

Abstract Submitted  
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**Waveform Simulation for Pulse Shape Analysis Validation**<sup>1</sup> BENJAMIN SHANKS, University of North Carolina at Chapel Hill, MAJORANA COLLABORATION — Background reduction techniques are critical for successful detection of rare events. To facilitate its search for neutrinoless double beta ( $0\nu\beta\beta$ ) decay, the MAJORANA DEMONSTRATOR aims to achieve a background goal of  $< 3$  counts/tonne-year in the 4-keV-wide region of interest. The p-type point contact germanium detectors used in the DEMONSTRATOR are sensitive to the distribution of interaction sites in the crystal bulk. The signal generated by single-site events, such as the  $0\nu\beta\beta$  decay signal, can be distinguished from multi-site background events using a pulse shape analysis (PSA) algorithm. The details of a simulation-based framework to validate PSA techniques are presented here.

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