

A CDMS low ionization threshold experiment and SuperCDMS SNOLAB

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Astrophysical observations of large scale gravitation suggest an abundance of non-baryonic dark matter. The Super Cryogenic Dark Matter Search (SuperCDMS) is designed to detect weakly interacting massive particles, a hypothesized solution to the dark matter problem. The SuperCDMS technology is based on germanium detectors instrumented with a new interleaved ionization and athermal phonon sensor layout. The ability to measure phonons allows an alternative operational mode, the CDMS low ionization threshold search (CDMSlite), optimized for WIMP masses below ~ 10 GeV. In this talk we describe a 10-kg-day exposure taken in this mode with SuperCDMS detectors at sub-keV thresholds. We will present results and constraints on the scattering cross-section of low-mass WIMPs.

The SuperCDMS Collaboration is designing a 200-kg experiment for SNOLAB. We will discuss the design and scientific capabilities of the proposed SuperCDMS-SNOLAB experiment.

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