

Abstract Submitted
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Coulomb Drag in Open Quantum Dots¹ CANRAN XU, MAXIM VAVILOV, University of Wisconsin - Madison — We investigate the Coulomb drag effect in a system of two open quantum dots, in the presence of interdot and intradot Coulomb interactions. We present an analytical expression for the drag current at the low temperature limit obtained in the random-phase approximation. We show that the non-zero current arises from the asymmetry of electronic states with respect to the Fermi level. This asymmetry originates due to fluctuations of the transmission amplitudes in the chaotic quantum dots described by a random-matrix theory, and therefore the drag current exhibits interesting sample-to-sample mesoscopic fluctuations.

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