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SiPM Stability Tests for nEXO

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nEXO is a next-generation experiment that aims to search for neutrinoless double beta decay in 5 tonnes of liquid xenon (LXe), enriched to 90% in the double beta decaying isotope Xe-136. The detector is designed as a single-phase time projection chamber where anti-correlated ionization and scintillation signals will be recorded and used to reconstruct the energy, position, and spatial time topology of each event. A large array of silicon photomultipliers (SiPMs) will detect the vacuum ultraviolet (VUV) scintillation light in nEXO. Stable and uniform performance of these SiPMs is required for the planned 10-year livetime of the experiment. In addition to electrical and optical characterization, nEXO SiPMs will be tested after controlled exposure to various amounts of VUV light. I will report on the in-vacuum response of Hamamtsu VUV4 SiPMs to Xe scintillation light following exposure to high density VUV light.

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Please select: Experiment or Theory

Experiment

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