

Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Inelastic neutron scattering on natural copper as a background for neutrinoless double-beta decay experiments M. BOSWELL, M. DEVLIN, S.R. ELLIOTT, N. FOTIADES, Los Alamos National Laboratory, V. GUISEPPE, University of South Dakota, A. HIME, Los Alamos National Laboratory, D.-M. MEI, University of South Dakota, R.O. NELSON, Los Alamos National Laboratory, D.V. PEREPELITSA, Columbia University — Neutron interactions with shielding materials provide a non-trivial source of background for rare physics searches such as dark-matter and double-beta decay experiments. These shielding materials, such as ^{nat}Cu , are often used in large quantities, completely encasing the detector. We have recently measured the inelastic neutron scattering on a natural copper target with the GEANIE spectrometer using the broad-spectrum neutron beam at LANSCE. Our work focuses specifically on determining background rates for regions around the Q-values of many candidate $0\nu\beta\beta$ decay isotopes, as well as providing data for benchmarking Monte Carlo simulations of background events.

M. Boswell
Los Alamos National Laboratory

Date submitted: 26 Oct 2009

Electronic form version 1.4