

Abstract Submitted
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Characterization of the CDMS Ionization Readout ARRAN Phipps, CDMS/UC Berkeley, CDMS COLLABORATION¹ — Current cosmological models predict that a large portion of the total mass of the universe, about eighty percent, consists of putative dark matter. Theory predicts this dark matter may be in the form of particles constantly passing through the Earth. A class of these particles may interact with ordinary matter, earning the name weakly-interacting massive particles (WIMPs). The Cryogenic Dark Matter Search (CDMS) aims to directly detect the existence of WIMPs. CDMS has designed ZIP (Z-dependent Ionization & Phonon) detectors which measure phonon production and ionization of an interaction, making it possible to determine the interacting particle. The low-energy threshold of the ZIP detectors is determined by the signal-to-noise ratio of the ionization readout. A characterization of the signal-to-noise ratio of the ionization readout, along with possible modifications for improved sensitivity will be presented.

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