Graphene: Folding and Rings

Rolf J. Haug

Institut für Festkörperphysik, Leibniz Universität Hannover, Germany

Graphene has a remarkable wealth of fascinating properties [1] and thousands of articles have been published during the last 10 years. In the talk I will concentrate on two systems made out of graphene: ring structures and folded monolayers. The folding of a monolayer of graphene results in a stack of two monolayers with a certain twist angle between the crystallographic directions of the two layers. Depending on this twist angle the properties of the produced system can be quite different [2]. In addition to astonishing electronic properties also the mechanical properties are quite fascinating [3]. The second topic concerns ring structures [4]. Electronic transport through ring structures reveals periodic oscillations as function of magnetic field due to interference effects. Whereas in typical metals or semiconductors only the interference of electrons with electrons or holes with holes can be observed, graphene offers the interesting possibility to study the interference of electrons with holes [5].

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