

# NEWS-G: Search for Light Dark Matter with a Spherical Proportional Counter

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The NEWS-G collaboration is searching for light dark matter candidates using a novel gaseous detector concept, the spherical proportional counter. Access to the mass range from 0.05 to 10 GeV is enabled by the combination of low energy threshold, light gaseous targets (H, He, Ne), and highly radio-pure detector construction. First physics results using the commissioning data of a 140 cm in diameter spherical proportional counter, S140, constructed at LSM using 4N copper with 500 um electroplated inner layer will be presented, along with the new developments in read-out technologies using resistive materials and multi-anode read-out. The first physics campaign in SNOLAB with the detector was recently completed. The potential to achieve sensitivity reaching the neutrino floor in light Dark Matter searches with a next generation, fully electroformed detector, DarkSPHERE, will also be presented.

## Alternate track

### I read the instructions above

Yes

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