

Abstract Submitted
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Materials Screening with High Purity Germanium Detectors

KEVIN MARQUEZ DIAZ, Virginia Tech — Rare event experiments such as those searching for neutrinoless double beta decay and dark matter must face the challenge of inherent radioactivity in materials used to construct detectors and shielding, such as copper, lead and steel, in order to meet background goals. Gamma ray spectroscopy with high purity germanium (HPGe) detectors is an important tool to screen materials for such experiments. In this work, we will compare the performance of two HPGe detector systems, one operated at sea level and one operated underground at a depth of 300 meters water equivalent. We will present results of radiopurity measurements of various samples studied, including modern steel samples and older steel samples thought to have been produced prior to World War 2 and the start of the nuclear age.

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