Abstract Submitted
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AC Bias Spectroscopy of the Kondo Singlet in a Single Electron Transistor[1] BRYAN HEMINGWAY, TAI-MIN LIU[2], ANDREI KOGAN, University of Cincinnati, STEVEN HERBERT, Xavier University, MICHAEL MELLOCH, Purdue University — We have measured the nonlinear differential conductance, G, of a single electron transistor in the spin 1/2 Kondo regime in presence of an oscillating source voltage. In two distinct regimes, hf $>$ $k_B T_K$ and hf $\ll$ $k_B T_K$, where f is the oscillation frequency and T_K is the Kondo temperature, comparison to the static model of Kondo transport reveals agreement at very low frequencies and an increasing systematic departure at high frequencies. When hf ¿ $k_B T_K$, the G defined as the derivative of the time averaged current through the device with respect to the average bias drastically differs from the static model. We show that the effect cannot be explained by an increase in the electron temperature.

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