

Abstract Submitted
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Development of Veto Detector for MiniCLEAN Experiment to Aid in the Search for Dark Matter MATTHEW ANTHONY, Massachusetts Institute of Technology — Weakly Interacting Massive Particles (WIMPs), the leading candidate for dark matter, are theorized to comprise approximately 83% of all of the matter in the universe. MiniCLEAN is a single phase liquid argon detector searching for a direct signal from WIMPs elastically scattering in its fiducial volume. These interactions are extremely rare (only several per year) so a high efficiency veto detector must distinguish between dark matter interactions and false positives. These false positives could be caused by other particles such as cosmic ray muons, high energy neutrons, and low energy neutrons interacting with the liquid argon detector. A veto detector was constructed and tested for use in the MiniCLEAN detector. Simulations were also run in order to characterize neutron signals in the liquid argon detector.

Matthew Anthony
Massachusetts Institute of Technology

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