



Contribution ID: 5

Type: Plenary

## Event Reconstruction for the Deep Underground Neutrino Experiment

The Deep Underground Neutrino Experiment (DUNE) is an international collaboration focused on studying neutrino oscillation over a long baseline (1300 km). DUNE will make use of a near detector and neutrino beam originating at Fermilab in Batavia, IL, and a far detector operating 1.5 km underground at the Sanford Underground Research Facility in Lead, South Dakota. The near and far detectors will use the LArTPC (Liquid Argon Time Projection Chamber) technology to image neutrino interactions. The single-phase far-detector prototype, ProtoDUNE-SP, which is located at CERN and contains 0.77 kilotonnes of LAr, is currently the largest single-phase LArTPC in operation (since September 2018); ProtoDUNE-SP serves as a test and validation of the design for the single-phase far detector. In this talk, I give an overview of event reconstruction in the single-phase DUNE LArTPC detectors. Detector calibration and machine-learning approaches to event reconstruction are emphasized, and first results of event reconstruction at ProtoDUNE-SP are presented.

### Consider for young scientist forum (Student or postdoc speaker)

No

### Second most appropriate track (if necessary)

Enhanced performance of tracking algorithms

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