Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

GW approach to Anderson model in and out of equilibrium: scaling properties in the Kondo regime CATALIN D. SPATARU, Sandia National Laboratories — The low-energy properties of the Anderson model for a single impurity coupled to two leads are studied using the GW approximation. We find that quantities such as the spectral function at zero temperature, the linear-response conductance as function of temperature or the differential conductance as function of bias voltage exhibit universal scaling behavior in the Kondo regime. We show how the form of the GW scaling functions relates to the form of the scaling functions obtained from the exact solution at equilibrium. We also compare the energy scale that goes inside the GW scaling functions with the exact Kondo temperature, for a broad range of the Coulomb interaction strength in the asymptotic regime. This analysis allows to clarify a presently suspended question in the literature, namely whether or not the GW solution captures the Kondo resonance.

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Date submitted: 20 Nov 2009 Electronic form version 1.4