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Search for CEvNS with a liquid argon scintillation detector

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The COHERENT collaboration is deploying a suite of low-energy detectors in a low-background corridor of the ORNL Spallation Neutron Source (SNS) to measure coherent elastic neutrino nucleus scattering (CEvNS) on an array of nuclear targets employing different technologies. A measurement of CEvNS on different nuclei will test the N^2 -dependence of the CEvNS cross section and further the physics reach of the COHERENT effort. The first step of this program has been realized recently with the observation of CEvNS in a 14.6 kg CsI detector. Operation and deployment of Ge and NaI detectors are also underway. A 22 kg, single-phase, LAr detector (CENNS-10) started data-taking in Dec. 2016 and will provide results on CEvNS from a much lighter nucleus. The design and performance of the CENNS-10 detector will be presented.

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