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Irreversible dynamics of the phase boundary in $U(Ru_{1-x}Rh_x)_2Si_2$ VICTOR FANELLI, Dep. of Phys. and Astron., University of California, Irvine, CA and MST-NHMFL, LANL, Los Alamos, NM, A.V. SILHANEK, M. JAIME, N. HARRISON, MST-NHMFL, LANL, Los Alamos, NM, C.D. BATISTA, T11, LANL, Los Alamos, NM, H. AMITSUKA, Grad. School of Science, Hokkaido University, Japan, L. BALICAS, NHMFL-FSU, Tallahassee, FL, J.L. SARRAO, MST, LANL, Los Alamos, NM, J.A. MYDOSH, II Physikalisches Institut, Universitat zu Koln, Germany — Specific heat and magneto-caloric effect measuments on the systems: $U(Ru_{1-x}Rh_x)_2Si_2$ and $Yb_{1-x}Y_xIn$ Cu₄ were carried out at high magnetic fields. Thermodynamic similarities are found at the phase boundary into the magnetic field-induced phase (phase II) of the former and at the valence transition of the latter. We show that the irreversible properties of the transition into the phase II of $U(Ru_{1-x}Rh_x)_2Si_2$ are very similar to that associated with the valence transition of $Yb_{1-x}Y_x$ In Cu₄. To explain these results, we propose a bootstrap mechanism by which lattice degrees of freedom within phase II become coupled to the 5f-electron hybridization, giving raise to a valence change at the transition.

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