

## The Liquid Argon in a Testbeam (LArIAT) Experiment

*Friday, 23 June 2017 09:15 (15 minutes)*

The Liquid Argon Time Projection Chamber in a Test Beam (LArIAT) experiment at the Fermilab's Test Beam Facility exposes a liquid argon time projection chamber (LArTPC) to a test beam to study LArTPC responses to a variety of charged particles. Event identification and reconstruction techniques as well as cross section measurements from LArIAT will provide critical input to existing liquid argon neutrino experiments such as MicroBooNE, SBND, and ICARUS as well as help to improve future precision neutrino oscillation measurements in the Deep Underground Neutrino Experiment (DUNE). LArIAT has recently completed its third run period testing 5mm wire pitch as is proposed to be used in DUNE and 3mm wire pitch as is used in current short-baseline neutrino experiments. Additionally, LArIAT has deployed new scintillation light detection devices and techniques that will serve as an R&D testbed for the future planned experiments. The work presented here include new inclusive pion-argon cross-section measurements recently completed as well as recent progress on kaon and proton cross-sections measurements on argon underway in LArIAT.

**Primary author:** Dr ASAADI, Jonathan (University of Texas Arlington)

**Co-author:** Dr FALCONE, Andrea (UTA)

**Presenter:** Dr FALCONE, Andrea (UTA)

**Session Classification:** Working Group: Neutrino Physics

**Track Classification:** Neutrino Physics Working Group