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## New Results of the MAJORANA DEMONSTRATOR's for Double-Beta Decay of $^{76}\text{Ge}$ to Excited States of $^{76}\text{Se}$

The MAJORANA DEMONSTRATOR (MJD) is a low-background experiment searching for  $\beta\beta$ -decay of  $^{76}\text{Ge}$  to ground and excited states (ES) in  $^{76}\text{Se}$  using a modular array of high purity germanium detectors. The experiment consists of two modules with 29 detectors each, consisting of 44.8 kg of germanium detectors (29.7 kg enriched to 88% in  $^{76}\text{Ge}$ ). ES decays produce a  $\beta\beta$  with the prompt emission of one or two  $\gamma$ s, often producing multisite events. The granularity of the MJD detector array enables powerful discrimination of ES events from backgrounds. for neutrinoless and two-neutrino  $\beta\beta$ s to three different ES, MJD has set world leading half-life limits ranging from  $(5 - 21) \cdot 10^{23}$  y (90% CL), using 21 kg-y isotopic exposure. This poster will present analysis techniques and an improved result including previously blinded data with  $\sim 42$  kg-y exposure.

### Mini-abstract

The MAJORANA DEMONSTRATOR has leading sensitivity to  $\beta\beta$  of  $^{76}\text{Ge}$  to excited states

### Experiment/Collaboration

Majorana Collaboration

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