



# **„Structural Investigations of Molecular Dynamics“**

Lecture

by

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Motivated by our kinematically complete studies of nucleophilic substitution reactions we aim at time-resolved structural investigations of molecular dynamics and photo-induced reactions.

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 derive 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 (more) complex molecules and chemical reactions can hugely benefit from the technological developments pushed forward in the vibrant field of Attosecond Science.

I will present our work on different complementary experimental approaches to investigate transient structural dynamics of molecules on ultrafast time scales, with perspectives of studying effects of chirality and local molecular environment.

**Where: Chemistry, H46**

**When: 24.11.2025, 17:00 c.t.**