Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

Nuclear structure of ^{106}Pd and ^{106}Cd from the (n,n$'\gamma$) reaction[1]

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. LESHER, C.J. MCKAY, M.T. MCELLISTREM, S. MUKHOPADHYAY, J.N. ORCE, M. SCHECK, S.W. YATES, University of Kentucky, USA, P.E GARRETT, University of Guelph, Canada, S. HICKS, University of Dallas, USA, J.R. VANHOY, United States Naval Academy, USA, J.L. WOOD, Georgia Institute of Technology, USA — Quadrupole shape vibrations are considered to be fundamental degrees of freedom of nuclei. Several candidates in the $_{48}$Cd and $_{46}$Pd region have been proposed as examples of good quadrupole shape vibrators; however, in recent studies of the heavy stable Cd nuclei, serious discrepancies from the vibrational decay pattern were found, suggesting a breakdown of the quadrupole vibrational picture. New studies of the $_{48}$Cd and $_{46}$Pd isotopes promise to bring new insights into the role of vibrations in nuclei. The low-lying states of ^{106}Pd and ^{106}Cd have been studied with the (n,n$'\gamma$) reaction at the University of Kentucky 7-MV Van de Graaff accelerator facility. Gamma-ray excitation functions, angular distributions, and coincidence data (^{106}Pd) were used to characterize the excited states up to $\sim$4.0 MeV in each nucleus.

[1]This material is based upon work supported by the U.S. National Science Foundation under Grant No. PHY-0956310.

Francisco M. Prados Estevez
University of Kentucky

Date submitted: 09 Jul 2012 Electronic form version 1.4