

SuperCDMS SNOLAB Near-Term and Long-Term Plans

Monday 10 May 2021 12:00 (20 minutes)

SuperCDMS SNOLAB will search for dark matter using phonon- and ionization-mediated sub-Kelvin detectors in a new low-background, cryogenic facility under construction in the SNOLAB Ladder Lab. The experiment will have sensitivity to the mass range 0.5-5 GeV using nuclear recoils and to MeV masses using electron recoils. We anticipate science data-taking will begin in 2023 with two science runs during a 4-year operations phase 2023-2027, the details of which we will outline. We are already anticipating evolution of the detector payload after 2027. A long-term planning effort is working to define development scenarios that would enable multiple future dark matter searches in the SuperCDMS SNOLAB facility. One possible scenario would yield new mass reach below 0.5 GeV using nuclear recoils via a new detector payload soon after 2027. This scenario would involve installation of gram-scale detectors with eV-scale thresholds in the current facility with no significant infrastructure changes. We will also comment on potential post-2029 scenarios for the facility. We will discuss how this program will make use of CUTE as a testbed for technology to be deployed in SuperCDMS SNOLAB.

Presenter: GOLWALA, Sunil

Session Classification: Dark Matter Searches