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SuperCDMS: Recent results on low mass WIMPs

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The SuperCDMS experiment attempts direct detection of Weakly Interacting Massive Particles (WIMPs) through their elastic scattering on an array of cryogenic interleaved germanium detectors (iZIP).

These detectors are instrumented with ionization and phonon sensors that provide position sensitivity and the capability to discriminate nuclear recoils over other sources of background.

In this talk we present the recent results from the first WIMP search using the background rejection capabilities of the SuperCDMS iZIP detectors.

The dataset corresponds to an exposure of 577 kg-day, obtained with seven detectors presenting the lowest trigger threshold, 1.6 KeVnr.

A blinded analysis of this data results in an upper bound for the spin-independent WIMP-nucleon cross section, which is particularly stringent for low-mass WIMPs.

This result is in tension with WIMP interpretations of other recent experiments.

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