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A Reconstruction Algorithm based on Charge Flow for use in the PiZero Detector at T2K FAHMIDA KHANAM, NORMAN BUCHANAN, Colorado State University, T2K COLLABORATION — The Tokai-to-Kamioka (T2K) experiment located in Japan is a long-baseline neutrino oscillation experiment that uses a beam of muon neutrinos passing through a detector (ND280) 280 meter from the beam origin and then through the Super-Kamiokande detector 295 km away. The primary goal of T2K is to measure the mixing angle, θ_{13}, of the first and third generation neutrinos using the ν_e appearance channel. The measurement of the π^0 is crucial as misidentified π^0s are the primary physics background to the ν_e signal at Super-K. The production rate of π^0s in neutral current and π^0 reactions in water will be measured in the PiZero detector component of ND280 and extrapolated to the Super-K detector. We will describe a method of reconstruction based on event charge flow for potential use in the PiZero detector and how it could be used as a starting point for a multivariate analysis of π^0 production in the near detector.

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