KIDS TALK

“Relaxation dynamics in laser-excited metals under nonequilibrium conditions”

Speaker: Sebastian Weber, AG Rethfeld

Abstract:

After excitation with an ultrashort laser pulse, the electrons in a metal are in a strong non equilibrium state. During thermalization, they interact also with the lattice, transferring energy to the phonons. On the basis of complete Boltzmann-type collision integrals, a method allowing to treat materials with an arbitrary density of states has been developed [Phys. Rev. B 87, 035139 (2013)]. This method provides insights into the response of different material classes to ultrafast laser excitation. Here we focus on the study of noble metals which possess characteristic densities of states with an elevated area at a certain distance below the Fermi edge. The results show the thermalization of the electrons within a few femtoseconds. However, electron-phonon coupling hinders the electrons' complete thermalization as long as the temperature of both subsystems differ from each other.

When: Friday, June 10th 2016, **10:00 am**

Where: Room 46-387/388

All undergraduate and graduate students as well as postdocs are welcome and encouraged to join our discussion!

********** COFFEE AND COOKIES WILL BE SERVED **********

For questions, comments or suggestions: othomas@physik.uni-kl.de

MATERIALS IN MAINZ SCIENCE

TECHNISCHE UNIVERSITÄT KAISERSLAUTERN

OPTIMAS TU Kaiserslautern