

Abstract Submitted
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Measuring High Energy Gamma Rays at the Homestake Mine for DUSEL Experiments¹ CHAO ZHANG, DONGMING MEI, KEENAN THOMAS, University of South Dakota, FRED GRAY, Regis University — Measuring external sources of background is very important to the planned DUSEL experiments. High energy gamma rays induced by muons in rock can range from keV to GeV. Characterizing the high energy gamma rays induced by muons at the Homestake Mine is implemented at different levels with multiple NaI detectors. With over one year data collection, we are able to show a spectrum of the high energy gamma rays induced by muons. A Monte Carlo simulation is also carried out to understand the muon ionization in the NaI detectors and the detection efficiency of high energy gamma-rays. We report the experimental results with the comparison from Monte Carlo simulations.

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