

Abstract Submitted
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Tunable Noise Cross-Correlations in a Double Quantum Dot¹

DOUGLAS MCCLURE, LEONARDO DICARLO, YIMING ZHANG, HANS-ANDREAS ENGEL, CHARLES MARCUS, Harvard University, MICAH HANSON, ART GOSSARD, University of California, Santa Barbara — We report measurements of the cross-correlation between temporal current fluctuations in two quantum dots in the Coulomb blockade regime, with purely capacitive inter-dot coupling. The dots act as a pair of tunable interacting localized states, enabling a systematic study of Coulomb-induced correlation. The sign of the cross-spectral density is found to be tunable by gate voltage and source-drain bias. We find good agreement between the experimental results and a sequential-tunneling model of transport through capacitively coupled single-level dots.

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