

Abstract Submitted
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The LArIAT Experiment and Deep Learning Particle Classification DALTON SESSUMES, The University of Texas at Arlington, LARIAT COLLABORATION — The Liquid Argon In A Testbeam (LArIAT) experiment is designed to characterize Hadron-Argon cross-sections, provide input for the calibration of Liquid Argon Time Projection Chambers (LArTPC), and contribute to detector R&D using a LArTPC placed in a charged particle beamline at the Fermilab National Accelerator Laboratory's Test Beam Facility (FNAL FTBF). This talk will cover the installation, commissioning, and data acquisition of the most recent run of the LArIAT experiment, which took data at different wire pitches to explore the effects of the wire spacing on reconstruction performance, and it explores the possibility of using Deep Learning techniques as a primary identification method for particles detected in the LArTPC. The goal of this method is to upgrade the current classification efficiency and eliminate the need for human resources when sorting through detector data by introducing a new technique to intelligently and autonomously classify particles based on raw data from the LArTPC.

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