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Anti-Neutrino-induced Hyperon Production with ArgoNeuT SAIMA FAROOQ, Kansas State University, ARGONEUT COLLABORATION, MICROBOONE COLLABORATION — ArgoNeuT is a small scale (170 liter) Liquid Argon Time Projection Chamber (LArTPC) which is located at Fermi National Accelerator Laboratory in Batavia, Illinois. ArgoNeuT is located 330 feet underground, upstream of the MINOS near detector, exposed to the on-axis NUMI neutrino beamline. It is an R&D project paving the way for bigger LArTPCs such as MicroBooNE and kilton-ton scale devices. ArgoNeuT can provide bubble chamber quality images and excellent background rejection. The detector takes neutrino interactions in the 0.1 to 10 GeV range, providing the first ever low energy neutrino interactions data within a LArTPC. There are very few studies on neutral hyperon production via charge current quasielastic (CCQE) neutrino interactions. LArT-PCs, with the ability to see the detached vertex of a neutral hyperon decay, makes it stand out among other experiments. Among other measurements, ArgoNeuT will allow for a study comparing CCQE neutral hyperon production and CCQE neutron production at low energy.

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