

Neutron Background Simulations for LEGEND-1000 in a Geant4-based Framework

Friday 31 July 2020 13:30 (3 minutes)

The LEGEND (Large Enriched Germanium Experiment for Neutrinoless $\beta\beta$ Decay) Collaboration will begin the construction of its initial phase, LEGEND-200, using the recently-decommissioned GERDA infrastructure, with a final 1000-kg installation (LEGEND-1000) planned. A simulation study of the neutron background is underway, using a custom simulation module based on Geant4. So far, the primary focus of this module's use has been cosmogenically-induced neutrons, as well as neutrons generated in (α,n) reactions. The goal of these studies is to quantify the effect of various shielding material and cryostat designs on the neutron backgrounds, and to understand the effects site selection will have. I will be discussing the progress and status of this work.

Secondary track (number)

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