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## The Liquid Argon Purity Demonstrator at Fermilab

Fermilab has an extensive program of research and development for liquid argon detectors encompassing purification and cryogenics, readout electronics, photon detection and high voltage. The current status and future plans of this program will be presented, with an emphasis on recent results from the Liquid Argon Purity Demonstrator (LAPD).

Removing electronegative impurities from liquid argon is crucial for the operation of liquid argon time projection chambers (LArTPC).

An important milestone for future large LArTPC detectors was the demonstration that electron lifetimes greater than 2 ms can be obtained in two cryostats that cannot be evacuated: the LAPD

and the LBNE 35 ton prototype membrane cryostat.

A TPC with a 2 meter drift

was operated in the LAPD cryostat, and the electron lifetimes measured by the purity monitors are compatible with those measured by the TPC.

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