

LEGEND: The Large Enriched Germanium Experiment for Neutrinoless Double-Beta Decay

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The lepton number violating process of neutrinoless double-beta decay could result from the physics beyond the Standard Model needed to generate the neutrino masses. Taking different approaches, the current generation of ^{76}Ge experiments, the MAJORANA DEMONSTRATOR and GERDA, lead the field in both the ultra-low background and energy resolution achieved. The next generation of neutrinoless double-beta decay experiments requires increased mass and further reduction of backgrounds to maximize discovery potential. Building on the successes of the MAJORANA DEMONSTRATOR and GERDA, the LEGEND collaboration has been formed to pursue a tonne-scale ^{76}Ge experiment, with discovery potential at a half-life beyond 10^{28} years. The collaboration aims to develop a phased neutrinoless double-beta decay experimental program, starting with a 200 kg measurement using the existing GERDA cryostat at LNGS. I will discuss the plans and physics reach of LEGEND, and the combination of R&D efforts and existing resources being employed to expedite physics results.

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Collaboration name

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