EINLADUNG
ZUM PHYSIKALISCHEN SONDERKOLLOQUIUM

AM FREITAG, 14.09.2012 UM 10:00 UHR
Raum 46/576

ES SPRICHT: Dr. Stefan Mathias
TU Kaiserslautern

Thema:

"The Power of Ultrafast X-rays for Materials Science"

X-rays represent one of the most powerful tools for understanding complex materials at the nanoscale, uncovering important information related to all electronic, magnetic, structural, and chemical properties of a solid. The recent availability of ultrashort x-ray pulses now paves the way for a completely new generation of experiments that can capture the coupled dynamics of elementary excitations in materials. Ultrashort x-ray pulses can access the fundamental interactions between charge, lattice, orbital, and spin dynamics in real time, which eventually determine the intrinsic physical limits at which, for example, a phase-transition in a correlated-electron material occurs, the magnetic state of a material can be switched, or a chemical reaction on a surface evolves.

In my talk, I will present recent results of femtosecond x-ray materials science experiments, e.g., probing element- and layer-selective magnetization dynamics in complex magnetic materials and capturing ultrafast photo-induced phase transitions in correlated-electron materials. All were realized using a table-top high-harmonic generation lightsource.

Der Gast wird betreut von Herrn Prof. Aeschlimann.

GÄSTE SIND HERZLICH WILKOMMEN.

Kaiserslautern, den 06.09.2012

DIE DOZENTEN DES FACHBEREICHS