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Updates from the DMTPC Dark Matter Search JEREMY LOPEZ, Massachusetts Institute of Technology, DMTPC COLLABORATION — The motion of Earth through the galactic dark matter halo combined with the rotation of Earth around its axis is expected to create a large daily modulation in the typical directions of WIMP dark matter induced nuclear recoils. This modulation, if found, would provide strong evidence for WIMP interactions with normal matter. To search for this signal, the Dark Matter Time Projection Chamber (DMTPC) collaboration is developing gas TPCs that can measure the directions of low energy nuclear recoils in low pressure CF_4 gas. DMTPC detectors use a mesh-based amplification region to measure the ionization profiles of recoils on a two-dimensional readout plane. CCD cameras are used to achieve sub-millimeter spatial resolution for a typical nuclear recoil range of one to several millimeters. This talk will discuss the commissioning and calibration of a prototype DMTPC detector in a surface laboratory at MIT. This detector, the 4-shooter, is testing several new features necessary for a planned 1 m^3 fiducial volume detector currently being designed. Upon completion of surface calibrations in early 2013, the 4-shooter detector will be installed underground at the Waste Isolation Pilot Plant (WIPP) in southeastern New Mexico.

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