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Status of The MicroBooNE Experiment

The high resolution 3D tracking offered by liquid argon time projection chambers make them an excellent candidate for future neutrino detectors in the next generation of long baseline experiments. In order to utilize this emerging detector design for such experiments, the scalability and physics capabilities of the technology must be proven.

The MicroBooNE experiment is a 170 ton liquid argon time projection chamber detector which will run in the booster neutrino beam at Fermilab, starting in 2013. The experiment incorporates two sensitive subsystems: a time projection chamber with a 2.5m drift, which provides high resolution 3D tracking by measuring ionization charge deposits from charged particles traversing the argon bulk; and an optical system comprised of cryogenic photomultiplier tubes,
which will measure scintillation light and provide a trigger and few-nanosecond level timing information. As well as providing a training ground for US based liquid argon technology, MicroBooNE will investigate the MiniBooNE / LSND anomaly and perform several neutrino cross section and nuclear physics measurements to world leading precision.

I will discuss the current status of experiment, elaborate upon its physics goals and indicate some potential future impacts of the knowledge obtained during the R&D phase of the project upon future LArTPC technology.

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