

Abstract Submitted  
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**Characterization of Silicon Photomultipliers for the nEXO experiment** LUCA DORIA, TRIUMF — The search for the neutrinoless double beta decay represents a test of the Majorana nature of neutrinos and at the same time a test of lepton number conservation. Building on the experience gained with the EXO-200 experiment, nEXO is a next generation detector designed for searching neutrinoless double beta decay events with a 5 tonne liquid Xenon time projection chamber (TPC). The detection of this decay requires a very low background experimental setup and excellent energy resolution. In a TPC, both scintillation and ionization signals are detected. For detecting scintillation light from Xenon, silicon photomultipliers (SiPM) represent the currently considered technology. For identifying the appropriate device meeting the nEXO requirements, different state of the art SiPMs are presently characterized using the TRIUMF setup. We will present results on SiPM characterizations regarding their main characteristics: dark noise, afterpulsing and photodetection efficiency in different experimental conditions. References: [1] <https://nexo.llnl.gov/> [2] I. Ostrovskiy et al., Nuclear Science, IEEE Tr. , vol.62, no.4, pp.1825,1836 (2015).

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