Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Two-channel Kondo effect and the low-temperature crossover ANDREW KELLER, LUCAS PEETERS, Stanford University, IRENEUSZ WEYMANN, Adam Mickiewicz University, CĂTĂLIN PAŞCU MOCA, Budapest University of Technology and Economics, University of Oradea, DIANA MAHALU, VLADIMIR UMANSKY, Weizmann Institute of Science, GERGELY ZARÁND, Budapest University of Technology and Economics, DAVID GOLDHABER-GORDON, Stanford University — The two-channel Kondo (2CK) state, where a spin-1/2 impurity is equally exchange-coupled to two independent reservoirs, is a canonical non-Fermi liquid state. Experimental observations are rare because of its sensitivity to common and hard-to-control perturbations. We implement experimentally a 2CK state in a coupled dot-grain system (Potok, et al., doi:10.1038/nature05556), and explore the physics of the low-temperature crossover: how magnetic field and gate voltage drive the system towards a Fermi liquid ground state. Our experimental findings are corroborated by detailed numerical renormalization group modeling of our device.

Andrew Keller
Stanford University

Date submitted: 14 Nov 2014 Electronic form version 1.4