

Systematics of Low Threshold Modulation Searches in CDMS-II

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The Cryogenic Dark Matter Search experiment (CDMS-II) uses ground-based germanium and silicon detectors to search for the scattering of Weakly Interacting Massive Particles (WIMPs), which are among the leading candidates for the dark matter component of the universe. Using the ionization and athermal phonons measured in particle interactions, CDMS-II is able to achieve excellent discrimination between the nuclear recoils expected for WIMP interactions and radioactively produced electron recoils. With the rise of interest in the low energy interactions of light mass WIMPs, CDMS-II has undertaken a search for an annually modulating signal at low thresholds. Previous results detailed the analysis of data from eight germanium detectors over the course of six runs, to thresholds of 5 keVnr (nuclear recoil energy). We will discuss the impact of systematics at these low thresholds and their implications for thresholds down to 2.27 keVnr.

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