Max-Planck-Institut für Struktur und Dynamik der Materie

Max Planck Institute for the Structure and Dynamics of Matter

Wednesday, July 15th 2015 – 15:00
CFEL Seminar room I, EG.076 (Bldg. 99)

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Transient voltage quench impurity dynamics in the Kondo regime

We study the signatures of universal Kondo physics in the transient dynamics of a single quantum dot subject to the voltage quench. We solve the problem exactly by employing a hybridization expansion diagrammatic Monte Carlo algorithm on the Keldysh contour with an imaginary branch to account for initial correlations. By designing an order-by-order normalization procedure we have reached the temperatures below the Kondo temperature. We find, that upon the decrease of the temperature of the system the current through the dot saturates at temperatures below the equilibrium Kondo scale. We show that this behavior is visible in a broad range of applied voltages, including the ones at which the standard linear response description is not applicable. We compare our results with non-crossing and one-crossing approximations.

Host: Martin Eckstein

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