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## **(I) Status of the SNO+ experiment**

*Tuesday 8 June 2021 12:00 (20 minutes)*

Neutrinos present a portal into understanding some of the most significant puzzles of modern physics, even as the nature of the neutrino is still mysterious. SNO+ is well positioned to examine some of those puzzles. Located 2 km underground in the Vale Creighton mine in Sudbury at the international facility SNOLAB, SNO+ is the largest liquid scintillator neutrino detector currently in operation. The depth of the experiment makes further measurements of Solar neutrinos possible while the geography makes reactor neutrino measurements possible. The crowning measurement of the experiment is the search for neutrino-less double beta decay which will probe the mass and nature of the neutrino itself. Throughout the filling period, data have been collected that are being used to evaluate the performance of the detector and to make some initial measurements of solar and reactor neutrino physics. Some of those first results will be presented as well as updated results from the previously completed water phase. This presentation will also introduce the physics program of the experiment and give an update of the status of the experiment.

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**Session Classification:** TS4-2 Probing the nature of Neutrino (PPD Neutrino Physics and Beyond Symposium) / La nature du neutrino (Symposium PPD sur la physique du neutrino et au delà)

**Track Classification:** Symposia Day (PPD) - Neutrino Physics and Beyond