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Research and Development for the NEWS-G Dark Matter experiment

Monday 11 June 2018 12:00 (15 minutes)

NEWS-G (New Experiments With Spheres-Gas) is a direct dark matter detection experiment using Spherical Proportional Counters (SPCs). SPCs are gaseous detectors, where different gases can be used to optimise sensitivity for different dark matter masses. First results using Neon in the prototype SEDINE at Laboratoire Sousterrain de Modane (LSM) were presented at the 2017 CAP Congress.

I will describe the development work performed at Queen's University to improve this technology. The improvement will be implemented at a larger experiment planned to run at SNOLAB at the end of 2018. I will show how we improved the electric field with new sensors. I will show how we purify the gas and precisely monitor its composition. I will also show how we improved our understanding of the detector using radioactive sources and a calibration laser.

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Session Classification: M1-2 Particle Physics I (PPD) | Physique des particules I (PPD)

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