Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Transport and electronic structure of bilayer graphene[1] SANKAR DAS SARMA, E. ROSSI, E. H. HWANG, CMTC, Department of Physics, University of Maryland — We calculate the transport properties of bilayer graphene. Away from the neutrality point we find that the Boltzmann theory well agrees with current experimental results. Close to the neutrality point charge impurities break up the carrier density landscape in electron-hole puddles and the physics is dominated by the disorder induced strong charge density inhomogeneities. We quantitatively characterize the charge density fluctuations close to the neutrality point. Using the calculated carrier density probability distribution we develop a transport theory that takes into account the strong charge density inhomogeneities present in the vicinity of the neutrality point.

[1]This work is supported by NSF-NRI-SWAN and US-ONR.

E. Rossi
CMTC, Department of Physics, University of Maryland

Date submitted: 20 Nov 2009 Electronic form version 1.4