

Abstract Submitted  
for the APR12 Meeting of  
The American Physical Society

**Status of the MiniCLEAN Dark Matter Experiment and  $^{39}\text{Ar}$  Background Simulation** THOMAS CALDWELL, University of Pennsylvania, MINICLEAN COLLABORATION — The MiniCLEAN dark matter experiment, part of the DEAP/CLEAN program, is an ultra-low background single phase liquid argon and neon detector with a fiducial mass of 150 kg. The ability to exchange targets and the background rejection offered by noble liquids give MiniCLEAN a competitive sensitivity to WIMP dark matter, and these same features along with the scalability of the single phase approach allow MiniCLEAN to demonstrate the technologies required for the construction and operation of next generation multi-ton dark matter and precision low-energy solar neutrino experiments. I will discuss the status of the MiniCLEAN detector and some recent improvements to background rejection and the detector design based on  $^{39}\text{Ar}$  background studies using MiniCLEAN's simulation and analysis package. In particular, I will highlight detailed  $^{39}\text{Ar}$  background studies that have assisted in the development of improved particle identification which utilizes Bayesian single photoelectron counting and the particle dependence of the scintillation time profile.

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Date submitted: 06 Jan 2012

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