

DUNE Far Detector Event Reconstruction with Pandora

Saturday 20 July 2024 08:47 (17 minutes)

The Deep Underground Neutrino Experiment (DUNE) is a next-generation long-baseline neutrino oscillation experiment with a broad research program including measuring CP-violation in the neutrino sector, determining neutrino mass ordering and studying neutrinos from space. DUNE will employ massive, high-precision Liquid-Argon Time-Projection Chambers at the far site (70 kt total mass) to produce superb-resolution images of neutrino interactions. It is critical to reconstruct the visible particles from these complex images and extract crucial physics information. Pandora is a powerful multi-algorithm pattern recognition software that seamlessly blends traditional techniques with the latest machine-learning approaches and is the official reconstruction method for the DUNE Far Detector. This talk presents the Pandora event reconstruction for DUNE's Horizontal and Vertical Drift modules, and discusses approaches to tuning reconstruction for the specific needs of DUNE's various physics goals.

Alternate track

1. Computing, AI and Data Handling

I read the instructions above

Yes

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Session Classification: Computing and Data handling

Track Classification: 14. Computing, AI and Data Handling