

Underwater Photometry System of the SNO+ experiment

The SNO+ experiment is a large scale liquid scintillator-based experiment, adapting the Sudbury Neutrino Observatory (SNO) detector located at SNOLAB, Canada. The main physics goal is to investigate the Majorana nature of neutrinos through the search for the neutrinoless double-beta decay of ^{130}Te . The camera system of the SNO+ is designed to photograph calibration sources and triangulate their locations with an accuracy of a couple of centimeters. This will lead to better calibrations and more accurate physics measurements in SNO+. The camera system, when operated in a special mode with underwater lights, turned on also allows monitoring of the physical state of the detector, including the position of the rope net using underwater cameras. Installed cameras have been used to determine the displacement of the acrylic vessel during the water fill. The LASER ball will be deployed soon in the water filled SNO+ detector which will give us an opportunity to test the position accuracy of the deployed source.

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