

Abstract Submitted  
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**Nonlinear transport in two-dimensional electron systems with separated Landau levels**<sup>1</sup> MAXIM KHODAS, Department of Physics and Astronomy, University of Iowa, Iowa City, Iowa 52242, MICHAEL ZUDOV, School of Physics and Astronomy, University of Minnesota, Minneapolis, Minnesota 55455, LOREN PFEIFFER, KENNETH WEST, Department of Electrical Engineering, Princeton University, Princeton, New Jersey 08544 — The resistivity of a high mobility two-dimensional electron gas subject to a weak perpendicular magnetic field and low temperatures is strongly non-linear. This nonlinearity becomes more pronounced when the Landau level width becomes smaller than the cyclotron energy; at very small dc electric fields the differential resistivity becomes strongly suppressed and can even approach zero. Using the quantum kinetics approach we calculate the characteristic current responsible for the suppression and compare the results to the experimental data obtained in a high mobility 2DES at low temperatures.

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