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(G*) The NEWS-G dark matter experiment: Shifting from LSM to SNOLAB data

Monday 27 May 2024 11:00 (15 minutes)

The NEWS-G experiment uses spherical proportional counters (SPC) to probe for low mass dark matter. An SPC is a metallic sphere filled with gas with a high-voltage anode at its centre producing a radial electric field. The interaction between a dark matter particle and a nucleus can cause ionization of the gas, which leads to an electron avalanche near the anode and a detectable signal.

The latest NEWS-G detector, S-140, is a copper sphere of 140 cm of diameter, which took 10 days of data with methane at the LSM, and is now taking data with various gases at SNOLAB. The LSM campaign brought forward some interesting new techniques to build upon and a few issues to try to mitigate for the future of the detector and data analysis in SNOLAB.

This talk will describe the NEWS-G experiment, present the latest results from the LSM data and discuss the progress on data taking and analysis at SNOLAB.

Keyword-1

dark matter

Keyword-2

NEWS-G

Keyword-3

SNOLAB

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