

Hauptseminar: Graphene

Dirac-Fermions in 2D-Carbon Monolayers

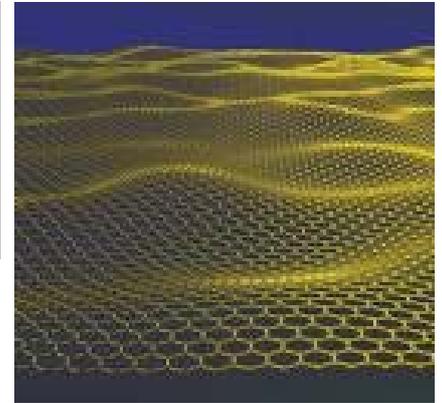
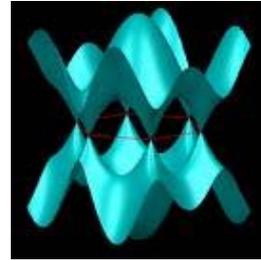
Coordinators:

Prof. Jan von Delft

Dr. Florian Marquardt

Dr. Oleg Yevtushenko

Lecture Hall 348/349, Theresienstr. 37
Wed. 10:15-11:00 (starting 23.04.2008)



„Graphene is a rapidly rising star on the horizon of materials science and condensed matter physics. This strictly two-dimensional material exhibits exceptionally high crystal and electronic quality and, despite its short history, has already revealed a cornucopia of new physics and potential applications. Whereas one can be certain of the realness of applications only when commercial products appear, graphene no longer requires any further proof of its importance in terms of fundamental physics. Owing to its unusual electronic spectrum, graphene has led to the emergence of a new paradigm of 'relativistic' condensed matter physics, where quantum relativistic phenomena, some of which are unobservable in high energy physics, can now be mimicked and tested in table-top experiments. More generally, graphene represents a conceptually new class of materials that are only one atom thick and, on this basis, offers new inroads into low-dimensional physics that has never ceased to surprise and continues to provide a fertile ground for applications.“

A.K.Geim and K.S. Novoselov, in Nature Materials (2007)

The goal of the seminar is to introduce participants to some of the elementary properties of graphene.

Prerequisites: Elementary knowledge of Quantum Mechanics and Solid State Physics