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Pulse Fitting for Event Localization in PPC HPGe Detectors

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P-type Point Contact (PPC) germanium detectors are used in rare-event searches, such as neutrinoless double-beta decay and dark matter, due to their low radioactive backgrounds and low energy thresholds. We describe our work to determine the location of energy depositions in PPC detectors using the charge signal that is collected from the single point contact electrode. By comparing charge signals to a library of simulated signals, events can be localized, in some cases, with a resolution of 1mm. This is of interest in localizing low energy backgrounds in these types of detectors.

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