

Abstract Submitted  
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**Nuclear structure of  $^{116}\text{Cd}$  from the  $(n, n' \gamma)$  reaction** C.S. SUMITHRARACHCHI, P.E. GARRETT, K.L. GREEN, Department of Physics, University of Guelph, Guelph, Ontario, Canada, M. KADI, Department of Chemistry, University of Kentucky, Lexington, Kentucky, USA, N. WARR, Department of Chemistry, University of Kentucky, Lexington, Kentucky, USA & Institute of Nuclear Physics, University of Cologne, Cologne, Germany, J. JOLIE, Institute of Nuclear Physics, University of Cologne, Cologne, Germany, S.W. YATES, Department of Chemistry, University of Kentucky, Lexington, Kentucky, USA — The nuclear structure of the Cd isotopes have been extensively studied with the aim of understanding the role of configuration mixing between multiphonon vibrational and intruder structures. The study of the low-lying levels in  $^{116}\text{Cd}$  is particularly important as it has been reported to possess a more complex nuclear structure than is predicted by the interacting boson model(IBM)[1]. The properties of multiphonon vibrational and intruder states in  $^{116}\text{Cd}$  have been investigated with the  $(n, n'\gamma)$  reaction. The measured  $\gamma$ -ray excitation functions,  $\gamma$ - $\gamma$  coincidences and angular distributions were utilized to derive the level structure of  $^{116}\text{Cd}$ . The electromagnetic properties of levels in  $^{116}\text{Cd}$  and comparisons with IBM-2 calculations will be presented.  
[1]. M. Kadi et al., Phys. Rev. C 68, 031306(R) (2003).

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