

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Probing the Localization Boundary in 5f electron Systems<sup>1</sup>** J.J. JOYCE, T. DURAKIEWICZ, K.S. GRAHAM, J.M. WILLS, E.D. BAUER, J.L. SARRAO, D.P. MOORE, L.A. MORALES, Los Alamos National Laboratory, C.G. OLSON, Ames Laboratory, E. GUZIEWICZ, Polish Academy of Sciences, M.T. BUTTERFIELD, Lawrence Livermore National Laboratory — The role of the 5f electrons in the bonding and hybridization for the light actinides is examined. Through use of various types of photoelectron spectroscopy including angle-resolved and resonance techniques, one may define the boundaries for periodic versus central potentials experienced by the outer electrons in actinide materials including UO<sub>2</sub>, PuTe and Pu metal. A comparison with various computational approaches sheds light on the limits of actinide separation in the lattice and bonding to ligand components before one converges on magnetic configurations for materials.

<sup>1</sup>Work Supported by the U.S. Department of Energy, Office of Sciences and the LANL LDRD program.

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Date submitted: 20 Nov 2006

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