Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Spin measurement and neutron resonance spectroscopy for ^{155}Gd[1]

BAYARBADRAKH BARAMSAI, G.E. MITCHELL, A. CHYZH, D. DASHDORJ, C. WALKER, North Carolina State University, T.A. BREDEWEG, A. COUTURE, R.C. HAIGHT, M. JANDEL, A.L. KEKSIS, J.M. O'DONNELL, R.S. RUNDBERG, J.M. WOUTERS, J.L. ULLMANN, D.J. VIERA, Los Alamos National Laboratory, U. AGVAANLUVSAN, Lawrence Livermore National Laboratory, F. BECVAR, M. KRTICKA, Charles University, Prague — The ^{155}Gd(n,γ) reaction has been measured with the DANCE calorimeter at Los Alamos Neutron Science Center. The highly segmented calorimeter provided detailed multiplicity distributions of the capture γ - rays. With this information the spins of the neutron capture resonances have been determined. The improved sensitivity of this method allowed the determination of the spins of even weak and unresolved resonances. With these new spin assignments as well as previously determined resonance parameters, level spacings and neutron strength functions are determined separately for s-wave resonances with J = 1 and 2.

[1]This work was supported in part by US DOE grants Nos. FG52-06NA26194 and DE-FG02=97-ER41402 and performed under the auspices of the U.S. DOE under contracts Nos. DE-AC52-07NA27344 and DE-AC52-06NA25396.

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Date submitted: 08 Jan 2009 Electronic form version 1.4