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Rejection of Backgrounds in the DMTPC Dark Matter Search Using Charge Signals

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The Dark Matter Time Projection Chamber (DMTPC) experiment uses a time projection chamber filled with low pressure CF₄ gas to detect the direction of WIMP-induced nuclear recoils. Recoils from WIMPs in the galactic dark matter halo are expected to have a directional signal distinct from all known backgrounds. Recent work has been done to develop instrumentation to read out both the scintillation and charge signals from the TPC. This talk will describe the charge readout systems of the DMTPC detector and will discuss their performance in identifying nuclear recoils and rejecting gamma and electron backgrounds.

Author: Mr LOPEZ, Jeremy (MIT)

Presenter: Mr LOPEZ, Jeremy (MIT)

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