

First results from testing SuperCDMS SNOLAB detectors in a low background environment at CUTE

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SuperCDMS SNOLAB is a direct dark matter search experiment currently under construction at SNOLAB in Sudbury, Canada. SuperCDMS will deploy 24 cryogenic Si and Ge detectors, arranged in 4 towers with 6 detectors each. Although all 4 towers have been previously tested at SLAC, the extent of testing was limited due to large cosmogenic background at this surface facility. Two of the towers contain High Voltage (HV) detectors which utilize the NTL effect to obtain phonon signals amplified linearly with applied voltage, thus allowing us to lower our thresholds and search for low mass dark matter candidates. Tower 3, containing 4 Ge and 2 Si HV detectors, has been tested at the CUTE facility at SNOLAB from Oct 2023 to Feb 2024. This marks the first operation of these detectors in a low background environment, which closely resembles conditions in the main experiment. This talk will present a summary of the testing effort, major results and prospects for dark matter searches with this data.

Alternate track

1. Astro-particle Physics and Cosmology

I read the instructions above

Yes

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