

Abstract Submitted
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Triple Quantum Dots ANDY VIDAN, MICHAEL STOPA, ROBERT M. WESTERVELT, Harvard University, MICAH HANSON, ART C. GOSSARD, University of California, Santa Barbara — We report on studies of three coupled lateral quantum dots fabricated in a GaAs/AlGaAs heterostructure containing a two-dimensional electron gas, with the three dots arranged in a ring geometry. We discuss the design of the triple dots and present electron transport measurements. Recently, we have realized a triple quantum dot single-electron rectifier [1]. Triple quantum dots can be used to study the exchange interaction in the presence of three spins and may also serve as building blocks for spin-qubit circuits. This work was supported at Harvard by DARPA DAAD19-01-1-0659 and at UCSB by iQuest. 1. A. Vidan, R.M. Westervelt, M. Stopa, M. Hanson, A.C. Gossard "Triple Quantum Dot Charging Rectifier", Applied Physics Letters 85, 3602 (2004).

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