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nEXO: the next generation neutrinoless double beta decay search

YI-HSUAN LIN[1], Drexel University, NEXO COLLABORATION — The nEXO experiment will search for neutrinoless double beta decay ($0\nu\beta\beta$), a rare nuclear process that only occurs if neutrinos are Majorana particles, using 5 tonnes of isotopically enriched liquid ^{136}Xe. nEXO will expand upon the experience of the successful EXO-200 experiment, including a scaled up version of an ultra-low background single-phase time projection chamber with scintillation and ionization readouts. Current projected half-life sensitivity of nEXO is $> 5{\times}10^{27}$ years with 5 years of data, which probes the inverted neutrino mass hierarchy. The current R&D progress and the physics potential of nEXO will be discussed in this talk.

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