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Effect of direct current on giant negative magnetoresistance in two-dimensional electron systems Q. SHI, P.D. MARTIN, Q.A. EBNER, M.A. ZUDOV, School of Physics and Astronomy, University of Minnesota, Minneapolis, Minnesota 55455, USA, L.N. PFEIFFER, K.W. WEST, Department of Electrical Engineering, Princeton University, Princeton, New Jersey 08544, USA — We report on a giant negative magnetoresistance in a 200 micron-wide Hall bar fabricated from GaAs/AlGaAs quantum well. Comparison with theory shows that magnetoresistance is much stronger than one could expect from either electron-electron interaction or classical memory effects due to sharp and smooth disorder. In this talk we systematically examine the effect of direct current and compare our findings with temperature dependence.

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