Energy calibrations are essential for the analysis of data from the Segmented Germanium Array (SeGA). When the central contact does not provide enough data segments may be used in analysis to improve statistics. This requires a separate energy calibration procedure. The procedure described below leads to a 70% improvement in statistics.

SeGA measures γ ray (high energy photon) emissions produced in a significant fraction of the experiments at the National Superconducting Cyclotron Laboratory (NSCL). When these photons hit one of the detectors they deposit energy, leading to a current which the electronics can record.

Each channel records data with its own electronics. Thus, there exists a limitation in accuracy caused by the differences in response of these electronic channels.

By using a source calibration, one can match the detector responses. This is done off-line applying programs which use unmatched central contact spectra to create parameters that will allow the production of a matched spectrum.

The result is a much better aligned set of spectra displaying 1% accuracy in γ ray energy peak alignment.

The spectra created using the segment calibration procedure developed in the current study are comparable to that made with central contact calibrations alone. At lower energies fold 1 and fold 2 events are aligned nearly perfectly to the central contact while at higher energies, the discrepancy is on the order of fractions of a percent. Although full width at half max (FWHM) for the fold 2 peak is about twice that for fold 1, sufficient resolution is maintained.

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