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Calibration of nEXO light response PRAKASH GAUTAM, Drexel University, NEXO COLLABORATION — nEXO is a proposed 5 tonne liquid xenon experiment which seeks to detect neutrinoless double beta decay($0\nu\beta\beta$) in Xe-136 using Time Projection Chamber(TPC) technology. The experiment will use the combination of scintillation and ionization signals to reconstruct events with an energy resolution of 1% σ/E at the $0\nu\beta\beta$ Q-value. The scintillation light will be collected by silicon photomultipliers (SiPMs) around the sides of the detector, and their collection efficiency will vary as a function of event position. In this talk, we present the strategy for calibrating light response in the nEXO detector. We will deploy a suite of calibration sources, including external γ-ray sources and internal sources dissolved in the liquid xenon. Using nEXO Monte Carlo data, we have demonstrated the use of machine learning techniques to effectively map the light response of the detector while minimizing calibration time.

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