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^{76}Ge Detectors of LEGEND experiment: Production, Characterization, Performance

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The LEGEND Collaboration advances an experimental program to search for the neutrinoless double-beta decay of ^{76}Ge .

LEGEND-200, the first stage of this program, recently completed its commissioning process at LNGS in Italy. About 140 kg of ^{76}Ge -enriched high-purity germanium detectors immersed in liquid argon are now continuously taking low background data.

The LEGEND experiment integrates the advanced technology of the germanium detectors used in the *Gerda* and *Majorana* experiments. They are well suited for γ -rays measurements at the MeV energy scale, yielding high detection efficiency.

The crystal growing procedure results in naturally low internal radioactivity and is a well-established technology. A precise understanding of the behavior of the germanium detectors is fundamental to determine their optimal operational parameters and it necessitates extensive detector characterization.

This poster will present the latest state-of-the-art approach to the production chain, the characterization measurements, and the performance of germanium detectors installed in LEGEND-200 so far.

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Submitted on behalf of a Collaboration?

Yes

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