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Low-energy excess in search for dark matter with DAMIC-SNOLAB

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In 2020, the DAMIC collaboration reported a 3 Sigma excess while searching for low-mass WIMPs using silicon CCD detectors with an analysis energy threshold of 50 eVee that were situated in SNOLAB. Since then, the experiment was upgraded to make use of skipper-CCD readout, which allows single-electron energy resolution. With this upgrade, the energy threshold could be reduced to 23 eVee, improving signal efficiency as well as discrimination between surface and bulk events. The new experimental result from DAMIC@SNOLAB yields a result consistent with the previous, but with a larger significance of 5 Sigma. This presentation will explain the newest DAMIC result in the context of previous results, as well as future prospects.

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