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**Strong negative magnetoresistance in high-mobility 2D electron systems** MICHAEL ZUDOV, ANTHONY HATKE, School of Physics and Astronomy, University of Minnesota, Minneapolis, MN 55455, USA, JOHN RENO, Sandia National Laboratories, Albuquerque, NM 87185, USA, LOREN PFEIFFER, KEN WEST, Princeton University, Department of Electrical Engineering, Princeton, NJ 08544, USA — This talk reports on a remarkably strong negative magnetoresistance effect in high mobility GaAs/AlGaAs heterostructures and quantum wells. The effect is the strongest at about 1 kG where a deep and strongly temperature dependent minimum is observed. At low temperature, the resistivity at this minimum is a small fraction of the zero field resistivity. The talk will discuss the effects of temperature and in-plane magnetic field on this negative magnetoresistance and compare experimental findings with existing theories. A portion of this work was performed at the National High Magnetic Field Laboratory, which is supported by NSF Cooperative Agreement No. DMR-0654118, by the State of Florida, and by the DOE and at the Center for Integrated Nanotechnologies, a U.S. Department of Energy, Office of Basic Energy Sciences user facility. The work at Minnesota was supported by the NSF Grant No. DMR-0548014 and by the DOE Grant No. DE-SC002567. The work at Princeton was partially funded by the Gordon and Betty Moore Foundation and the NSF MRSEC Program through the Princeton Center for Complex Materials (DMR-0819860) and the work at Sandia was supported by the Sandia Corporation under Contract No. DE-AC04-94AL85000. Sandia National Laboratories is a multi-program laboratory managed.

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