

Dark Matter Detector Calibration with Neutron Capture

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Ongoing experiments are searching for dark matter or coherent neutrino scattering signals via the identification of nuclear recoils using germanium and silicon as detector materials. At the sub-keV recoil energy scales being probed by the latest generation of such experiments, the ionization yield of nuclear recoils in germanium and silicon is an important, but poorly characterized, material property. A technique has been proposed to measure this yield using the spectrum of nuclear recoils resulting from nuclear de-excitation following thermal neutron capture in the detector crystal. This talk will discuss experiments undertaken to measure this signal in germanium and silicon detectors developed for the Super Cryogenic Dark Matter Search at SNOLAB and a preliminary yield measurement from a silicon detector will be presented.

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