

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Longitudinal Conductivity of Bilayer Graphene in the Integer Quantum Hall Regime ROHIT HEGDE, ALLAN MACDONALD, University of Texas at Austin — We investigate the frequency dependent conductivity of disordered bilayer graphene near neutral filling, in a strong magnetic field. Absent Zeeman coupling, and with two independent valleys, a graphene bilayer's lowest Landau level is eightfold-degenerate, comprising two Landau orbitals of equal energy. Its spectral properties are altered by an inter-layer bias potential, which can open a gap between the constituent orbitals. We establish the dependence of the one and two-particle disorder-averaged Greens' functions on inter-layer bias, and show that the longitudinal conductivity exhibits the signature of disorder-induced Landau orbital mixing.

Rohit Hegde
University of Texas at Austin

Date submitted: 07 Dec 2010

Electronic form version 1.4