

Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Neutron damage tests of a GRETINA prototype detector T.J. ROSS, C.W. BEAUSANG, University of Richmond, I.Y. LEE, A.O. MACCHIAVELLI, S. GROS, M. CROMAZ, R.M. CLARK, P. FALLON, HENRIK JEPPESEN, Lawrence Berkeley National Lab., J.M. ALLMOND, University of Richmond — Gamma ray energy tracking arrays such as GRETINA/GRETA and AGATA are the latest evolution in gamma ray detection. By locating the interaction points, in 3-dimensions, of individual gamma ray interactions such arrays allow the energies of gamma rays to be reconstructed. This leads to excellent energy resolution, superior peak-to-total ratio and photo peak efficiency and resolving powers up to a thousand times superior to the best current generation array. The position information is extracted from the detailed pulse shapes recorded in each segment. It is anticipated that these tracking-detectors will experience significant neutron fluxes during in beam experiments. Thus it is important to test the response of highly-segmented Ge detectors when subjected to high-energy neutrons. In a one week test carried out at the 88-Inch Cyclotron at LBNL the P3 prototype detector for the GRETINA array was exposed to a neutron flux equivalent to at least one and a half years normal use. The detector was then successfully annealed. Preliminary results for the energy and position resolution, prior to and after neutron damage, and after annealing, will be presented.

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Date submitted: 04 Sep 2008

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