Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

1/N expansion of the nonequilibrium single-impurity Anderson Model[1] ZURAB RATIANI, ADITI MITRA, New York University — Results are presented for the nonequilibrium single-impurity Anderson model using a large-N approach, where N is the degeneracy of the impurity level. Using the Keldysh formalism, we extend the slave-boson functional integral method of Read and Newns to the out of equilibrium current carrying case. The correlation function for the slave boson is shown to exhibit a long time power law behavior along with an exponential decay whose origin is current induced decoherence, a result consistent with nonequilibrium X-ray edge physics. Expressions for the impurity susceptibility and the conductance through the device are presented to O(1/N) and for an applied voltage less than the Kondo temperature.

[1]Supported by NSF-DMR 0705584

Aditi Mitra
New York University

Date submitted: 20 Nov 2008 Electronic form version 1.4