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Electron Drag in Intermediate Magnetic Fields SANGHUN AN, GOKUL GOPALAKRISHNAN, YUKO SHIROYANAGI, SARAH PARKS, DONGKYUN KO, THOMAS GRAMILA, Ohio State University, Physics Dept., LOREN PFEIFFER, KEN WEST, Bell Labs, Lucent Technologies — We report measurements of electron drag on the bilayer two-dimensional electron gas (2DEG) in intermediate magnetic fields, for which anomalous temperature-dependence and field-dependence of the drag resistivity have been previously observed. In this regime, drag resistivity shows surprisingly little temperature dependence, as well as a highly unusual field dependence which varies roughly as the cube of magnetic field. To our knowledge, no theoretical works have predicted such behavior. We have continued investigation of drag in this regime, therefore, in an attempt to understand the source of this anomalous behavior. We report detailed measurements exploring the potential role of spin in the process via application of an in-plane magnetic field, as well as examination of possible correlation effects, and a careful study of the temperature dependence.

Sanghun An
Ohio State University

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