

Abstract Submitted
for the SES19 Meeting of
The American Physical Society

nEXO Cryogenics Research & Development: LN2 Thermosyphon

WILLIAM JARRATT, TIM DANIELS, University of North Carolina at Wilmington — The nEXO Collaboration has proposed a tonne-scale search for neutrinoless double-beta ($0\nu\beta\beta$) decay in ^{136}Xe . While it will in many ways be modeled after its predecessor EXO-200, the increase in scale will drive some design changes, including the use of a thermosyphon system instead of refrigerators for maintaining the cryostat temperature. Cooled passively by LN2, these gravity-assisted heat transport devices utilize the phase transition of nitrogen as an internal working fluid. We are developing a thermosyphon for nEXO R&D modeled on one developed for the LUX dark matter experiment. The system design, instrumentation, and control scheme will be reviewed and initial thermal testing results presented. Replace this text with your abstract body.

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Date submitted: 30 Sep 2019

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