Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

The Majorana Demonstrator Low-Energy Rare Event Search[1]
CLINTON WISEMAN, University of South Carolina, MAJORANA COLLABORATION — The extremely low backgrounds of the MAJORANA DEMONSTRATOR neutrinoless double beta decay experiment, combined with the excellent energy resolution of its high-purity germanium (HPGe) detectors, provide an opportunity for a dark matter search at low energy (<100 keV). The DEMONSTRATOR is in the final stages of construction at the 4850-ft. level of the Sanford Underground Research Facility in Lead, SD. The first detector module, consisting of 16.8 kg of HPGe enriched to 88% ^{76}Ge and 5.7 kg of natural HPGe, took 100.6 live days of commissioning data before going blind on April 14th, 2016, and the second module is nearing completion at the time of this writing. The enriched detectors have particularly low levels of cosmogenic activation from their specialized manufacturing process. These ultra-low background designs are suited to rare event searches at low energies, including light WIMPs (<10 GeV/c^2) and solar axions. In this talk an update of the MAJORANA low-energy research program will be presented.

[1]This material is based upon work supported by the U.S. DOE, 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.

Clinton Wiseman
University of South Carolina

Date submitted: 07 Jul 2016 Electronic form version 1.4