Abstract Submitted
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Detector Acceptance Characterization for the LEGEND-200 Experiment[1] MORGAN CLARK, University of North Carolina at Chapel Hill, LEGEND COLLABORATION — The LEGEND-200 experiment will search for neutrinoless double beta decay in 76Ge using approximately 200 kg of high purity germanium (HPGe) detectors enriched to >86% in 76Ge. To reach the total mass, we will reuse 60 kg of p-type point contact (PPC) detectors from the GERDA and MAJORANA DEMONSTRATOR experiments and are working with several vendors to fabricate 140 kg of a new type of HPGe detectors known as inverted coaxial point contact detectors (ICPC). The ICPC detectors have the advantage of being larger than the PPC detectors. The collaboration needs to fully characterize these detectors post production before they are deployed in the experiment's liquid Ar cryostat. The standard acceptance tests include measurements of each detector's efficiency and energy resolution, timing response, and dead layer. We also plan additional specialized measurements including radial and longitudinal scans of the detectors with selected sources, measurements in a liquid argon (LAr) immersion test apparatus, and alpha- and beta-source scans across the detectors' passivated surfaces. A description of the overall LEGEND-200 characterization program including some initial measurement results will be presented.

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