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Search for E0 Transitions in ^{154}Gd ¹ S. Y. STRAUSS, A. APRAHAMIAN, C. CASARELLA, P. FASANO, B. FRENTZ, G. GILARDY, T. KUTA, E. LAMERE, J. LONG, K. MANUKYAN, A. MCCOY, S. MOYLAN, A. NELSON, C. REINGOLD, M. SKULSKI, M. K. SMITH, W. TAN, B. VANDE KOLK, University of Notre Dame, C. HUGHES, X. JAMES, S. R. LESHER, M. LOWE, E. TEMANSON, University of Wisconsin - La Crosse — Recent studies have shown the existence of 16 0+ states in ^{154}Gd . Understanding the nature of these low-lying 0+ states in deformed nuclei remains one of the open questions in nuclear structure. A recent review indicates that it is important to measure the E0s, B(E2) values, and transfer reaction cross sections to fully determine the nature of 0+ states. We will report on our search for E0 transitions between these states in ^{154}Gd following the $^{152}\text{Sm}(\alpha,2n)$ 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 3 years ago and the γ -rays were detected by the HPGe detectors of Clovershare. Details of the experiment and preliminary results will be presented.

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Sabrina Strauss
University of Notre Dame

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