Abstract Submitted
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NaI detector characterization for coherent elastic neutrino-nucleus scattering (CEvNS)[1] E. UJAH, J. SIBLEY, D.M. MARKOFF, NC Central University, S. HEDGES, C. AWE, P.S. BARBEAU, Duke University, COHERENT COLLABORATION — One goal of the COHERENT collaboration is to measure the coherent elastic neutrino-nucleus scattering (CEvNS) process in multiple targets to test agreement with the standard model predictions. Measuring the CEvNS interaction is challenging because the detection mechanism requires observing low nuclear recoil energy deposited in the crystal on the order of 10 keVee in NaI. In order to increase detection statistics, the COHERENT collaboration plans to buildÂ a multi-ton Sodium Iodide detector constructed of multiple 7.7 kg NaI[Tl] crystal modules. We adopted a crystal characterization procedure using known gamma-ray sources and background lines for testing the crystal quality, analyzing gain response, determining peak resolution, and evaluating the response as a function of distance along the crystal. Once the characterization of the crystals are complete, they will be deployed at the Oak Ridge National Laboratory as part of the COHERENT collaboration program.

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None

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