



CHUN NING (JEANIE) LAU 'Quantum Transport and Correlated Phenomena in Bilayer and Trilayer Graphene Membranes'

CHUN NING (JEANIE) LAU

June 10, 2013

Seminar, June 10, 2013, 15:00. Seminar Room

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Graphene, a two - dimensional single atomic layer of carbon, has recently emerged as a new model system for condensed matter physics, as well as a promising candidate for electronic materials. Though single layer graphene is gapless, bilayer and trilayer graphene have

tunable band gaps that may be induced by out-of-plane electric fields or arise from collective excitation of electrons. Here I will present our results on transport measurements in bilayer and trilayer graphene devices with mobility as high as 400,000 cm²/Vs. We demonstrate the presence of an intrinsic gapped state in bilayer graphene at the charge neutrality point, evidence for quantum phase transition, and stacking-order dependent transport in trilayer graphene. Our results underscore the fascinating many-body physics in these 2D membranes, and have implications for band gap engineering for graphene electronics and optoelectronic applications.

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Hosted by Prof. Frank Koppens