Abstract Submitted
for the PSF15 Meeting of
The American Physical Society

Search for E0 transitions in ^{154,156}Gd[1] S. Y. STRAUSS, A. APRAHAMIAN, A. BATTAGLIA, C. CASARELLA, P. FASANO, A. GYURJINYAN, T. KUTA, K. MANUKYAN, S.T. MARLEY[2], A. NYSTROM, K. SIEGL, M. SMITH, W. TAN, University of Notre Dame, M. LOWE, University of Wisconsin-La Crosse
— Transitions between nuclear states below a few MeV can occur through two processes: γ-emission and internal conversion. The E0 transition can only occur through internal conversion and is the only way to observe the "forbidden" transitions between two 0+ states. The even Gd isotopes have been found to have a substantial number of low-lying 0+ states. Determining the nature of these 0+ states remains one of the open questions in nuclear structure. Measuring the E0 transitions from these states is crucial for understanding. We have searched for E0 transitions between 0+ states in ^{154,156}Gd nuclei following the ^{152,154}Sm(α,2n) reactions by measuring conversion electrons using the Internal Conversion Electron Ball (ICEBall) array in coincidence with γ-rays using the GEORGINA detectors at the University of Notre Dame's Nuclear Science Laboratory. Details of the experimental setup and preliminary results will be presented.

[1]This research was funded by the NSF under contract number PHY-1419765 and the NNSA under grant number DE-NA0002135.
[2]Currently at Louisiana State University

Sabrina Strauss
University of Notre Dame

Date submitted: 16 Oct 2015 Electronic form version 1.4