

Abstract Submitted
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Simulation and Analysis for the MiniCLEAN Dark Matter Experiment STANLEY SEIBERT, University of Pennsylvania, MINICLEAN COLLABORATION — The MiniCLEAN dark matter experiment is an ultra-low background liquid argon and neon detector at SNOLAB with a fiducial volume of 150 kg. The ability of the experiment to exchange the target material gives MiniCLEAN both competitive sensitivity to WIMP dark matter and also the opportunity to demonstrate the technologies required to build the multi-ton detectors necessary for dark matter and precision measurements of low energy solar neutrinos. I will discuss the current status of the MiniCLEAN simulation and analysis package, called RAT. RAT is a GEANT4-based full optical simulation, which includes a complete model of the data acquisition system in order to mimic the real detector data stream for development of event-level analysis algorithms. In addition, I will report on projected performance of position reconstruction in RAT and improved timing-based techniques for particle identification.

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