

Abstract Submitted
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Measurements of proton-induced radionuclide production cross sections to evaluate cosmic-ray activation of tellurium¹ E.B. NORMAN, B.J. QUITER, UC Berkeley, A.R. SMITH, LBNL, S.A. WENDER, R.C. HAIGHT, LANL, A.F. BARGHOUTY, NASA, C. BROFERRIO, S. CAPELLI, M. CLEMENZA, O. CREMONESI, E. FIORINI, E. PREVITALI, M. SISTI, Univ. of Milan-Bicocca, S. CEBRIAN, Univ. of Zaragoza — Minimization of radioactive backgrounds is critical for experiments attempting to measure neutrinoless double beta decay. To estimate cosmic ray-induced radionuclide production in the CUORE experiment, we irradiated targets containing natural isotopic composition Te with protons at LANL (0.8 GeV) and at CERN (1.4 and 24 GeV). Targets were counted with high purity germanium detectors after irradiation to determine cross sections for radionuclide production. A large number of radioactive products were observed at each bombarding energy. Results from these measurements will be presented and compared with predictions from the semi-empirical Silberberg and Tsao code. The implications of these results for CUORE will be discussed.

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