

Abstract Submitted
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Background Studies for an Experimental Neutrino Program at the Spallation Neutron Source for the COHERENT Collaboration¹ JASON NEWBY, Oak Ridge National Laboratory, COHERENT COLLABORATION — The Spallation Neutron Source at the Oak Ridge National Laboratory is a copious producer of neutrinos with multiple flavors, energies and timing structure ideally suited to conduct a broad range of neutrino measurements. Toward this goal of performing neutrino experiments, the recently formed COHERENT collaboration is measuring fast neutron backgrounds within the SNS target building and modeling multiple relevant detector technologies. While the collaboration has identified a rich multi-phased multi-nucleus experimental program, preparations are underway for a near-term observation of coherent elastic neutrino-nuclear scattering with at least one of three maturing detector development efforts within the collaboration. We will outline the proposed experimental program and present the results of our backgrounds measurement campaign and their implications for the feasibility and optimization for the neutrino experimental program.

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