

Calibration and rare physics searches with the SNO+ experiment

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The SNO+ collaboration has upgraded the SNO detector to pursue a wide range of physics goals, which will be achieved in three distinct phases. In the ongoing water phase, a search for invisible nucleon decays with expected lifetime sensitivities as high as $10^{28} - 10^{30}$ years is being conducted. In the upcoming scintillator phase, the increased light yield will lower the energy threshold, allowing studies of solar neutrinos, geoneutrinos, reactor antineutrinos, and supernova neutrinos to begin. Finally, in the double-beta phase, the active volume will be doped with Tellurium, allowing the search for neutrinoless double-beta decay. In order to measure such rare events, both the backgrounds and the detector response must be well understood - precise calibration methods are therefore required. This presentation will give an overview of the calibration methods and discuss the status of the nucleon decay search.

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