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The ArgoNeuT Experiment

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Liquid Argon Time Projection Chamber (LArTPC) technology offers exceptional position resolution, total-absorption calorimetry, scalability, and efficient particle identification for neutrino detection. ArgoNeuT, a 170 liter LArTPC neutrino detector set in the NuMI beamline at Fermilab, has collected thousands of low energy ($E_{\nu} \approx 3 \text{ GeV}$) neutrino and anti-neutrino events in a wide variety of channels. (Anti-)Neutrino events in ArgoNeuT and preliminary kinematic distributions will be presented along with a description of the physics analysis, detector design, and future prospects. Emphasis will be placed on the ongoing neutrino-argon charged current quasi-elastic cross section analysis, relevant for long baseline neutrino oscillation experiments.

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