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**Calibration of the MicroBooNE LArTPC for Space Charge Effects** CHRISTOPHER BARNES, Univ of Michigan - Ann Arbor, MICROBOONE COLLABORATION — I present a calibration for the space charge effect within the MicroBooNE Liquid Argon Time Projection Chamber (LArTPC). The space charge effect is the accumulation of slow-moving positive ions in a detector primarily from ionization by cosmic ray muons. Spatial and temporal distortions of ionization electrons result from this effect in addition to differences in the magnitude of charge yield throughout the detector. For a drift electric field value of 273 V/cm, the electric field within the detector varies by up to  $\sim 15\%$ . To correct the electric field and reconstructed track trajectories within the detector, we utilized a UV laser calibration system and a sample of pure cosmic ray muons. A full calibration in the TPC bulk and at the boundaries is provided to correct particle tracks within the detector and improve future simulation for the MicroBooNE experiment. Furthermore, this calibration technique may be applied to future LArTPC experiments.

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