

SuperCDMS in 10 minutes

The existence of dark matter is strongly indicated by various astronomical observations. However, its exact nature and properties are yet to be discovered. The SuperCDMS experiment, currently being built 2 km underground at SNOLAB in Canada, is a collaborative scientific effort to search for dark matter via direct detection. It will employ an array of silicon and germanium crystals instrumented with either phonon sensors, called HV detectors, or, phonon and charge sensors, called iZIP detectors. HV detectors make use of the Neganov-Trofimov-Luke effect to amplify phonon signals, thereby achieving a lower energy threshold. iZIPs are capable of exquisite electronic versus nuclear recoil discrimination thus reducing background effectively. Combining these two detector types gives the SuperCDMS experiment a potential opportunity for low mass, low cross-section dark matter discovery as well as producing world leading limits. In this talk, I will give an overview of SuperCDMS detector technologies and its scientific reach.

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