

Neutrino Flux Simulations for COHERENT at the ORNL Spallation Neutron Source

The COHERENT experiment has observed coherent elastic neutrino-nucleus scattering (CEvNS) using the pulsed neutrino production from the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory. The collaboration now seeks to test the N^2 dependence of the standard model cross section for CEvNS using a suite of detector systems. Building on an existing GEANT4 simulation of neutrino production at the SNS, we extend available truth values while increasing overall efficiency. This poster will highlight the updates to the SNS simulation and present the resulting spectra as we investigate the neutrino flux at the detectors. Proposed validation methods will also be discussed.

Authorship annotation

for the COHERENT collaboration

Session and Location

Wednesday Session, Poster Wall #30 (Robert-Schumann-Room)

Poster included in proceedings:

yes

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Track Classification: Poster (participating in poster prize competition)