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NEWS-G: status and quenching factor measurements.

Sunday 10 November 2019 16:40 (30 minutes)

NEWS-G (New Experiments With Spheres-Gas) is a rare event search experiment using Spherical Proportional Counters (SPCs) that aims to extend the sensitivity of direct dark matter searches from 0.1 to few GeV mass range. The talk will cover the current status of the experiment and the recent commissioning at LSM.
Primarily designed for the direct detection of dark matter, this technology also has appealing features for Coherent Neutrino-Nucleus Scattering (CEνNS) studies using nuclear power plants as a neutrino source. For both applications, an important property of the gas to characterize is the ionization yield, or quenching factor, defined as the ratio of the measured energy induced by a nuclear recoil and an electronic recoil of the same energy. Quenching factor measurements in Neon based gas mixtures are being performed at TUNL (Triangle Universities Nuclear Laboratory) using a neutron beam and an array of backing detectors. We will present the set-up and techniques for quenching factor measurements and the last results obtained from measurement campaigns.

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Session Classification: Quenching factors