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Fast-Neutron Activation of Long-Lived Isotopes in Enriched Ge

V.E. GUISEPPE, University of South Dakota, S.R. ELLIOTT, B.H. LAROQUE, S. MASHNIK, Los Alamos National Lab, R.A. JOHNSON, University of Washington — We measured the production of ^{57}Co , ^{54}Mn , ^{68}Ge , ^{65}Zn , and ^{60}Co in a sample of Ge enriched in isotope 76 due to high-energy neutron interactions using a neutron beam at the Los Alamos Neutron Science Center. The activated sample was counted with a Ge detector to measure the amount of radioactive isotopes present. These isotopes are critical in understanding backgrounds in Ge detectors used for double beta decay experiments due to cosmogenic neutron interactions in the detectors while they reside on the Earth's surface. We will present the measured production and that predicted by cross section calculations based on CEM03.02. We will also present a predicted cosmogenic production rate based on a measured cosmic-ray neutron flux and our results.

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