

Abstract Submitted
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Sensitivity of the nEXO neutrinoless double beta decay experiment BRIAN LENARDO, Stanford Univ, NEXO COLLABORATION COLLABORATION — The nEXO experiment is a proposed next-generation search for the neutrinoless double beta decay (NDBD) of ^{136}Xe . The primary detector will be a 5-tonne, monolithic liquid xenon TPC enriched to 90% in the isotope of interest. A detailed study of the expected sensitivity, published in 2016, calculated the 90% CL exclusion sensitivity on the NDBD half life to be 9.2×10^{27} yrs, approximately two orders of magnitude beyond existing limits. In this talk, we will discuss ongoing work to produce a new evaluation of the sensitivity, given updates to the simulations, analysis, radioassay, and detector design. Specific improvements that have been made since the last publication include detailed modeling of signal development in the charge readout tiles, the development of new machine-learning analyses to improve signal/background separation, detailed accounting for the open field cage design of the nEXO TPC, improved radioassay results of the detector components, and an updated detector geometry which reflects changes made to the engineering design over the past three years.

Brian Lenardo
Stanford Univ

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