

Abstract Submitted
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The MAJORANA DEMONSTRATOR: A search for neutrinoless double-beta decay of germanium-76¹ ALEXIS SCHUBERT, University of Washington, MAJORANA COLLABORATION — Observation of neutrinoless double-beta decay ($0\nu\beta\beta$) could determine whether the neutrino is a Majorana particle and may provide information on neutrino mass. The MAJORANA Collaboration² will search for $0\nu\beta\beta$ of ^{76}Ge in an array of germanium detectors enriched to 86% in ^{76}Ge . Germanium detectors are a well-understood technology and have the benefits of excellent energy resolution, a high Q-value, and the ability to act as source and detector. The p-type point contact germanium detectors chosen by the MAJORANA Collaboration provide low noise, low energy threshold, and some ability to distinguish between the signal and background events. MAJORANA is constructing the DEMONSTRATOR, which will be used to conduct research and development toward a tonne-scale Ge experiment. The DEMONSTRATOR will be installed deep underground and will contain 40 kg of Ge deployed in an ultra-low-background shielded environment.

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²V.E. Guiseppe (2010) arXiv:1101.0119

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