

Abstract Submitted
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Efficiency Measurements for HPGe Detectors MEGAN STURM, GABRIEL CHARLES, NOURREDINE HAMMOUDI, The Institut de Physique Nucleaire Orsay — High Purity Germanium (HPGe) detectors are used for high-resolution gamma spectroscopy in nuclear physics. HPGe can be combined to construct full 4π gamma-ray tracking detectors. For example, the GRETA (Gamma-Ray Energy Tracking Array) project in the USA will consist of 30 HPGe detectors for a total of 120 germanium crystals. Since each detector costs more than \$100,000, these detectors are typically bought through collaborations that maintain and repair them. When required, the detectors are moved to the experiment site for data collection and afterwards are returned to their home institution. The Institut de Physique Nucléaire d'Orsay (IPNO), France is in charge of a pool of about 20 coaxial HPGe detectors. For each loan, several characteristics must be provided to users to create accurate simulations of their experiments. Previously, only the detector's resolution was provided. I will present an independent method I developed to measure the efficiency, peak-to-Compton ratio, resolution and corresponding uncertainties for each of the pool detectors. Additionally, this method can be used in the reparation of detectors through redefining their nominal voltage. This work was conducted at IPNO in the summer 2019 and supported by National Science Foundation IRES Award No. 1658713.

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