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Kondo-Temperature Dependence of the Magnetic-Field Splitting of a Kondo Peak in a Single-Electron Transistor SAMI AMASHA, Department of Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, IAN J. GELFAND, Division of Engineering and Applied Sciences, Harvard University, Cambridge, Massachusetts 02138, MARC A. KASTNER, ANDREI KOGAN, Department of Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139 — We present a detailed study of the Kondo peak splitting as a function of Kondo temperature T_K and magnetic field B parallel to the 2DEG in an AlGaAs/GaAs single-electron transistor. We observe that, at fixed B, the Kondo splitting decreases logarithmically with Kondo temperature, in agreement with theory. However, we find that the magnitude of the prefactor of the logarithm is much larger than predicted. We also find that there exists a critical magnetic field B_c below which the Kondo peak does not split, in qualitative agreement with theory. However, our results indicate that B_c is smaller than predicted. These measurements show that the theory of non-equilibrium Kondo physics is still incomplete.

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