Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Antineutrino-Induced Charge Current Quasi-Elastic Neutral Hyperon Cross-Section on Argon in ArgoNeuT SAMUEL BORER, University of Maine, ARGONEUT COLLABORATION COLLABORATION[1] — This poster will cover work done on the first topological and calorimetric study of the cross section measurement of antineutrino-induced charge current quasi-elastic (CCQE) neutral hyperons in liquid argon. This study is being conducted in the Argon Neutrino Test (ArgoNeuT) experiment at Fermi National Accelerator Laboratory. ArgoNeuT is a liquid argon time projection chamber (LArTPC), which provides full 3D-imaging, excellent particle identification capability, precise calorimetric energy reconstruction, and represents the most advanced experimental technology for neutrino physics. This project uses 1.2x10ˆ20 protons-on-target, in the NuMI beam operating in the low energy antineutrino mode. The reconstruction and analysis techniques developed and improved in this study can be applied to a wide variety of future LArTPC experiments. CCQE Neutral Hyperons are induced exclusively by antineutrinos and can be used as an "antineutrino tagger" for larger experiments. This poster will present analysis techniques and preliminary findings for the CCQE neutral hyperon cross section in liquid argon.

[1]Based at Fermi National Accelerator Laboratory

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Date submitted: 10 Jan 2018 Electronic form version 1.4