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## Direction-Sensitive Dark Matter Detection with the DMTPC Experiment

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The Dark Matter Time Projection Chamber (DMTPC) collaboration is developing a low-pressure TPC with optical and charge readout for direction-sensitive dark matter detection, in order to correlate a dark matter candidate nuclear recoil signal, in a detector deep underground, with the earth's motion through the galactic dark matter halo. The unique angular signature of the dark matter wind, which is distinct from all known backgrounds, has potential to make a definitive identification of dark matter. The design strategy of directional detectors emphasizes tracking at energies below 100 keV, in order to reconstruct WIMP-induced nuclear recoil tracks, and thereby determine the direction of incident dark matter particles. This talk will report on recent progress on demonstrating direction-sensitivity in data from prototype DMTPC detectors, on scaling the DMTPC detector technology, and on new work exploring the potential for directional detection experimental sensitivity to exceed the neutrino bound.

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