

UNIVERSITY OF NOTRE DAME
DEPARTMENT OF PHYSICS

NUCLEAR SEMINAR

Monday, March 19

The Super Cryogenic Dark Matter Search detectors: pushing to lower thresholds in search of an answer

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ND Ph.D. class of 2013

University of Colorado Denver

The cryogenic semiconductor detectors of the Super Cryogenic Dark Matter Search (SuperCDMS) are designed to be sensitive to a hypothesized - but not yet observed - dark matter particle, which makes up approximately 80% of all matter according to a wealth of cosmological measurements.

This talk will give an overview of direct-detection dark matter searches with an emphasis on detector design for a particle that's only understood gravitationally. As detector sensitivity steadily improves but yields no confirmed dark matter signal, interest has increased in looking for lighter-mass dark matter candidates. But searching for lighter-mass particles means lowering detector thresholds, sometimes to the eV scale. I will describe how the SuperCDMS detectors operate in a low-threshold mode and some of the challenges and possible solutions in the low-energy regime.

4 pm – 5 pm
Nuclear Science
Laboratory
124 Nieuwland
Science Hall

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All interested  
persons are  
cordially invited  
to attend

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Refreshments will be
served prior to the
seminar in room 124