

Abstract Submitted  
for the HAW14 Meeting of  
The American Physical Society

**SuperCDMS-Soudan Low-Mass WIMP Constraints and the Next-Generation Detectors** ANTHONY VILLANO, Univ of Minn - Minneapolis, SUPERCDMS COLLABORATION — SuperCDMS is the next generation of the Cryogenic Dark Matter Search. Approximately two years of data have already been taken at the Soudan Underground Laboratory (2090 m.w.e), and the collaboration is preparing for installation at SNOlab (6010 m.w.e). CDMS searches for dark matter via direct detection with silicon and germanium crystal targets at cryogenic temperatures ( $\sim 50$  mK). Two recent publications with especially impressive low-mass limits underscore the versatility of the SuperCDMS detectors and show how their technology is the basis for a multifaceted approach to dark matter direct detection. Of key importance for these and future results are precision data handling and incremental detector improvements. Here the processing and analysis techniques used for the maximum physics reach down to the lowest recoil energies possible are discussed. Specifically, we consider how the quality of the data processing algorithms and analysis techniques drove the science reach of the recent publications. Data from the next-generation detectors is also discussed, and the performance of these detectors is put into the context of future SuperCDMS-SNOlab results.

Anthony Villano  
Univ of Minn - Minneapolis

Date submitted: 30 Jun 2014

Electronic form version 1.4