

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Electron Drag in High Filling Factors** GOKUL GOPALAKRISHNAN, SANGHUN AN, YUKO SHIROYANAGI, DONGKYUN KO, THOMAS GRAMILA, The Ohio State University - Physics Dept., LOREN PFEIFFER, KENNETH WEST, Bell Labs, Lucent Technologies — Electron drag measurements, which permit direct detection of electron-electron scattering rates, have revealed a number of surprising behaviors in bilayer electron systems in the presence of magnetic fields. Among these is an oscillation in the polarity of the drag voltage with the difference in filling factors of the two layers, measured at high filling factors. Recent theoretical examinations of this sign reversal have pointed to particle-hole asymmetry induced by Landau quantization[1], and disorder induced mixing of Landau levels[2] as the source. In addition to the sign reversal is an unusual temperature dependence. Experiments[3] have suggested an activated behavior in this regime, with the activation energy related to the Zeeman energy. This result, however, differs functionally from the theoretical calculation in [1]. We report on measurements that examine this potential contradiction in order to investigate the nature of Coulomb drag in this regime.

[1]I. V. Gornyi, et al, PRB 70, 245302 (2004)

[2]R. Bistritzer, A. Stern, PRL 96, 226801 (2006)

[3]K. Muraki, et al, PRL 92, 246801 (2004)

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Date submitted: 02 Dec 2006

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