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Search for Transverse Wobbling in ¹³⁵Pr¹ J.T. MATTA, U. GARG, S. FRAUENDORF, A.D. AYANGEAKAA, D. PATEL, U of Notre Dame, Notre Dame, USA, S. ZHU, M. CARPENTER, T. LAURITSEN, F. KONDEV, D. SEWERY-NIAK, ANL, Argonne, USA, C. PETRACHE, CSNSM, U P-Sud and CNRS/IN2P3, Orsay, France, R. PALIT, S. SAHA, J. SETHI, T. TRIVEDI, TIFR, Mumbai, India, S. MUKHOPADHYAY, BARC, Mumbai, India, S. RAY, SINP, Kolkata, India, R. RAUT, S. GHUGRE, A. SINHA, UGCDAE-CSR, Kolkata, India — Nuclear wobbling has previously been observed in ^{161,163,165,167}Lu and in ¹⁶⁷Ta. In these cases the inter-band transitions display the expected $\Delta I=1$, E2 nature, but the wobbling frequency, $(\Delta E = \hbar \omega_w I = E(I, \alpha = \frac{1}{2}) - (E(I-1, \alpha = -\frac{1}{2}) + E(I+1, \alpha = -\frac{1}{2}))/2),$ decreases with increasing spin. This remains an open theoretical problem as the Hamiltonian suggests increasing frequency with spin. Here the concept of a "transverse wobbler" provides an explanation. In this the angular momentum wobbles about the short axis and at a critical frequency this motion becomes unstable and the frequency becomes zero. A previous level scheme of 135 Pr showed two h₁₁ bands whose properties seemed to exhibit the traits expected of a transverse wobbler. Results from investigations of ¹³⁵Pr at both Gammasphere and INGA will be presented.

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