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A D_2O detector for COHERENT

The COHERENT collaboration recently made the first measurement of the Coherent Elastic Neutrino-Nucleus Scattering (CEvNS) process, more than 40 years after its theoretical prediction, by using neutrinos produced in the Spallation Neutron Source (SNS) at the Oak Ridge National Laboratory. This measurement opened up a window to further studies of interest to a diverse community of physicists. The 10% uncertainty on the SNS neutrino flux will soon be the dominant systematic for precision studies of CEvNS. We plan to address this issue by taking advantage of the well-understood charged current interaction of electron neutrinos on deuterium, using a heavy-water detector to measure the flux normalization. This poster will present an overview of the plans to deploy such detector in the near future.

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