Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Using Dissipation to Stabilize a Quantum Critical Point in Two Quantum Dots[1] GU ZHANG, Duke Univ, EDUARDO NOVAIS, UFABC, Brazil, HAROLD BARANGER, Duke Univ — We show how dissipation could be used to stabilize the two-impurity Kondo critical point in a double dot system. In the absence of dissipation, this intermediate coupling fixed point cannot be reached because charge transfer from the source to drain lead, always present in a realistic system, is a relevant perturbation. By using dissipative leads, as recently introduced in single dot experiments, this charge transfer can be suppressed, thus allowing the intermediate-coupling non-Fermi-liquid quantum critical point to be reached. We expect that when dissipation exceeds a critical value, zero conductance will be observed except at this critical point, which then is its experimental signature. We also studied the effect of dissipation on the two critical points at which the interdot exchange flows either to zero or infinity.

[1]Work supported in part by the U.S. DOE Division of Materials Sciences and Engineering (DE-SC0005237).

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Date submitted: 14 Nov 2014 Electronic form version 1.4