Electromagnetic Content of Neutral versus Charged Current Neutrino Interactions

MATT SEATON, SANJIB MISHRA, ANDREW GODLEY, University of South Carolina, NOMAD COLLABORATION — Asymmetric high energy photon conversion, where the electron carries most of the energy, in the hadronic shower of NC events will constitute the main background to the $\nu_e$ signal in theta-13 mixing experiments such as NO$\nu$A. The fine resolution NOMAD data can address this issue precisely. Measurements of the ratios of photon and $\pi^0$ to total visible energy, in hadronic $P_T$ bins, for NC and CC will be presented along with the method for obtaining them. These can be used to calibrate current Monte Carlo to accurately predict backgrounds for NO$\nu$A, and MINOS.

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