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P3.067 Liquid argon scintillation light studies in LArAT

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The LArAT experiment is using its Liquid Argon Time Projection Chamber (LArTPC) in the second run of data taking at the Fermilab TestBeam Facility. The goal of experiment is to study the response of LAr to charged particles of energies relevant for neutrino experiments. In addition, it will help to develop and evaluate the performance of the simulation, analysis and reconstruction software, used in other LAr neutrino experiments. Particles from a tertiary beam detected by LArAT (mainly protons, pions and muons) are identified using a set of beamline detectors, including Wire Chambers, Time of Flight counters and Cherenkov counters as well as a simplified sampling detector used to detect muons. In its effort towards augmenting LArTPC technology for other neutrino experiments, LArAT also takes advantage of the scintillating capabilities of LAr and is testing the possibility of using the light signal to help reconstruct calorimetric information and particle ID. In this poster, we will present results from these studies of the scintillation light signal to evaluate detector performance, PID and calorimetry.