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First Glimpses of the SuperCDMS High Voltage Detectors

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The nature of dark matter is one of the most important open questions in the Standard Model, and dark matter direct detection holds exciting promises of new physics. By operating state-of-the-art kilogram-scale detectors at milliKelvin temperatures in one of the world's deepest laboratories, SuperCDMS SNOLAB will be sensitive to a large range of dark matter masses. From October 2023 to March 2024, one SuperCDMS tower, consisting of six High Voltage detectors, was deployed at the Cryogenic Underground TEST facility (CUTE). This marks the first time that the new-generation SuperCDMS detectors are operated in an underground, low-background environment, allowing for a comprehensive detector performance study and possibly early science results. In this talk, I will detail the detector testing efforts and present our first findings about these detectors.

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Keyword-2

SuperCDMS SNOLAB

Keyword-3

CUTE

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