Contribution ID: **146** Type: **Contributed talk**

Backgrounds in the planned SuperCDMS SNOLAB dark matter experiment

Tuesday 25 July 2017 16:45 (15 minutes)

The planned SuperCDMS SNOLAB dark matter experiment will seek direct detection of WIMP-like dark matter with masses in the 0.5-10 GeV/c^2 mass range. The experiment will employ four types of cryogenic radiation detectors sensitive to phonon and ionization signals. At the lowest recoil energies electron recoil backgrounds are expected to limit the cross section reach to ~10^{-43} cm^2 near 1 GeV/c^2 dark matter mass. At higher recoil energies electron recoil and nuclear recoils are distinguishable on an event-by-event basis and it is expected for some recoil energy ranges solar neutrinos scattering coherently off detector nuclei will be the limiting background. This presentation will review the primary backgrounds expected in the SuperCDMS SNOLAB experiment, detailing their sources, and respective contributions. Discussion will include measures planned to mitigate and control the most significant background sources.

Primary author: ORRELL, John L. (Pacific Northwest National Laboratory)

Co-author: THE SUPERCDMS COLLABORATION

Presenter: ORRELL, John L. (Pacific Northwest National Laboratory)

Session Classification: Dark Matter

Track Classification: Dark Matter