

Abstract Submitted
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Magnetically tunable 1D Coulomb drag: Theory¹ ANTHONY TYLAN-TYLER, YUHE TANG, JEREMY LEVY, University of Pittsburgh — In this work, we examine the Coulomb drag effect in 1D nanowires in close proximity, focusing on experimental parameters relevant to complex-oxide nanostructures. Previous work on this problem examined Coulomb drag through quantum point contacts, where effective capacitive coupling between the 2D leads of the system generates the drag voltage. In our case, the entire system is composed of 1D components and thus a more careful treatment of the Coulomb interactions is required. This more complex environment then leads to the ability to switch the drag voltage by an applied magnetic field without altering the current supplied to the drive system.

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Anthony Tylan-Tyler
University of Pittsburgh

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