Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

E0 components of $J^\pi \rightarrow J^\pi$ Transitions in ^{154}Gd[1] SABRINA STRAUSS, ANI APRAHAMIAN, CLARK CASARELLA, PATRICK J. FASANO, BRYCE FRENTZ, KHACHATUR MANUKYAN, CRAIG REINGOLD, MALLORY SMITH, WANPENG TAN, University of Notre Dame, SHELLY LESHER, CARTER HUGHES, XAVIER JAMES, MARCUS LOWE, ELI TEMANSON, University of Wisconsin - La Crosse — E0 components of transitions between two states of the same spin and parity are challenging to measure, with sparse information available in nuclear databases. A recent study of ^{154}Gd (D. A. Meyer et al, PRC 044309(2006)) showed the nucleus to have 16 0^+ states. ^{154}Gd is well-studied by a number of reactions, hence it is an ideal candidate to search for E0 transitions. We will report on our results for transitions in ^{154}Gd following the ^{152}Sm(α,2n) reaction using the Internal Conversion Electron Ball (ICEBall) array in coincidence with γ-rays at the University of Notre Dame Nuclear Science Laboratory (NSL). ICEBall was re-implemented at the NSL 4 years ago and the γ-rays were detected by Clovershare, segmented HPGe detectors purchased by the Yale Nuclear Structure Laboratory that are shared by a consortium of universities and laboratories for experimental campaigns.

[1]This work is supported by NSF grant PHY-1419765.

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Date submitted: 08 Sep 2017 Electronic form version 1.4