



Canadian Association
of Physicists

Association canadienne
des physiciens et physiciennes

Contribution ID: 3791 Type: **Oral not-in-competition (Graduate Student) / Orale non-compétitive (Étudiant(e) du 2e ou 3e cycle)**

Status of NEWS-G3 Experiment and Muon Veto System

Wednesday 21 June 2023 16:30 (15 minutes)

The NEWS-G experiment searches for low-mass dark matter candidates at SNOLAB in Sudbury, Ontario. The direct dark matter search is performed using a spherical proportional counter (SPC) filled with light atomic mass gases. NEWS-G3 is a proposed experiment that employs the same technology as the NEWS-G experiment to search for coherent elastic neutrino-nucleus scattering (CEvNS) at a nuclear reactor. NEWS-G3 will consist of a 60-cm high purity copper SPC implemented in a compact shield consisting of many different layers of material. One layer of shielding is an active muon veto system consisting of plastic scintillators coupled with a photomultiplier tube (PMT). In this presentation, I will present the current status of the NEWS-G3 experiment at Queen's University and the commissioning of the muon veto system. I will also discuss the results of my undergraduate thesis of the background decomposition of the NEWS-G3 experiment.

Keyword-1

neutrino nucleus scattering

Keyword-2

low threshold detector

Keyword-3

low background detector

Authors: SAVVIDIS, Georgios; MEADOWS, Hayden (Queen's University)

Presenter: SAVVIDIS, Georgios

Session Classification: (PPD) W3-1 DM / Neutrino 4 | DM / Neutrino 4 (PPD)

Track Classification: Technical Sessions / Sessions techniques: Particle Physics / Physique des particules (PPD)