

Einladung
zum Laser- und Quantenoptikseminar

Freitag, 08.06.2018, um 10:00 Uhr

Raum 46-387/388

Prof. Dr. Zhengsheng Tao

Department of Physics, Fudan University, 220 Handan Road, Shanghai, China 200433

Influence of Material Band Structure on Attosecond Electron Dynamics in Transition Metals

Attosecond (10^{-18}) science is a new frontier of science that is aimed to investigate the fastest dynamics occurring in atoms, molecules and solids. In this talk, I will give an introduction about what we can learn from attoscience studies and how the dynamics on attosecond timescales can be measured in experiments. High-harmonic generation (HHG) so far has served as one of the most powerful tools for attoscience studies. By combining the HHG light source with angle-resolved photoelectron spectroscopy (ARPES), we investigated the photoemission from transition metals with attosecond time resolution and resolved how the photoelectrons transport through the atomic lengthscale in real time. From the results, we, for the first time, unambiguously revealed the strong influence of material band structure on attosecond electron dynamics in solids, which was enabled by the polarization- and angle-dependent measurements. At the same time, by comparing the attosecond photoemission dynamics from the same band of two different transition metals, we also scrutinized the electron-electron interactions (charge screening and scattering) on the shortest timescale ever accessible in the experiments.

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

GÄSTE SIND HERZLICH WILLKOMMEN!