

Title: Recent results from the CDMS-II experiment

Name: Tobias Bruch

Affiliation: Zurich University

Email: tbruch@physik.uzh.ch

Abstract

The Cryogenic Dark Matter Search experiment (CDMS-II) operates Ge and Si detectors at cryogenic temperatures, to detect non-luminous, non-baryonic Weakly Interacting Massive Particles (WIMPs), that could form the majority of the matter in the Universe, via their elastic scattering off nuclei. The CDMS-II experiment currently runs 5 Towers (30 detectors) with a total mass of 4.75 kg (1.1 kg) Ge (Si), at the Soudan Underground Laboratory. By analyzing the phonon and ionization signal of an interaction in the crystals, the CDMS-II experiment achieved a background free signal window. CDMS-II has been in WIMP search data taking mode from October 2006 to July 2007 accumulating 650 kg days of raw exposure in Ge. The analysis of this data, result in a 90%CL limit on the WIMP-nucleus scattering cross section of $6.6 \times 10^{-44} \text{ cm}^2$ ($4.6 \times 10^{-44} \text{ cm}^2$ when combined with previous CDMS data) at a WIMP mass of 60 GeV. The latest results along with the implications for theoretical WIMP models, and future developments of the CDMS experiment will be presented.