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Liquid Argon Time Projection Chambers: R&D Towards Kiloton Class Detectors MITCHELL SODERBERG, Yale University, ARGONEUT COLLABORATION — Liquid Argon Time Projection Chamber (LAr TPC) detectors are ideally suited for studying neutrino interactions and probing the parameters that characterize neutrino oscillations. The ability to drift ionization particles over long distances in purified argon and to trigger on abundant scintillation light allows for excellent particle identification and triggering capability. Recent work in the development of LAr TPC technology for massive kiloton size detectors will be presented in this talk, including details of the ArgoNeuT (Argon Neutrino Test) test-beam project, which is a 175 liter LAr TPC exposed to Fermilab's NuMI neutrino beamline. The first neutrino interactions observed in ArgoNeuT, as well as results from a commissioning run on the surface, will be presented. Proposals for the next generation of LAr TPC experiments, and the issues that must be confronted by these experiments, will be discussed.

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