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Drifted Charge Extraction in Single Phase LArTPCs

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The MicroBooNE detector is the first to be built in the short-baseline neutrino program. It is a single-phase LArTPC built to observe interactions of neutrinos from the on-axis Booster and off-axis NuMI beams at the Fermi National Accelerator Laboratory in Batavia, IL. We describe the concept and procedure of LArTPC drifted-charge extraction which converts the raw digitized TPC waveform to the number of ionized electrons passing through the wire plane at a given time. The proper recovery of the number of ionized electrons from both induction and collection anode wire planes is important to the success of the subsequent reconstruction algorithms. In this poster, we will show the details of the procedure including the key steps of 2D deconvolution and region-of-interest finding.

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