

Scintillation light detection in the LArIAT TPC

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LArIAT is a Liquid Argon TPC currently taking data at Fermilab with the aim of calibrating the argon response for neutrino detectors. In parallel, it will help develop and evaluate the performance of the simulation, analysis and reconstruction software, used in other LAr neutrino experiments. LArIAT is running on a test beam of charged particles (mainly protons, pions and muons), identified using a set of beamline detectors, which allows the calibration of the response of the TPC to these charged particles. LArIAT will also take advantage of the scintillating capabilities of LAr and test the possibility of using the light signal to help determining calorimetric information and particle ID via Pulse Shape Discrimination. In this talk, results of simulations of the optical system for LArIAT will be presented, together with the first results of its calibration, proving its functionality on the way to further improve the LAr TPC for future neutrino experiments.

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