

Neutron Backgrounds for COHERENT with MARS

The COHERENT Collaboration made the first observation of Coherent Elastic Neutrino-Nucleus Scattering (CEvNS) as published in Science Magazine in August 2017. The signal for this process is a small nuclear recoil in the detector material. COHERENT is measuring CEvNS at the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory (ORNL) because of the timing, energy, and intensity of neutrinos provided. Since the SNS produces many neutrons that can interact in a detector via nuclear recoil, the neutron flux is an important background source to characterize. The Multiplicity And Recoil Spectrometer (MARS) is a gadolinium doped plastic scintillator that has been operational at the SNS since September 2017. The MARS detector will be used to measure beam-related neutrons in the location of a future germanium experiment for measuring CEvNS. I will present current status and goals for MARS.

Authorship annotation

for the COHERENT Collaboration

Session and Location

Wednesday Session, Poster Wall #32 (Robert-Schumann-Room)

Poster included in proceedings:

yes

Primary author: Mr RAYBERN, Justin (Duke University)

Presenter: Mr RAYBERN, Justin (Duke University)

Track Classification: Poster (participating in poster prize competition)