Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

A magnetic field-induced crossover to a non-universal regime in a Kondo dot[1] ANDREI KOGAN, TAI-MIN LIU, BRYAN HEMINGWAY, University of Cincinnati, STEVEN HERBERT, Xavier University, MICHAEL MELLOCH, Purdue University, UNIVERSITY OF CINCINNATI TEAM, XAVIER UNIVERSITY COLLABORATION, PURDUE UNIVERSITY COLLABORATION — We have measured the magnetic splitting, Δ_K, of a Kondo peak in the differential conductance of a Single-Electron Transistor while tuning the Kondo temperature, T_K, along two different paths in the parameter space: varying the dot-lead coupling at a constant dot energy, and vice versa. At a high magnetic field, B, the changes of Δ_K with T_K along the two paths have opposite signs, suggesting that Δ_K is not a universal function of T_K. At low B, we observe a decrease in Δ_K with T_K along both paths. Detailed $\Delta_K(B)$ data for two different T_K show consistency for the splitting onset. Furthermore, we find $\Delta_K/\Delta < 1$ at low B and $\Delta_K/\Delta > 1$ at high B, where Δ is the Zeeman energy of the bare spin. We discuss an approximate scaling of Δ_K with B/T_K at low B and compare the findings to previous measurements and theory.

[1]The research is supported by NSF DMR award No. 0804199 and by University of Cincinnati.

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Date submitted: 20 Nov 2008 Electronic form version 1.4