

## SMELLIE: A Laser Calibration System for SNO+

SNO+ is a general purpose neutrino detector 2km underground in SNOLAB. Its main aim is a neutrinoless double beta decay search in  $^{130}\text{Te}$ . It consists of a 6m radius acrylic vessel filled with the detection medium and surrounded by ~9300 PMTs on a support structure (PSUP) at a radius of ~8.9m.

Having a good understanding of detector response is vital for success. One contribution to this is SMELLIE (the Scattering Module for the Embedded LED/Laser Light Injection Entity). SMELLIE is an in-situ optical calibration system designed to measure and characterise scattering properties of the detector. It consists of 15 optical fibres attached to the PSUP, connected to 5 lasers above the detector, with a wavelength range from 375 –700nm.

SMELLIE has been commissioned during the water phase of SNO+, in which the longer scattering and absorption lengths and lack of re-emission make it possible to extract the beam profiles and understand the response of the internal monitoring system.

### Authorship annotation

On behalf of the SNO+ collaboration

### Session and Location

Monday Session, Poster Wall #83 (Auditorium Gallery Left)

### Poster included in proceedings:

yes

**Primary author:** Ms TURNER, Esther (University of Oxford)

**Presenter:** Ms TURNER, Esther (University of Oxford)

**Track Classification:** Poster (participating in poster prize competition)