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Hunting for Sub-GeV DM with the SENSEI experiment

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The SENSEI Experiment leads the direct-detection searches for sub-GeV dark matter (DM) using the novel Skipper-CCD sensors. The Skipper-CCDs can provide repetitive non-destructive readouts of a single pixel's charge reducing the noise to a negligible level and reaching a single electron distinction.

Already with the small-scale prototype runs, SENSEI achieved the lowest rates in silicon detectors of events containing single, pair, three, or four electrons, and reached world-leading sensitivity for a large range of low-mass DM masses.

We will present recent results from low-mass prototype runs on the surface and in the MINOS cavern at the Fermi National Accelerator and the commissioning of the O(100-gram) SENSEI experiment at SNOLAB.

Collaboration name

SENSEI

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