 Jan 2021

Electronic form version 1.4