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Double Quantum Dot Kondo Effect in a Magnetic Field SAMI AMASHA, ANDREW J. KELLER, ILEANA G. RAU, Stanford University, JORDAN A. KATINE, Hitachi Global Storage Technologies, HADAS SHTRIKMAN, Weizmann Institute, DAVID GOLDHABER-GORDON, Stanford University — Conventionally the Kondo effect is thought of as describing how conduction electrons screen a localized spin. More generally, it describes how itinerant electrons screen a degenerate degree of freedom of a localized site. A double quantum dot (with negligible inter-dot tunneling) can have both spin degeneracy, as well as a degeneracy associated with an electron being on dot 1 or dot 2. The latter degeneracy corresponds to a pseudo-spin degree of freedom that can also be screened by the Kondo effect [A. Hübel, et al. PRL 101, 186804 (2008)]. Applying a finite magnetic field can split the spin degeneracy of the dots, which should allow the realization of a purely pseudo-spin Kondo effect. We present conductance measurements of this double dot Kondo effect in a magnetic field. We compare our measurements to theoretical predictions for SU(2) Kondo to check whether we have realized a purely pseudo-spin Kondo effect in a double dot.

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