TECHNISCHE UNIVERSITÄT CHEMNITZ

PHYSIKALISCHES KOLLOQUIUM

Mittwoch, den 19.01.2011, um **15:30 Uhr**

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013

Prof. Martin Aeschlimann

Department of Physics und
Research Center OPTIMAS

TU Kaiserslautern

Simultaneous Spatial and Temporal Control of Nanooptical Fields

Improving the spatial resolution in time resolved experiments is of utmost importance for many applications of ultrafast laser spectroscopy. The high sensitivity and lateral resolution of the time-resolved photoemission electron microscopy technique (TR-PEEM) is used to verify simultaneous spatial and temporal control of nanooptical fields. I will demonstrate that adaptive shaping of the amplitude, phase and polarization of ultrashort laser pulses allows to switch between two different excitation patterns within a time scale that can be controlled almost freely and is limited only by the spectral bandwidth of the used coherent light source. This confirms that the polarization-shaped incident laser pulse can indeed be an effective tool for nanoscale localization of ultrashort optical excitation. In addition, I will discuss the future potential of such coherent control experiment in magnetism such as all optical switching on a nanoscale.

Alle Zuhörer sind ab 15:15 Uhr zum Kaffee vor dem Hörsaal eingeladen.

Informationen zum Vortrag erteilt Prof. Dr. Dietrich Zahn, Tel. 0371/531-33036