

Abstract Submitted
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Spin coherence in Multi-electron GaAs double dots¹ ANDREW P. HIGGINBOTHAM, FERDINAND KUEMMETH, CHRISTIAN BARTHEL, CHARLES M. MARCUS, Department of Physics, Harvard University, MICAH P. HANSON, ARTHUR C. GOS-SARD, Materials Department, University of California, Santa Barbara — Experimental investigation of spin manipulation and readout in multi-electron double quantum dots is reported. For occupations of order 10 electrons, spin blockade in both transport and pulsed-gate measurements is identified. Exchange rotations, dynamical decoupling, S/T+ beamsplitter experiments, and single-shot readout can all be implemented similar to the single-electron case. These demonstrations are relevant for the practical operation and scaling of GaAs spin qubits.

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