Contribution ID: **151** Type: **Poster**

Bringing Back the Senses to LUX-ZEPLIN

Wednesday, 10 July 2024 17:10 (20 minutes)

The LUX-ZEPLIN (LZ) experiment set world-leading limits for spin-independent WIMP-nucleon interactions above 10 GeV/c^2, with its first science run results released in 2022. Background characterisation and a complete understanding of the detector and internal conditions is vital to achieve and improve upon such limits; in the chance of discovery, these are a necessity to provide a foundation for the result. LZ utilises a dual-phase time projection chamber (TPC) with 7 tonnes of active xenon to generate and image signals within the detector. Acoustic sensors; loop antennae; and weir-level sensors were developed and installed on the detector to monitor the vibrational and electromagnetic environments as well as detect the presence of any surface waves within the TPC.

I will showcase the first studies into monitoring the internal conditions of the TPC using these sensors, including any correlations found between these conditions and backgrounds observed.

Primary author: SWAIN, Anthony (University of Oxford, LZ Experiment)

Presenter: SWAIN, Anthony (University of Oxford, LZ Experiment)

Session Classification: Poster session

Track Classification: Poster session: Direct detection