

Abstract Submitted  
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**Hard X-Ray Photoelectron Spectroscopic Analysis of single crystal UPd<sub>3</sub>, UGe<sub>2</sub>, and USb<sub>2</sub>** M. BEAUX, T. DURAKIEWICZ, J. JOYCE, E. BAUER, LANL, Los Alamos, NM 87545, L. MORESCHINI, Lawrence Berkeley National Laboratory, Berkeley, California, F. OFFI, CNISM and Dipartimento de Fisica, Universita Roma Tre, Via della Vasca Navale 84, I-00146 Rome, Italy, M. GRIONI, IPN, EPFL, CH-1015 Lausanne, Switzerland, G. MONACO, ESRF, B.P. 220, F-38042 Grenoble, France, G. PANNACIONE, Laboratorio Nazionale TASC-INFN-CNR, Area Science Park, Basovizza S.S. 14Km 163.5, I-34012 Trieste, Italy — Hard X-ray Photoelectron Spectroscopy (HAXPES) with 7.6 keV photons has been performed on single crystals of UPd<sub>3</sub>, UGe<sub>2</sub>, and USb<sub>2</sub> at the European Synchrotron Radiation Facility (ESRF). A potential correlation between the localization/itinerancy of the 5f electrons and the core levels of these materials is investigated. The greatly reduced surface sensitivity of HAXPES enabled observation of the bulk core levels in spite of some surface oxidation. An 800 meV splitting of the Sb 3d and 4d core levels was observed. The splitting of the Sb core levels is attributed to manifestations of two distinct binding modes within the USb<sub>2</sub> single crystal as supported by consideration of interatomic distances and charge transfer calculations.

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