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Type: **Talk**

## SoLid – Measuring Reactor Anti-neutrinos at Very Short Baselines

*Wednesday, 1 September 2021 11:30 (30 minutes)*

SoLid (Search for short oscillation using  ${}^6\text{Li}$  detector) is measuring the flux of electron anti-neutrinos close to the 60 MW BR2 nuclear reactor at SCK•CEN in Mol, Belgium. The detector is installed at a distance of just over 6 m from the compact reactor core and is constructed from an array of  $5\times 5\times 5\text{ cm}^3$  PVT based scintillator cubes, which are optically coupled to  ${}^6\text{Li}:\text{ZnS}(\text{Ag})$  scintillator foils. Neutrinos are detected through the inverse Beta Decay (IBD) reaction. The resulting positron is detected through the scintillation light produced in the PVT, while the neutron thermalizes and is captured by the  ${}^6\text{Li}$ . Both scintillators have quite different signatures, which allow the separation of the electromagnetic and nuclear signals.

This presentation will give a motivation for the search for sterile neutrinos followed by an introduction to the SoLid detector and the first physics results after two years of data-taking. It will conclude with a description of the detector upgrade in the summer 2020 and the perspective for the final measurements.

### Is this abstract from experiment?

Yes

### Name of experiment and experimental site

SoLid at BR2 nuclear reactor SCK-CEN

### Is the speaker for that presentation defined?

Yes

### Details

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### Internet talk

No

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