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COHERENT sensitivity to sub-GeV dark matter DANIEL PERSHEY, Duke University, COHERENT COLLABORATION — The coherent elastic neutrino-nucleus scattering (CEvNS) process was first observed in 2017, over 40 years after its prediction due to the difficulty in detecting the low-energy nuclear recoil signature, by the COHERENT collaboration using a pion decay-at-rest neutrino beam produced at the Spallation Neutron Source (SNS). CEvNS is a powerful tool for testing fundamental physics in detectors with a sufficiently low threshold. We will discuss COHERENT's sensitivity to test sub-GeV WIMP dark matter candidates that may be produced at the SNS and would scatter coherently with target nuclei. A modest-scale liquid argon scintillation detector could test the cosmologically observed dark matter concentration in parameter space complementary to limits set by direct detection experiments.

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