

Abstract Submitted
for the TSF17 Meeting of
The American Physical Society

A Preliminary Study of Frenkel Defects from SuperCDMS

Soudan MATTHEW STEIN, Southern Methodist University, SUPERCDMS COLLABORATION — The next generation of dark matter direct detection experiments will require higher than ever sensitivity to WIMP-nucleon interactions. This can be achieved in part through better backgrounds modeling. During the operation of the SuperCDMS Soudan experiment, ^{210}Pb sources were used for calibration purposes. Data from these sources present an opportunity to study defect formation in Ge crystals from ^{206}Pb recoils. We specifically look for Frenkel defects which occur when an atom is displaced from its lattice site and occupies an interstitial site elsewhere in the crystal. The study of these defects can lead to better backgrounds modeling, a new parametrization of the Stillinger-Weber potential, and a possible increase in projected sensitivity for future experiments. Presented here is a preliminary study of Frenkel defects.

Matthew Stein
Southern Methodist University

Date submitted: 28 Sep 2017

Electronic form version 1.4