Contribution ID: **274** Type: **Parallel Talk**

An overview of the nEXO experiment

Saturday, 9 July 2022 14:30 (15 minutes)

The nEXO experiment is a proposed next-generation liquid xenon experiment to search for neutrino-less double beta decay ($0\nu\beta\beta$) of ^{136}Xe. The experiment will use a 5-tonne liquid xenon monolithic time projection chamber enriched to 90% ^{136}Xe. Ionization electrons and scintillation photons from energy deposits in the detector will recorded by a segmented anode and a large area SiPM array. This talk will present recent progress in the detector design, an improved modelling of signal readout and the development of a deep neural network based data analysis architecture to improve signal/background separation. These developments result in a 90% CL $0\nu\beta\beta$ halflife sensitivity of 1.35×10^{28} yrs in 10 years of data taking.

In-person participation

No

Primary author: LI, Zepeng (UCSD)

Presenter: LI, Zepeng (UCSD)

Session Classification: Detectors for Future Facilities, R&D, novel techniques

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