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Results of the MAJORANA DEMONSTRATOR's search for neutrinoless double-beta decay in $^{76}{\rm Ge}$

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The MAJORANA DEMONSTRATOR is searching for neutrinoless double-beta decay ($0\nu\beta\beta$) in ⁷⁶Ge, a process that would prove the neutrino is a Majorana fermion if discovered. The excellent energy resolution and ultra-low backgrounds also allow for searches for several classes of exotic dark matter. The experiment has completed operation of a modular array of 44 kg of high purity germanium detectors, in the p-type point contact (PPC), inverted-coaxial point-contact (ICPC), and broad energy germanium (BEGe) detector geometries.

To minimize backgrounds, the DEMONSTRATOR is constructed from low-background materials and housed inside a compact shield consisting of lead and copper at the Sanford Underground Research Facility (SURF) in Lead, SD. Since the previous data release in 2019, MAJORANA has upgraded the electronic cables and connectors, improved its analysis routines, and successfully operated the ICPC detectors. The experiment has achieved a world leading energy resolution of 0.12% FWHM at 2039 keV.

This talk will present the latest results on the search for neutrinoless double beta decay as well as searches for exotic dark matter from the MAJORANA DEMONSTRATOR with its full exposure of 65 kg-yr from enriched detectors.

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