Abstract Submitted
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Possible tetrahedral band in ^{156}Dy[1] L.L. RIEDINGER, Tennessee, D.J. HARTLEY, USNA, D. CURIEN, J. DUDEK, G. DUCHENE, B. GALL, Strasbourg, M.A. RILEY, X. WANG, Florida State, C. BEAUSANG, Richmond, P.E. GARRETT, Guelph, W.D. KULP, J.L. WOOD, Georgia Tech, M.P. CARPENTER, C.J. CHIARA, F.G. KONDEV, T. LAURITSEN, E.A. MCCUTCHAN, S. ZHU, Argonne, J. SHARPEY-SCHAFER, Cape Town, J.M. ALLMOND, C.H. YU, Oak Ridge, J. SIMPSON, Daresbury, V. WERNER, Yale — The lowest lying negative-parity band in ^{156}Dy has been viewed as a K = 0^- octupole-vibrational band, but could be tetrahedral in nature. To determine if this band is tetrahedral, the lifetimes of the states must be measured. We report a pilot study of the ^{26}Mg(^{126}Xe,5n) reaction using Gammasphere at Argonne's ATLAS facility, to learn if the states of interest would be populated in this reaction and to discover if any Doppler broadening could be observed, indicating a long lifetime for the band of interest. The states were populated in a low–statistics run and no Doppler broadening was observed, which is consistent with (but not conclusive for) tetrahedral symmetry. We are preparing a plunger measurement to disentangle the 2 ps population of this band from the lifetimes of the states in this debated K = 0^- band, to learn if it is octupole vibrational (state lifetime around 0.5 ps) or tetrahedral (longer than a few ps).

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