Abstract Submitted for the MAR05 Meeting of The American Physical Society

Exploring Electron Drag in Intermediate Magnetic Fields SANGHUN AN, GOKUL GOPALAKRISHNAN, YUKO SHIROYANAGI, SARAH PARKS, THOMAS GRAMILA, Ohio State University, Physics Dept., LOREN PFEIFFER, KEN WEST, Bell Labs, Lucent Technologies — Electron Drag between two two-dimensional electron gases has shown an unusual increase in intermediate magnetic fields ($\omega_c \tau > 1$ but $KT > \hbar \omega_c$) even before the onset of the Quantum Hall Effect. For closely spaced layers, the increase in electron drag above the zero field values shows remarkably little dependence on temperature, and is found to increase as the cube of the magnetic field. Both of these aspect of the increase are difficult to understand within our current understanding of 2-D electron system. We report on measurements which explore the experimental influences on this behavior, with a focus on the temperature and densities for which the behavior is found.

> Sanghun An Ohio State University, Physics Dept.

Date submitted: 01 Dec 2004

Electronic form version 1.4