

Abstract Submitted
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Particle-gamma studies of Gd isotopes by (p,p'), (p,d) and (p,t) reactions T.J. ROSS, University of Richmond, R.O. HUGHES, C.W. BEAUSANG, J.M. ALLMOND, J.T. BURKE, L.W. PHAIR, N. SCIELZO, C.T. ANGELL, M.S. BASUNIA, D.L. BLEUEL, R.J. CASPERSON, P. FALLON, R. HATARIK, J. MUNSON, S. PASCHALIS, M. PETRI, J.J. RESSLER, STARS-LIBERACE COLLABORATION — An experiment was conducted using the STARS-LIBERACE array at the 88-Inch Cyclotron at Lawrence Berkeley National Laboratory to study Gd isotopes around the N=90 transition region. A 25 MeV proton beam was incident on $^{158/155/154}\text{Gd}$ targets and used to populate states in $^{152-158}\text{Gd}$ by (p,p'), (p,d) and (p,t) reactions. This experiment compliments our earlier work on $^{156}\text{Gd}(p,x)$, [1]. The exit channel is selected by gating on charged particles using the STARS (Silicon Telescope Array for Reaction Studies) array, which also gives the excitation energy of the residual nucleus. Coincident gamma information is obtained using the LIBERACE (Livermore Berkeley Array for Collaborative Experiments) clover detector array. Particle-gamma coincidence measurements provide a strong tool for probing the residual nucleus, [1]. Preliminary results pertaining to ^{158}Gd will be presented. [1] J. M. Allmond et al. Phys. Rev. C 81, 064316 (2010) This work is supported in part via DOE grant numbers DE-FG02-05 ER41379 & DE-FG52-06 NA26206(University of Richmond), DE-AC52 07NA27344(LLNL) and DE-AC02 05CH11231(LBNL).

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