

Abstract Submitted
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Systematic uncertainties in the search for annual modulation in CDMS-II DANIELLE SPELLER, University of California, Berkeley, SUPER-CDMS COLLABORATION — Weakly Interacting Massive Particles (WIMPs) have long been one of the leading candidates for dark matter, the undetected mass component comprising $\sim 27\%$ of the universe. The primary indicator of a WIMP signal is an excess in the nuclear-recoil event rate measured by a detector, while the revolution of the Earth about the Sun introduces a periodicity in the detector-WIMP relative velocity, resulting in an annual modulation of the WIMP rate. This combination of excess and modulation is an important hallmark for a signal of WIMP origin. The Cryogenic Dark Matter Search (CDMS) experiment uses semiconductor crystals to search for WIMPs scattering from atomic nuclei through the simultaneous measurement of ionization and athermal phonons. This technique achieved excellent discrimination between nuclear recoils (expected for WIMP interactions) and radioactively induced electron recoils, enabling a sensitive search for an annually modulating signal. I will discuss the results of this search, including possible systematic effects, and describe implications for interpretations of other experimental results such as those from the CoGeNT experiment.

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