



Contribution ID: 204

Type: ORAL

DAMIC: A Search for Dark Matter with CCDs

Friday, 5 September 2014 10:10 (25 minutes)

The DAMIC experiment uses high resistivity, fully depleted CCD's as detectors to search for dark matter particles. The low electronic readout noise (RMS ~ 2 electrons) of the CCD's make possible to reach a detection threshold below 50 eV of deposited energy by nuclear recoils in the silicon target. Owing to these characteristics, DAMIC has an unrivaled sensitivity to WIMPs with masses below 10 GeV. Early DAMIC runs demonstrated the high energy resolution, low energy threshold, and power for background characterization of CCDs, and also achieved the world's best cross-section limits on WIMPs with masses below 4 GeV. These results motivated the construction of DAMIC100, which will have a target mass of 100 grams of silicon and will be installed in SNOLAB during the Summer of 2014. This new detector will directly test the parameter space corresponding to the recent results obtained by CoGeNT and by CDMS-Si, which may be hinting at the presence of a low mass WIMP signal. In this talk we will discuss the challenges associated with the scale-up of the experiment, its current status, and the prospects for the first physics results after a one year run.

Primary author: TIFFENBERG, Javier (Fermi National Accelerator Lab. (US))

Presenter: TIFFENBERG, Javier (Fermi National Accelerator Lab. (US))

Session Classification: Astrophysics and other Pixel Applications