

Abstract Submitted
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Collective quadrupole behavior in $^{106}_{46}\text{Pd}$: deficit of E2 strength of the three-phonon levels F.M. PRADOS-ESTÉVEZ, A. CHAKRABORTY, E.E. PETERS, M.G. MYNK, D. BANDYOPADHYAY, N. BOUKHAROUBA, S.N. CHOUDRY, B.P. CRIDER, A. KUMAR, S.R. LESHER, C.J. MCKAY, M.T. MCELLISTREM, S. MUKHOPADHYAY, J.N. ORCE, M. SCHECK, S.W. YATES, University of Kentucky, P.E. GARRETT, University of Guelph, Canada, S.F. HICKS, University of Dallas, J.R. VANHOY, United States Naval Academy, J.L. WOOD, Georgia Institute of Technology — The low-lying excited states in ^{106}Pd exhibit a structure that resembles a 3-phonon quintuplet, thus making ^{106}Pd an excellent candidate for a “good quadrupole vibrator.” To examine this possibility, excited states in ^{106}Pd were investigated using the $(n,n'\gamma)$ reaction at the University of Kentucky. Level lifetimes, spins, transition multipolarities, and multipole mixing ratios were determined. The feeding to the proposed two-phonon triplet of states $J^\pi(E_x, \text{keV}) = 4^+(1229)$, $2^+(1128)$ and $0^+(1134)$ was studied for states up to ~ 3 MeV, and observed $E2$ decay strength sums were $< 50\%$ of that expected for low-energy quadrupole vibrational collective behavior. This deficiency of strength cannot be explained by considering the fragmentation of the three-phonon states. *This material is based upon work supported by the U.S. NSF under Grant No. PHY-0956310.*

Francisco M. Prados-Estévez
University of Kentucky

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