

Skipper-CCDs and the SENSEI search for sub-GeV dark matter

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SENSEI (Sub-Electron Noise Skipper Experimental Instrument) is a leading experiment in the search for sub-GeV dark matter.

Using the high granularity of CCDs and the sub-electron charge resolution of the Skipper readout, Skipper-CCDs can count individual electron-hole pairs in each of millions of pixels.

The SENSEI Skipper-CCDs have measured the lowest rates in silicon detectors of events containing one, two, three, or four electrons.

This results in world-leading sensitivity for a large range of dark matter masses, and significant improvement is expected with the full-scale SENSEI experiment at SNOLAB.

I will present the SENSEI experiment, and discuss the status and future directions for the Skipper-CCD technology.

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