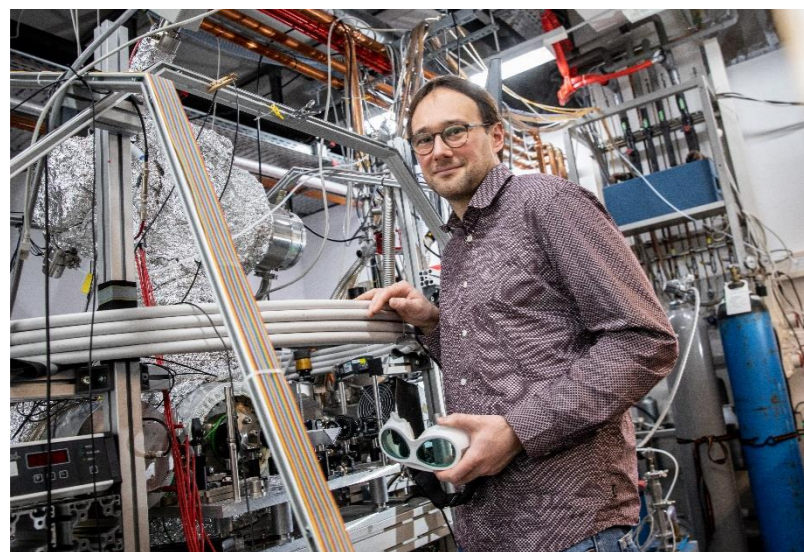


Physikalisches Kolloquium



Thursday, 11.02.2021, 16:15
 Digital Lecture Hall via Zoom

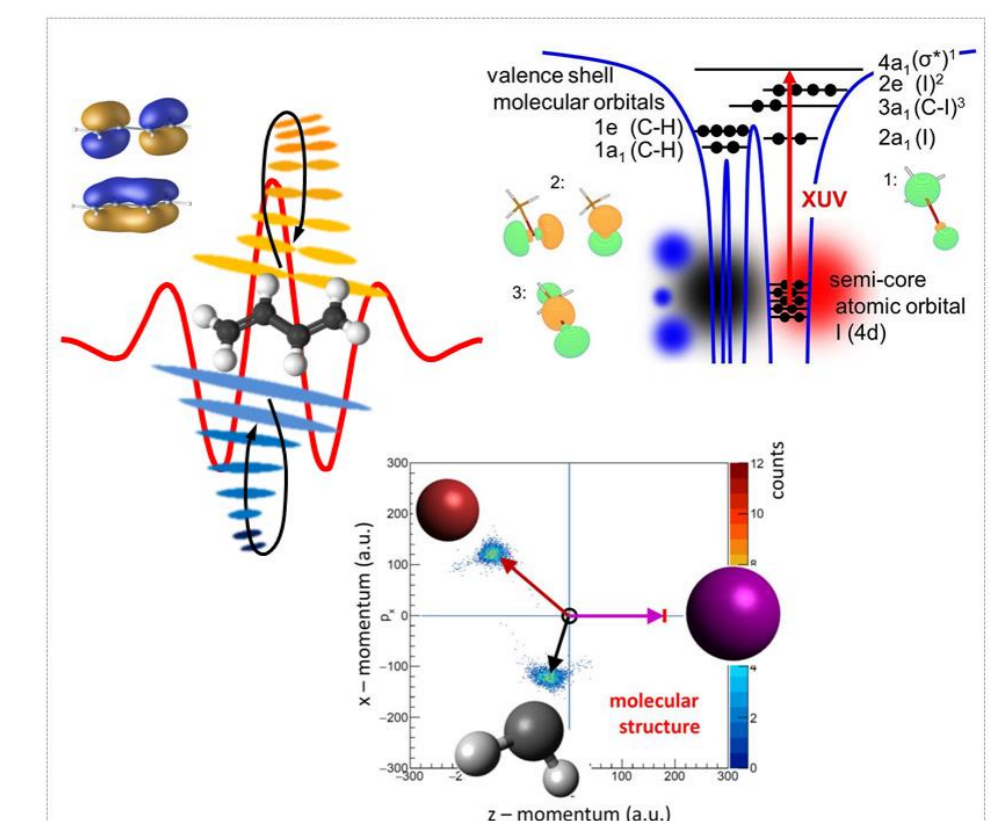
Dr. Jochen Mikosch, Max-Born-Institut, Berlin:

Structural Molecular Dynamics Studied with Intense Laser Fields and XUV Pulses

Abstract

Attosecond Science, driven by the advance in laser technology, is one of physics' most exciting frontiers. Attosecond physicists usually aim at time-resolving the motion of electrons on their natural timescale. Such dynamics derives from the creation and evolution of coherence between different electronic states and proceeds on sub-femtosecond timescales. In contrast, molecular and chemical dynamics involves position changes of atomic centers and functional groups and typically proceeds on a slower, femtosecond timescale inherent to nuclear motion. Nonetheless, there are exciting ways in which dynamics studies of (slightly) more complex molecules and of chemical reactions can hugely benefit from the technological developments pushed forward in the vibrant field of Attosecond Science.

Here I present our work on three complementary experimental approaches to investigate transient structural dynamics of molecules on ultrafast time scales: (1) Laser-Induced Electron Recollision and Diffraction, (2) Transient Absorption of XUV Light, and (3) Laser-Driven Coulomb Explosion Imaging.



All of you interested in physics are cordially invited!