



Poster session 2 – Tuesday 5 July

P2.043 Probing nuclear effects in few GeV neutrino-nucleus interactions using single-transverse kinematic imbalance with the MINERvA experiment

X Lu¹ and M Betancourt²

¹University of Oxford, UK, ²Fermi National Accelerator Laboratory, USA

on behalf of MINERvA collaboration

Understanding nuclear effects in neutrino interactions in the GeV regime is crucial for future accelerator-based precision neutrino oscillation measurements. Compared to conventional observables, kinematic imbalance of the final state particles in the plane transverse to the neutrino direction is much less susceptible to the unknown neutrino energy and therefore provides a sensitive probe of nuclear effects. MINERvA at the NuMI beamline of FNAL is a dedicated experiment for the studies of neutrino-nucleus interactions. With the tracking and particle identification capability of its fine-grained detector, MINERvA measures the single-transverse kinematic imbalance in neutrino charged-current quasi-elastic like events on CH targets with only one muon and at least one proton in the final state. In this contribution we will describe the measurement and compare the results to Monte Carlo predictions.