

Abstract Submitted
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SuperCDMS Detector R&D: SNOLAB and Beyond ANDREW JASTRAM, Texas A&M University — SuperCDMS (Cryogenic Dark Matter Search) is an experiment designed to directly detect dark matter particles in the form of WIMPs (Weakly Interacting Massive Particles). Germanium and silicon detectors, cooled to $<30\text{mK}$, are instrumented to simultaneously measure phonon and ionization energy deposited by incident particles, allowing event-by-event discrimination, to identify and study possible WIMP interactions. Using phonon amplification via the Neganov-Luke effect, recent studies utilizing a modified version of these detectors (called CDMSLite) have demonstrated the energy resolution necessary to search for WIMPs of mass $\sim 1 \text{ GeV}/c^2$. A recent design, inspired by these studies, has led to a world record ionization resolution of 8eV .

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