



Canadian Association
of Physicists

Association canadienne
des physiciens et physiciennes

Contribution ID: 4008

Type: **Poster (Non-Student) / Affiche (Non-étudiant(e))**

(POS-6) NEWS-G: Spherical Proportional Counters for dark matter search at SNOLAB

Tuesday, June 20, 2023 5:40 PM (2 minutes)

NEWS-G is an experiment searching for dark matter using the Spherical Proportional Counter (SPC) technique. Such detectors can operate significant mass of target, of order of kgs with meter size spheres, while keeping single ionization electron detection sensitivity. They can be filled with gaseous targets of low atomic mass such as hydrogen, helium, and neon, giving sensitivity to low mass WIMPs down to (0.1GeV).

The poster will show the principle of operations of the SPC and a description of the 140cm diameter detector and compact shielding, installed in the SNOLAB underground facility. It will address the challenges of building such a facility underground, with low radioactivity materials.

The poster will also introduce projects to improve the SPC performance, and expand their reach to coherent elastic neutrino-nucleus scattering (CEvNS)

Keyword-1

dark matter

Keyword-2

detector

Keyword-3

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Session Classification: PPD Poster Session & Student Poster Competition (6) | Session d'affiches PPD et concours d'affiches étudiantes (6)

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