



Contribution ID: 272

Type: parallel talk

Implications of neutrino backgrounds for the direct detection of sub-GeV DM-electron scattering

Tuesday, 9 May 2017 17:00 (15 minutes)

The direct detection of sub-GeV dark matter (DM) has received increased interest in the last few years. Recent proposals for experimental ideas using DM-electron scattering have opened up previously unexplored, but theoretically well-motivated, regions of parameter space. As these experiments increase their cross-section reach, they will start to become sensitive to astrophysical neutrinos. The coherent scattering of neutrinos can mimic a DM signal, and for experiments without directional sensitivity, is indistinguishable from DM. In this talk, I will present the minimum cross-sections for which one can distinguish between neutrino and DM signals, for a variety of materials. These results will have important implications for experiments that can probe sub-GeV DM-electron scattering such as SENSEI and SuperCDMS.

Summary

Primary authors: ESSIG, Rouven (YITP, Stony Brook); SHOLAPURKAR, Mukul (Stony Brook University); YU, Tien-Tien (CERN)

Presenter: SHOLAPURKAR, Mukul (Stony Brook University)

Session Classification: DM IV