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Status and Prospects of the SNO+ Experiment

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SNO+ is a large volume liquid scintillator experiment for neutrino physics located at SNOLAB, Canada. Using the 12 m diameter acrylic vessel and the PMT array of the SNO detector, SNO+ has the primary physics goal of searching for the neutrinoless double-beta decay of the ^{130}Te isotope. Data collected will also be used to explore additional physics topics such as reactor antineutrino oscillations, solar neutrinos, geoneutrinos, and to search for exotic physics.

As a multipurpose neutrino detector, SNO+ must have a very good understanding of its response characteristics, including the optical properties of the detector media and the PMTs. A complete optical calibration of the detector was performed during the initial water phase using a deployed source. Currently, the detector is completely filled with liquid scintillator, to which 1.3 tons of Te-130 is expected to be loaded later next year. I will present the prospects for the search of neutrinoless double beta decay in the Te phase and discuss the current status and results of the experiment, including the results of calibration and backgrounds.

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