

Abstract Submitted  
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**Pulse shape discrimination in liquid argon and liquid neon** HUGH LIPPINCOTT, Yale University, DEAP/CLEAN COLLABORATION — I present results from microCLEAN, a 4 kg noble liquid detector built as part of the DEAP/CLEAN programme to detect dark matter in the form of WIMPs using scintillation light. The sensitivity of these detectors to dark matter is limited by the level of discrimination between electronic and nuclear recoils. Scintillation light is produced in the decay of excimers that can exist in both the singlet and triplet states. Because these states have very different lifetimes, their populations can be easily separated using timing information. Since electronic and nuclear recoils produce different ratios of singlet to triplet molecules, the relative size of the two components can determine what type of event occurred. I present the pulse shape discrimination observed in both liquid argon and liquid neon using various methods, and I predict the sensitivity of a larger liquid argon detector to WIMP dark matter.

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