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Measurements of spin polarization and spin relaxation in 2D electron gases S.M FROLOV, University of British Columbia, A. VENKATESAN, W. YU, J.A. FOLK, UBC, W. WEGSCHEIDER, University of Regensburg — Pure spin currents are generated and detected using quantum point contacts in narrow channels of a GaAs/AlGaAs 2D electron gas. A spin relaxation length of 50 microns is achieved due to a cancellation of Rashba and Dresselhaus spin-orbit interactions along 110 crystal direction. Spin currents observed at zero magnetic field are correlated with the 0.7 conductance feature of quantum point contacts, suggesting static spontaneous spin polarization.

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