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Calorimetry Likelihood: A New Particle Identification Method in MicroBooNE's LArTPC NICOL FOPPIANI, Harvard University, MICROBOONE COLLABORATION — MicroBooNE is a liquid argon time projection chamber, designed to study neutrino interactions at energies of the order of 1 GeV. The identification of different particles produced in the interaction is a key requirement for MicroBooNE's physics goals. Particle Identification can be performed by looking at the pattern of energy depositions along the track, which requires a detailed understanding of the calorimetry of the detector. The goal of the calorimetry likelihood approach is to model energy deposition taking into account the resolution and the anisotropies of the detector. This technique also relies on data-driven corrections to the simulation, in order to reduce uncertainties in the different MicroBooNE measurements and will be of interest for the current and future liquid argon time projection chambers. We will present the current status of the method and its application to MicroBooNE data and simulation.

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