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Recent Results of SuperCDMS

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The SuperCDMS experiment has operated a 9kg array of cryogenic detectors to search for weakly interacting massive particles (WIMPs) in the Soudan Underground Lab since early 2012. We have recently finished analyzing 600 kg-d of low-energy data on a subset of detectors with an energy threshold of 1.6 keVnr. The use of the athermal phonon measurement provides position sensitivity, and therefore signal/background discrimination, near the energy threshold of the experiment. We perform an analysis using boosted decision trees and a full detector simulation to optimize our background discrimination and sensitivity to light WIMPs. This allows us to probe recent signal hints from CDMSII-Si and CoGeNT. This talk will present the results of this SuperCDMS low-energy analysis as well as the detector performances at higher energies that will be of particular interest for searching for heavier WIMPs.

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