



Der Fachbereich Physik und der Verein der Freunde und Förderer der Physik an der Universität Hamburg e. V. laden ein:



Kolloquium

Dirac Fermions in Graphene

Prof. Dr. Reinhold Egger

Institut für Theoretische Physik

Heinrich – Heine – Universität Düsseldorf

Donnerstag, 12. Mai 2011, 17 Uhr (s.t.)

Wolfgang – Pauli – Hörsaal

Jungiusstraße 9

Carbon atoms in graphene (Nobel Prize in Physics 2010) form a honeycomb lattice with fascinating electronic properties. At low energy scales, massless two-dimensional Dirac fermions emerge, implying a tabletop realization of relativistic quantum mechanics. With interactions, analogies to quantum electrodynamics can be drawn, but with rather strong coupling (fine structure constant of order unity).

I will give a broad and elementary overview introducing the key phenomena in graphene, with main emphasis on the relevant theoretical concepts and recent predictions. For instance, I plan to discuss Klein tunneling, disorder effects, the quantum Hall effect in graphene, and scattering of Dirac fermions by magnetic defects.

Kontakt: Prof. Dr. Michael Thorwart