

The nEXO experiment

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The nEXO Collaboration is designing a very large detector for neutrino-less double beta decay of Xe-136. The nEXO detector is rooted in the the currently-running EXO-200 program, which has reached a sensitivity for the half life of the decay of 1.9×10^{25} years with and exposure of 99.8 kg-yr. The baseline nEXO design uses 5 tonnes of liquid xenon, enriched in the mass 136 isotope, in a time projection chamber with scintillation readout. The detector is designed to reach a half-life sensitivity of $>5 \times 10^{27}$ years and cover the inverted neutrino mass hierarchy with 5 years of data. We present the nEXO detector design, the current R&D, and the physics case for the experiment.

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