

Abstract Submitted
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Precision energy measurement using the MAJORANA DEMONSTRATOR¹ IAN GUINN, Univ of Washington — The MAJORANA DEMONSTRATOR is seeking neutrinoless double beta decay ($0\nu\beta\beta$) in ^{76}Ge . The $0\nu\beta\beta$ signal consists of a peak in a 4 keV region of interest (ROI) at the ^{76}Ge double-beta decay Q-value of 2039 keV. The DEMONSTRATOR will consist of an array of high purity germanium (HPGe) detectors with a P-type point contact (PPC) geometry. The experiment's goal is to reduce the background in the ROI to < 3 counts/ROI-tonne-yr. Precise calculation of the energy of each event can help to shrink the size of the ROI, thus reducing the background counts. A precise measurement of the response function of the detectors is important for calculating the ROI and controlling systematic errors on the limits produced. This presentation will describe the measurement of the response function using calibration data, along with several techniques used to improve the energy calculations, such as correcting for charge trapping in detectors and digitizer non-linearities.

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