

ML-based Reconstruction in a Pixelated LArTPC:

The Deep Underground Neutrino Experiment (DUNE) will address open issues in neutrino physics such as the measurement of the CP-violating phase in neutrino oscillations and the neutrino mass ordering. The 2x2 demonstrator is a single-phase liquid argon time projection chamber (LArTPC), with four modules, operated as a prototype for the DUNE Liquid Argon Near Detector (ND-LAr). Each module in the 2x2 demonstrator is 0.67m x 0.67m x 1.8m. Based on the ArgonCube design concept, the 2x2 features a novel pixelated charge read-out and advanced high-coverage photon detection system. Machine learning can be used to form a complete reconstruction pipeline for 2x2 events. This poster will describe the workings of a package under development called SPLINE and its current performance.

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