

Abstract Submitted
for the APR11 Meeting of
The American Physical Society

Search for the Exotic Wobbling Mode in ^{171}Re ¹ E.E. PEDICINI, D.J. HARTLEY, J.R. VANHOY, US Naval Academy, M.A. RILEY, X. WANG, Florida State University, R.V.F. JANSSENS, P.F. BERTONE, M.P. CARPENTER, C.J. CHIARA, G. GÜRDAL, F.G. KONDEV, T. LAURITSEN, E.A. MCCUTCHAN, S. ZHU, Argonne National Lab, L.L. RIEDINGER, University of Tennessee, A.D. AYANGEAKAA, U. GARG, J.T. MATTA, University of Notre Dame, W. MA, S. MUKHOPADHYAY, Mississippi State University, P. CHOWDHURY, S. HOTA, University of Massachusetts-Lowell — The observation of a wobbling band is a strong indication that a nucleus possesses triaxial deformation. The wobbling mode has been found in the $Z \approx 72$, $N \approx 94$ region in five Lu isotopes and in ^{167}Ta and is associated with the $i_{13/2}$ band. In order to determine the role of the proton Fermi surface, an experiment was conducted to search for the wobbling mode in ^{171}Re . High-spin states in ^{171}Re were produced in the $^{120}\text{Sn}(^{55}\text{Mn}, 4n)$ reaction and the gamma rays were detected with Gammasphere. Several bands have been found to feed into the $i_{13/2}$ structure, and their characteristics will be assessed to determine if these sequences are associated with wobbling. The implications of this result on the region of triaxiality will be discussed.

¹Supported by the NSF (PHY-0854815), NSF (PHY-0758100), and DOE (DE-AC02-06CH11357).

E.E. Pedicini

Date submitted: 14 Jan 2011

Electronic form version 1.4