

Abstract Submitted
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MeV-Scale Physics in MicroBooNE AVINAY BHAT, Syracuse University — MicroBooNE is a near surface Liquid Argon Time Projection Chamber (LArTPC) neutrino experiment along the Booster Neutrino Beam (BNB) at Fermilab. Low electronics noise levels and millimeter spatial resolution allow this detector to be sensitive to MeV-scale interactions. The near surface location of the detector makes it challenging to distinguish interesting low energy activity such as nuclear de-excitation photons and neutron scatters caused by neutrino interactions from cosmic ray backgrounds. This talk will present a novel reconstruction method for these MeV scale energy signatures in MicroBooNE, and its application to a measurement of the cosmic ray background and an effective rejection strategy. Finally, we will present preliminary measurements of MeV energy signatures produced in BNB neutrino interactions, and discuss the application of this technique to studies of low energy neutrino interactions from core-collapse supernovae and Muon Decay at Rest (μ DAR).

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