

Abstract Submitted
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Dead Layer Surface Distribution Analysis of a Broad Energy Germanium Detector¹ ARI ZITIN, University of North Carolina Chapel Hill, MAJORANA COLLABORATION² — The implantation of the Li^+ contact on the surface of germanium detectors leaves a dead layer on the germanium crystal where ionizing radiation does not produce charge collection in the germanium crystal. In order to characterize this dead layer, an ^{241}Am source was used to scan the surface of the detector in a 90 point grid. The counts in the ^{241}Am peak were extracted at each grid point and this information was used to explore the deviations in the dead layer as a function of the position of the source over the germanium crystal. This initial experiment does not reveal the actual surface distribution of the dead layer in terms of thickness, but future work with simulations and an additional scan with a ^{133}Ba source will allow a more quantitative analysis of the surface distribution of the dead layer on the germanium crystal. This work will be used by the MAJORANA collaboration to characterize the modified broad energy germanium detectors that will be used in the MAJORANA DEMONSTRATOR.

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