Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Pulse Shape Discrimination in the MAJORANA DEMONSTRATOR[1] CHRISTOPHER HAUFE, Univ of NC - Chapel Hill, MAJORANA COLLABORATION — The MAJORANA DEMONSTRATOR is an experiment constructed to search for neutrinoless double-beta decays in germanium-76 and to demonstrate the feasibility to deploy a large-scale experiment in a phased and modular fashion. It consists of two modular arrays of natural and 76Ge-enriched germanium p-type point contact detectors totaling 44.1 kg, located at the 4850' level of the Sanford Underground Research Facility in Lead, South Dakota, USA. A large effort is underway to analyze the data currently being taken by the DEMONSTRATOR. Key components of this effort are analysis tools that allow for pulse shape discrimination—techniques that significantly reduce background levels in the neutrinoless double-beta decay region of interest. These tools are able to identify and reject multi-site events from Compton scattering as well as events from alpha particle interactions. This work serves as an overview for these analysis tools and highlights the unique advantages that the HPGe p-type point contact detector provides to pulse shape discrimination.

[1]This material is supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics, the Particle Astrophysics and Nuclear Physics Programs of the National Science Foundation, and the Sanford Underground Research Facility.

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Date submitted: 30 Jun 2017 Electronic form version 1.4