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Characterizing New Detectors for SuperCDMS SNOLAB

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The Super Cryogenic Dark Matter Search (SuperCDMS) uses sub-Kelvin semiconductor detectors to search for dark matter WIMPs (Weakly Interacting Massive Particles), with excellent sensitivity to low mass WIMPs. The collaboration is currently building the next phase, SuperCDMS SNOLAB, with larger and more sensitive detectors. Two different detector designs have been developed: the iZIP design, which can discriminate between electron- and nuclear-recoil events, and the CDMS-HV design, which has extremely low energy thresholds allowing sensitivity to WIMPs with masses well below 1 GeV. Detectors of these designs are being fabricated with two different target materials, germanium and silicon, and all four detector types will be deployed at SNOLAB providing complementary sensitivities. I will report on early tests of prototypes of these new detectors and their performance parameters.

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