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Transport in Bilayer Graphene at the Charge Neutrality Point WENZHONG BAO, University of Maryland at College Park, JAIRO VELASCO, University of California, Riverside, FAN ZHANG, University of Texas at Austin, Austin, LEI JING, University of California, Riverside, BRIAN STANDLEY, California Institute of Technology, DMITRY SMIRNOV, National High Magnetic Field Laboratory, Tallahassee, ALLAN MACDONALD, University of Texas at Austin, Austin, MARC BOCKRATH, CHUNNING LAU, University of California, Riverside, DEPARTMENT OF PHYSICS AND ASTRONOMY, UNIVERSITY OF CALIFORNIA, RIVERSIDE TEAM — Bilayer graphene (BLG) at the charge neutrality point is strongly susceptible to electronic interactions, and expected to undergo a phase transition into a state with spontaneous broken symmetries. We experimentally investigate transport properties of a large number ultra-clean BLG devices as functions of temperature, disorder, out-of-plane electric field, and charge density. We will discuss the results in terms of various theoretical models and possible phase transitions arising from the rich many body physics in this 2D system.

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