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Proton Calorimetry Study on the LArIAT Experiment ZACHARY WILLIAMS, Univ of Texas, Arlington, THE LARIAT COLLABORATION COLLABORATION — The Liquid Argon Time Projection Chamber In A Testbeam (LArIAT) experiment is a Liquid Argon Time Projection Chamber (LArTPC) placed in a charged particle beamline at Fermi National Accelerator Laboratorys Test Beam Facility (FNAL FTBF). The purposes of this experiment are to calibrate LArTPC response to traversing charged particles of known momentum, to measure hadron-argon cross sections, and to explore detector RD. This talk focuses on the use of the identified proton sample in the LArIAT beamline to improve the modeling of the energy loss by charged particles prior to entering the LArTPC. The aims of this study are to lower the systematics associated with hadron cross sections, and to provide a calibration sample for further study of highly ionizing particles in a LArTPC. Upstream energy loss estimation is critical to these aims. A new technique for estimating the upstream energy loss in LArIAT will be presented and compared to previous studies.

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