Abstract Submitted
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The "tilted wobbler" in ^{167}Ta[1] D.J. HARTLEY, E.P. SEYFRIED, J.R. VANHOY, USNA, S. FRAUENDORF, U. GARG, S. MUKHOPADHYAY, Notre Dame, R.V.F. JANSSENS, M.P. CARPENTER, C.J. CHIARA, F.G. KONDEV, T. LAURITSEN, E.A. MCCUTCHAN, I. STEFANESCU, S. ZHU, Argonne Nat. Lab, L.L. RIEDINGER, I.G. DARBY, Tennessee, M.A. RILEY, A. AGUILAR, X. WANG, Florida State, P. CHOWDHURY, S. LAKSHMI, S.K. TANDEL, U. TANDEL, Massachusetts-Lowell, Q.A. IJAZ, W.C. MA, Mississippi State — The exotic wobbling mode (which is direct experimental confirmation of asymmetric nuclear shapes) has now been observed in ^{163,165,167}Lu and ^{167}Ta. Particle-rotor model calculations have successfully described the transition strength ratios between the wobbling band and the $\pi i_{13/2}$ sequence upon which it is based [1]. However, assumptions made in this model suggest that the wobbling band should increase in energy (with respect to the $\pi i_{13/2}$ band) with spin. This is in direct contrast to what is systematically observed in experiments. Using a different set of assumptions within the particle-rotor model, the transition strength ratios can be reproduced while also predicting correctly the reduction in the energy splitting between the bands with increasing spin.

[1] I. Hamamoto and G.B. Hagemann, Phys. Rev. C 67, 014319 (2003).

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