MEETING OF THE AMERICAN PHYSICAL SOCIETY DIVISION OF PARTICLES AND FIELDS

Contribution ID: **345** Type: **Presentation**

The DAMIC Experiment at SNOLAB

Monday, 31 July 2017 11:45 (15 minutes)

Millimeter-thick charge-coupled devices (CCDs) are outstanding particle detectors. Although initially developed for near-infrared astronomy, the low pixel noise also makes them the most sensitive detectors to signals from ionizing radiation. By virtue of their very low energy threshold (<100 eV of ionizing energy) and their unique capabilities for background characterization based on their high spatial resolution, CCDs are poised to become the leading technology in the search for a wide variety of dark matter candidates with masses in the range 1 eV/c/c – 10 GeV/c/c. I will present the status of the DAMIC100 experiment, an ongoing direct dark matter search consisting of an array of 16-Mpixel CCDs hosted in the low-radioactivity environment of the SNOLAB underground laboratory. I will also discuss the recent progress toward DAMIC-1K, a lower-background 1-kg CCD dark matter detector with an ionization threshold of 2 electrons.

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Session Classification: Dark Matter

Track Classification: Dark Matter