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**Light Collection in MicroBooNE** ARATI PRAKASH, MIT, MICROBOONE COLLABORATION — We describe the use of photomultiplier tubes (PMTs) for light collection in MicroBooNE, an experiment which will use a 170-ton liquid argon time projection chamber to measure low energy neutrino cross sections and investigate the low energy excess events observed by MiniBooNE. In the MicroBooNE electric field of 500V/cm, a MIP particle creates approximately 24,000 isotropic scintillation photons per MeV. We use 30 8-inch cryogenic PMTs mounted along the side wall of the detector chamber. The light is emitted in the vacuum UV region at 128nm and must be shifted in order to be detected by the PMTs. We use Tetraphenyl Butadeine (TPB)-coated plates mounted directly above the PMT surface. The simulation effort of whole system is ongoing and utilizes the LArSoft software being developed at FermiLab. The implementation of the PMT system discussed here provides not only coincidence signal for event reconstruction for MicroBooNE, but also valuable information for future liquid argon detectors. In this talk we report the results of research and development on the cryogenic PMTs, TPB-coated plates, and simulations comprising the light collection system in MicroBooNE.

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