

SNO+ Calibration Hardware

The SNO+ experiment has a varied neutrino physics program that includes a neutrino-less double beta decay experiment in addition to reactor, solar, and geoneutrino measurements. SNO+ uses the architecture of SNO, using an acrylic vessel filled with scintillator as its neutrino target suspended in a water volume. At this time data is being collected with the acrylic vessel filled with water in preparation for the scintillator phase. An essential component to the successful execution of this physics program is a calibration of the optical and energetic response of the detector. Calibrations are underway using a laser-driven light source and radioactive gas sources, such as Nitrogen-16, that are to be lowered into the detector vessel on an umbilical. The position can be manipulated in 1-D using the umbilical retrieval mechanisms (URM) or in 2-D using ropes to guide the source off-axis. The sources and drive systems will be presented here with the goals of the calibration in the context of its impact on the SNO+ physics program.

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