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Pandora Reconstruction for the DUNE Far Detector

The Deep Underground Neutrino Experiment (DUNE) is a next-generation experiment that will perform precise measurements of neutrino physics and astrophysics using multi-kiloton liquid argon time projection chambers (LArTPCs). DUNE will require advanced reconstruction algorithms to fully exploit its fine-grain LArTPC images. The Pandora multi-algorithm toolkit is a state-of-the-art approach to pattern recognition, already in use in a range of experiments across particle physics. Here, we present the current status of the Pandora reconstruction for the single-phase DUNE far detector; a LArTPC whose instrumented anode consists of three non-parallel planes of wires. In the multi-algorithm approach, the complex neutrino event topologies are gradually pieced together through a chain of focused algorithms, each addressing a small piece of the pattern recognition until the complete event is reconstructed. This poster will detail the far detector reconstruction chain and its current performance.

Mini-abstract

The Pandora multi-algorithm approach to pattern recognition for the single-phase DUNE far detector

Experiment/Collaboration

DUNE

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