

Einladung zum Sonderseminar

Am Donnerstag, 13.07.2017, um 16:30 Uhr

Raum 46-576

Dr. Céphise Cacho

Artemis Central Laser Facility, Rutherford Appleton Laboratory, United Kingdom

Tracking electron dynamics at the edge of the Brillouin zone

Novel quantum materials such as graphene and transition metal dichalcogenides (TMDC) are attracting vast scientific interest for spintronic application. Their macroscopic properties are intrinsically governed by the large momentum electrons at the edge of the Brillouin zone. In order to explore the dynamics of such electrons, high photon energy (>20 eV) source is required as well as ultrashort pulse duration. At the Artemis facility High Harmonic Generation beamline is combined to an Angle-Resolved PhotoEmission Spectroscopy (ARPES) experimental chamber to perform time-resolved ARPES with resonant excitation using tunable pump.

After a short overview on the experimental set-up I will present recent results on graphene and semiconductor TMDCs. These dynamical studies show evidence of strong screening effect resulting in large band gap renormalization. Furthermore the control of the spin- and valley-quantum numbers is achieved by using circularly polarized optical excitation. Finally the development of the facility for high repetition rate (100 kHz) source will be presented.

Der Gast wird betreut von Prof. Dr. M. Aeschlimann

GÄSTE SIND HERZLICH WILLKOMMEN!