

Colloquium
Dahlem Center for Complex Quantum Systems

Interaction Induced Physics in Graphene

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Time: Thursday, January 10th, 2013, 14:00 c.t.

Location: Hörsaal A (1.3.14)

Abstract:

Progress in graphene sample quality starts to disclose rich physics related to the interaction induced fractional quantum Hall effect as well as lifting of symmetries associated with the spin and pseudospin degrees of freedom. A key requirement to observe these fragile states has so far been the fabrication of better quality samples. This has been accomplished by placing graphene on a flatter substrate, which is less prone to attract adsorbates, such as BN, or by suspending and current-annealing graphene. In the quest for observing still more fragile or novel incompressible states, probing a smaller area may circumvent the challenges of producing even higher mobility samples, since the sample may be much cleaner on the nanometer scale. Here we have performed local compressibility studies on a suspended graphene flake using a scanning single electron transistor as well as unconventional transport measurements which provide local information. An overview will be given of the rich interaction physics that can be revealed in this manner.