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Simulation of low-energy neutron events at ProtoDUNE-SP

Friday, February 26, 2021 12:05 PM (5 minutes)

The Deep Underground Neutrino Experiment (DUNE) is a long-baseline neutrino oscillation experiment which utilizes liquid argon TPC technology. The far detector will be in Sanford Underground Research Facility (SURF) in South Dakota, USA. An external neutron source based on a DD (Deuterium-Deuterium) generator can be used to calibrate the detector parameters. The single-phase and dual-phase ProtoDUNE TPC detectors at CERN are used to test the two TPC technologies for DUNE. A DD generator was deployed at ProtoDUNE-SP (single phase) in July 2020 and data were collected. In this talk, I will show the neutron simulation in ProtoDUNE-SP detector. Low energy neutrons and their backgrounds are simulated and the analysis of signals resulting from interactions with liquid argon in the detector are presented.

Collaboration name

DUNE Collaboration

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