

Abstract Submitted
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The MiniBooNE-DM Search for Sub-GeV Dark Matter ROBERT COOPER, New Mexico State University, MINIBOONE-DM COLLABORATION — There is overwhelming evidence that gravitationally interacting dark matter exists, but its identity and microscopic properties remain a mystery. Current direct detection experiments have not made a definitive claim, and this motivates searching for dark matter outside the direct search region of interest. In particular, direct detection experiments lack sensitivity at low mass because of their detection thresholds. On the other hand, low-mass dark matter could be produced and boosted to high energies by accelerators. Neutrino detectors have the requisite sensitivity to identify possible dark matter interactions in-time with the beam pulse and can reject other backgrounds. The MiniBooNE-DM collaboration recently completed a low-mass dark matter search at the Fermilab Booster Neutrino Beamline. By steering the 8 GeV proton beam off-target into the steel beamstop, the MiniBooNE detector sees a significant reduction of neutrino backgrounds. This talk will show results from the first low-mass dark matter search in the nucleon quasi-elastic scattering channel. Future analysis channels and prospects will also be presented.

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