



Contribution ID: 316

Type: **Parallel contribution**

Constraining Light Dark Matter with CDMS II and SuperCDMS

Wednesday 10 August 2011 17:10 (20 minutes)

There has been much recent interest in Weakly Interacting Massive Particle (WIMP) models with masses below $10 \text{ GeV}/c^2$. Data from the Cryogenic Dark Matter Search (CDMS II) have been reanalyzed to give increased sensitivity to these models. Using a lowered, 2 keV recoil energy threshold, we have reanalyzed data from eight germanium detectors operated at the Soudan Underground Laboratory, and used these data to place constraints on light WIMP models. We discuss the compatibility of these results with possible low-mass WIMP signals from the DAMA/LIBRA and CoGeNT experiments, and also discuss prospects for improving SuperCDMS sensitivity to light WIMPs by operating existing detectors in a high-voltage mode.

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