Poster session 4 – Friday 8 July

P4.069 **Calibration of the SNO+ experiment**

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on behalf of SNO+ collaboration

The main goal of the SNO+ experiment is to perform a low-background and highisotope-mass search for neutrinoless double-beta decay, employing 780 tons of liquid scintillator loaded with tellurium, in its initial phase at 0.5% by mass for a total mass of 1330 kg of ^{130}Te. The SNO+ physics program includes also measurements of geo- and reactor neutrinos, supernova and solar neutrinos. Calibrations are an essential component of the SNO+ datataking and analysis plan. The achievement of the physics goals requires both an extensive and regular calibration. This serves several goals: the measurement of several detector parameters, the validation of the simulation model and the constraint of systematic uncertainties on the reconstruction and particle identification algorithms.

SNO+ faces stringent radiopurity requirements which, in turn, largely determine the materials selection, sealing and overall design of both the sources and deployment systems. In fact, to avoid frequent access to the inner volume of the detector, several permanent optical calibration systems have been developed and installed outside that volume. At the same time, the calibration source internal deployment system was re-designed as a fully sealed system, with more stringent material selection, but following the same working principle as the system used in SNO.

This poster will describe the overall SNO+ calibration strategy and discuss the several new and innovative sources, both optical and radioactive, as well as cover the developments on source deployment systems.