Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

**Scaling Functions and Conformal Invariance at the Quantum Critical Point of the Sub-Ohmic Bose-Fermi Kondo Model** STEFAN KIRCHNER, QIMIAO SI, Department of Physics & Astronomy, Rice University, Houston, TX, 77251 — In one approach to the quantum critical heavy fermion metals, Kondo lattice systems are studied through a self-consistent Bose-Fermi Kondo Model (BFKM) within the extended dynamical mean field theory. It has become clear in recent years that the critical behavior of the BFKMs is not captured by the classical critical theory obtained through the standard "quantum-to-classical mapping" of the model. In this work, we study the finite temperature scaling functions of the easy-axis BFKM using a cluster-updating Monte Carlo approach, and their counterparts of a spin-isotropic BFKM in a dynamical large-N limit. The scaling functions are found to have the form dictated by a boundary conformal field theory even though the underlying Hamiltonian lacks conformal invariance. In the large-N limit, this is established for all multiple-spin correlation functions as well. The results raise the possibility that the quantum critical point of the BFKM has an enhanced symmetry, which should be helpful to the understanding of the underlying critical field theory.

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Date submitted: 05 Dec 2006 Electronic form version 1.4