Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

The Transport of Graphene in a Parallel Field ADAM FRIEDMAN, ANISH MOKASHI, LATIKA MENON, Northeastern University Dept. of Physics — The recent discovery of graphene and its remarkable properties has generated an enormous amount of research and has led some to contemplate it as a replacement for silicon in the next generation of computer chips. A large amount of theoretical work has been completed, but very little experimental work has been done to verify the theory. In particular, experiments have neglected the effect of a magnetic field applied parallel to the 2-D surface plane. Theory [1] has predicted that this orientation of magnetic field will split the spectra of particles and holes, which will then interact with each other through attractive Coulomb forces, driving a metal to gapped insulator transition. We will report the results of experimental studies of the transport in graphene in a parallel magnetic field at low temperatures. [1] I. L. Aleiner, D. E. Kharzeev, and A. M. Tsvelik, arXiv:cond-mat/0708.0394

Adam Friedman
Northeastern University Dept. of Physics

Date submitted: 02 Dec 2007 Electronic form version 1.4