

Abstract Submitted  
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**Detector Characterization for the Majorana Project** ELIZA OSENBAUGH-STEWART, REYCO HENNING, TUNL - UNC, MAJORANA PROJECT COLLABORATION — The Majorana Project aims to measure neutrinoless double-beta decay or definitively rule out significant portions of the allowed neutrino mass space. Neutrinoless double-beta decay is a very rare decay and count rates are expected to be very low, on the order of a few hundred counts per ton year or less. It is therefore crucial that background rates be very low. Detector characterization allows us to optimally utilize Pulse Shape Discrimination to reduce background rates. We present a new method of HPGe detector characterization that will decrease the time required to fully characterize a detector. This is critical to maintain the required production rate for crystals for the Majorana Project. A set of collimated pencil gamma-ray beam data will be compared to a set of simulated pulse shapes and the parameters optimized to create a full characterization scheme without the need for a secondary collimator orthogonal to the beam.

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