



Contribution ID: 25

Type: **not specified**

The NEWS-G Direct Dark Matter Search Experiment: First Results and Outlook (student talk)

Friday, 16 February 2018 19:30 (15 minutes)

The NEWS-G direct dark matter search experiment employs spherical proportional counters (SPCs) with light noble gases as target media to search for low-mass WIMPs. We report on the results of a 42 kg.day physics run with a 60 cm diameter SPC and a neon target, operated at the Laboratoire Souterrain de Modane. World leading constraints on the spin-independent WIMP-nucleon scattering cross section have been established at a mass of 0.5 GeV. Outlook for the next iteration of the experiment will also be presented; a 140 cm diameter SPC to be operated at the underground SNOLAB facility in Sudbury, Ontario. It will take advantage of neon and lighter targets such as helium and hydrogen, as well as improved shielding and radiopure construction materials, to improve sensitivity to low-mass WIMPs.

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Session Classification: Session #3