

## Calibration of the 3D projection scintillation tracker prototype for the neutron beam test

The focus of the long-baseline neutrino oscillation experiments that are currently being built is the precise measurement of the neutrino oscillation parameters which will require good control of the systematic uncertainties including those of the neutrino interaction models. A novel three-dimensional projection scintillation tracker will be the active target of the ND280 near detector upgrade for the T2K experiment and is being considered as one of the on-axis near detector modules for the DUNE experiment. This detector features fine granularity and good timing resolution allowing for better reconstruction of the final state products of neutrino interactions on event-by-event basis including the ability to reconstruct neutrons. Two prototypes took neutron beam data in 2019 and 2020 at the Los Alamos National Lab (LANL) to study the detector response to neutrons with energies from 0-800MeV. The response of the detector was calibrated with in-situ LED calibration system and cosmic ray muons. The details of the detector response calibration are presented.

### Working group

WG6

**Author:** TZANOV, Martin Mihaylov (Louisiana State University (US))

**Presenters:** PAUL TORRES, Alexander (Louisiana State University); TZANOV, Martin Mihaylov (Louisiana State University (US))

**Session Classification:** Poster session NB: do not use Safari; use Firefox, Chrome or Edge