

Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Radionuclide Production Cross Sections from 800-MeV Proton Interactions in Ge and Mo Targets¹ B. QUITER, E.B. NORMAN, UC Berkeley, A.R. SMITH, LBNL, S.A. WENDER, R.C. HAIGHT, LANL, A.F. BARGHOUTY, NASA — Minimization of radioactive backgrounds is critical for experiments attempting to measure neutrinoless double beta decay ($0\nu\beta\beta$). To estimate cosmic ray-induced radionuclide production in $0\nu\beta\beta$ experiments, we have irradiated targets composed of natural isotopic composition molybdenum and germanium with 800 MeV protons at the Los Alamos Neutron Science Center (LANSCE). The targets were counted with high-purity germanium detectors at Lawrence Berkeley National Laboratory intermittently from 2 weeks to 1 year after irradiation to determine the cumulative cross sections for radionuclide production. In total, 30 radioactive products were observed in the Mo target and 20 in the Ge target. Our experimental results are compared with the predictions from the semi-empirical Silberberg and Tsao code as well as previously reported Mo experimental data.

¹Supported in part by the US Dept. of Energy.

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Date submitted: 01 Jul 2008

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