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**Hole Transport and Spin Effects in Cleaved-Edge-Overgrowth Quantum Wires** JOSEPH SULPIZIO, CHARIS QUAY, Department of Physics, Stanford University, RAFI DE PICCIOTTO, K.W. WEST, L.N. PFEIFFER, Bell Laboratories, Alcatel-Lucent, DAVID GOLDHABER-GORDON, Department of Physics, Stanford University — Transport measurements on ballistic GaAs electron wires have revealed a rich set of phenomena associated with one-dimensional (1D) quantum systems. Studies of transport in hole systems are a natural extension of these experiments due to the enhanced effective mass, g-factor, and spin-orbit coupling of holes over their electron counterparts. However, only recently has the creation of ballistic hole wire devices been possible due to breakthroughs in molecular beam epitaxy using the cleaved-edge-overgrowth (CEO) technique. We present measurements of hole transport in CEO GaAs quantum wires in magnetic field in a dilution refrigerator. Based on a simple model, we extract the g-factor for different field orientations, and also discuss evidence for observing spin-orbit coupling in a 1D system.

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