

Abstract Submitted  
for the MAR12 Meeting of  
The American Physical Society

**Effects of disorder induced scattering in chemical vapor deposited Graphene.** MING-YANG LI, CHIU-CHUN TANG, Dep.Of Physics, National Tsing Hua University, Taiwan, LAIN-JONG LI, Research Center for Applied Sciences, Academia Sinica, CHENG-CHUNG CHI, JENG-CHUNG CHEN, Dep.Of Physics, National Tsing Hua University, Taiwan — The effect of the short-range scatters in chemical vapor deposited (CVD) graphene on the quantum interference effect of carrier scattering remains to be an interesting question. We study the magneto-resistance and low-frequencies noise of our CVD graphene by varying carrier density and temperature. Unlike previous studies of exfoliated clean graphene flakes, we have found in the vicinity of the Dirac-point (DP) WL signal cannot be fully described in terms of breaking the valley symmetry due to trigonal warping of the bands and atomically sharp disorder [1,2]. The discrepancy regime is coincident with the suppression of noise figures and the vanishing of Hall coefficient. Our data suggest that in low mobility CVD graphene an extra inter-valley elastic scattering process should be considered under the theoretical basis in Ref.1. More detailed experimental results and theoretical analysis will be presented and discussed. Ref[1]: E. McCann, et al., Phys. Rev. Lett. 97 146805(2006) Ref[2]: J.Phys. : Condens. Matter 22 205301 (2010)

Ming-Yang Li  
Dep.Of Physics, National Tsing Hua University, Taiwan

Date submitted: 11 Nov 2011

Electronic form version 1.4