

# LEGEND-200: first steps towards the hunt for $0\nu\beta\beta$

*Friday 19 July 2024 12:00 (15 minutes)*

Observation of the neutrinoless double-beta ( $0\nu\beta\beta$ ) decay would demonstrate lepton number violation and provide insights into matter-antimatter asymmetry and the Majorana nature of neutrino. It is a challenging quest that requires experimental conditions ensuring little to no background and superb energy resolution. The Large Enriched Germanium Experiment for  $0\nu\beta\beta$  decay (LEGEND) is designed to provide such conditions, aiming at unambiguous discovery of  $0\nu\beta\beta$  decay of  $^{76}\text{Ge}$ .

Its first and current stage, LEGEND-200, utilizes up to 200 kg of high purity  $^{76}\text{Ge}$ -enriched detectors, and will be operating for 5 years as a natural step towards the final 1000-kg phase. LEGEND-200 is located at LNGS, Italy. Its commissioning was completed in Oct 2022, and physics data taking started in Mar 2023. In this talk I will summarize the status of LEGEND-200 and its current and future milestones. The talk is presented on behalf of the LEGEND collaboration.

## Alternate track

### I read the instructions above

Yes

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**Session Classification:** Neutrino Physics

**Track Classification:** 02. Neutrino Physics