

Abstract Submitted
for the TSF17 Meeting of
The American Physical Society

The search for high mass WIMPs at SuperCDMS Soudan
ROBERT CALKINS, SMU, SUPERCDMS COLLABORATION — A large portion of the mass in the universe remains unaccounted for and is hypothesized to exist in the form of dark matter, of which, one popular hypothesis is the Weakly Interacting Massive Particle (WIMP). We present the result of a blinded search, optimized for high mass WIMPs, using approximately 1700 kg days of SuperCDMS Soudan exposure. A single event in the signal region was observed after unblinding, which is consistent with background expectations. Since no excess of events was observed, we set an upper limit on the spin-independent WIMP-nucleon cross section for germanium of 1.410^{44} cm² at 46 GeV/c². We combine the results of this search with the germanium result from CDMS-II and set a combined limit of 1.0×10^{-44} cm² for a 46 GeV/c² WIMP.

Robert Calkins
SMU

Date submitted: 21 Sep 2017

Electronic form version 1.4