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Electrostatic simulation of a liquid xenon purity monitor JARED GDANSKI, Drexel Univ, NEXO COLLABORATION — Liquid xenon detectors like the proposed nEXO neutrinoless double beta decay experiment use scintillation and ionization signals to track the position and energy of radiation events in the detector. Ionization signals can be diminished by impurities in the xenon. We have designed a liquid xenon purity monitor with high voltage switching capability to measure long electron lifetimes for studying detector materials. We discuss the use of COMSOL electrostatic simulation software to model the field cage of this purity monitor and simulate the electron transport efficiency. An intensive study of the high voltage switching region and shielding grids was completed to ensure uniform electric fields and grid transparencies in the purity monitor.

Jared Gdanski
Drexel Univ

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