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## Results from the second CDMStite run and plans for SuperCDMS

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Gravitational effects observed at different astronomical scales indicate that ~85% of the matter content of the Universe consists of dark matter (DM), whose particles properties remain unknown. Weakly-interacting massive particles (WIMPs) are a well-motivated class of DM candidates, that in some models have typical masses between 1 and 10 GeV.

The purpose of the Super Cryogenic Dark Matter Search (SuperCDMS) experiment is to detect galactic WIMPs scattering off germanium nuclei from a 9.2 kg target arranged in fifteen single-crystal detectors. It has been operating at Soudan Underground Laboratory between March 2012 and December 2015. The latest result from the experiment exploits the potential of SuperCDMS to search for low-mass WIMPs using an operation mode called CDMStite, that enables to set an energy threshold substantially lower than that for nominal operation conditions. This is the second result based on CDMStite, and it improves the previous measurement by using a lower energy threshold and including some background rejection. This result is competitive with other direct DM searches, and probes new parameter space for WIMP masses between 2 and 5 GeV.

The SuperCDMS Collaboration is currently designing a more sensitive experiment that will be operating at SNOLAB. The new experiment is planned to start taking data around 2020, and it is expected to offer a world-leading sensitivity to low-mass WIMPs.

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