



Institutskolloquium

Am **14. Juni 2006, 16:00 Uhr** spricht:

Prof. Dr. Chii-Dong Lin

**Department of Physics, Kansas State University
Manhattan, Kansas, USA**

über

Probing atomic and electronic dynamics with sub-10-femtosecond and attosecond light pulses

Abstract

Recent progress in laser technology has made it possible to probe and control the motion of atoms in molecules or electrons in atoms in their natural time scales. In this talk, I will show how sub-10fs laser pulses can be used to reveal directly the shape of molecular orbitals. They can also be used to measure the time interval between the two successive ionizations in the double ionization of molecular hydrogen to an accuracy of sub-femtoseconds. Using attosecond pulses as probe, I will show that the time-resolved vibrational wave packet can be fully mapped in a laser-pump-attosecond-probe experiment. Finally, I will show how attosecond light pulses can be used to probe the correlated rotational and vibrational motion of two electrons in an atom, by doubly ionizing a time-dependent two-electron wave packet.

**Ort: Max-Born-Saal,
MBI, Max-Born-Str. 2a**

Interessenten sind herzlich eingeladen.

Prof. Dr. W. Sandner