Abstract Submitted
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Wobbling Beyond Lu: TSD Bands in ^{167}Ta[1] D.J. HARTLEY, E.P. SEYFRIED, J.R. VANHOY, US Naval Academy, I.G. DARBY, L.L. RIEDINGER, Univ. of Tennessee, A. AGUILAR, M.A. RILEY, X. WANG, Florida State Univ., M.P. CARPENTER, C.J. CHIARA, R.V.F. JANSSENS, F.G. KONDEV, T. LAURITSEN, E.A. MCCUTCHAN, I. STEFANESCU, S. ZHU, Argonne National Lab, P. CHOWDHURY, S. LAKSHMI, S.K. TANDEL, U.S. TANDEL, Univ. of Massachusetts-Lowell, Q. IJAZ, W.C. MA, Mississippi State Univ., U. GARG, S. MUKHOPADHYAY, Univ. of Notre Dame — Perhaps the best indication of the rarely observed triaxial shape is the identification of the wobbling mode. This collective excitation occurs when an asymmetric nucleus is rotated at high spin. Currently, only ^{163,165,167}Lu and perhaps ^{161}Lu have displayed this exotic phenomenon. The fact that neighboring nuclei have not exhibited wobbling has led to the suggestion that the Lu proton Fermi surface is possibly the optimal location to observe wobbling and that no other isotope is likely to display this mode [1]. In order to test this theory, an experiment which populated high-spin states in ^{167}Ta was performed. The ^{120}Sn(^{51}V,4n) reaction was used and Gammasphere detected the emitted γ rays. A sequence based on the $i_{13/2}$ proton was identified for the first time, and a structure feeding into the $i_{13/2}$ band was also found. This latter structure is a strong candidate for the first wobbling band beyond Lu nuclei. Its characteristics will be compared with previously established wobbling sequences. [1] N.S. Pattabiraman et al., Phys. Lett. B 647, 243 (2007).

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