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Status of the COHERENT NaI[Tl] Detector

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One of the signatures of coherent elastic neutrino-nucleus scattering (CEvNS) is the predicted scaling of the cross section with number of neutrons in the recoiling nucleus squared (N^2). The COHERENT collaboration was formed to study CEvNS with a variety of targets to test the physics of CEvNS, including the N^2 cross section scaling. As part of COHERENT, a segmented ton-scale NaI[Tl] experiment is being prepared for deployment to the Spallation Neutron Source (SNS) to detect CEvNS-induced nuclear recoils. A dual-gain base has been developed to potentially allow a simultaneous measurement of CEvNS on sodium and iodine nuclei as well as charged-current electron neutrino interactions on iodine within the same detector. An overview of the detector will be presented, along with current status and future plans.

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