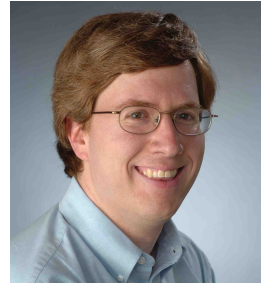


LEPP JOURNAL CLUB

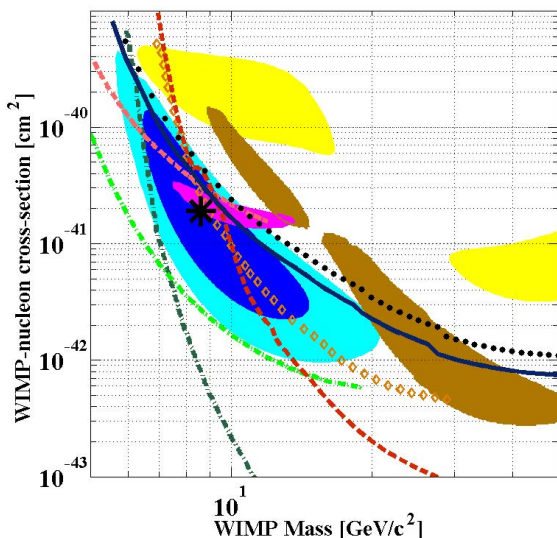
Richard Schnee

Syracuse University



Searches for Low-Mass WIMPs with CDMS II and SuperCDMS

The Cryogenic Dark Matter Search experiment (CDMS II) was designed to directly detect WIMP dark matter by simultaneously measuring phonon and ionization signals caused by particle interactions in semiconductor targets, allowing event-by-event discrimination of signal from background via the relative sizes of the two signals. Data from the CoGeNT, CRESST II, and DAMA/LIBRA experiments have hinted at a low-mass WIMP signal. I will review these results and the (similarly sensitive) analyses performed by the CDMS II collaboration. Most recently, three WIMP candidate events were observed in a blind analysis of data from eight CDMS II Si detectors with an expected background <1 event. I will also describe the prospects for future searches at low mass with the SuperCDMS dark-matter program, including searches with the new interleaved detectors currently taking WIMP-search data in the Soudan Mine (with energy thresholds $\sim 5x$ lower than previous detectors), as well as the long-term expected sensitivity of the SuperCDMS technology.



Monday

April 29, 2:00pm

301 Physical Sciences Building

(Refreshments, 1:45pm)

