

Abstract Submitted
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Status of the LEGEND Experiment Initial Testing and Outlook¹

ERIC MARTIN, University of North Carolina at Chapel Hill, LEGEND COLLABORATION — The Large Enriched Germanium Experiment for Neutrinoless double-beta Decay (LEGEND) experiment is a next generation ^{76}Ge -based double-beta decay experiment building off the experiences of the MAJORANA and GERDA experiments. LEGEND will be implemented in a phased approach. The first phase, LEGEND-200 so named because it consists of 200 kg of ^{76}Ge enriched germanium, will be deployed in the existing GERDA infrastructure at LNGS. Assembly and testing has already begun. With a background goal of 0.6 counts/FWHM·tonne·year LEGEND-200 will have a discovery potential of a half-life around 10^{27} years. The proposed second stage, LEGEND-1000 which consists of one-tonne of enriched germanium, could have a discovery potential beyond 10^{28} years. I will give an overview of the initial testing and current status as well as an update on some research and development efforts.

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