Strong-field response of molecules and attosecond physics

We shall explore how the response to intense laser pulses depends on the geometrical and electronic structure of molecules. The discussion is based to a large extent on numerical solutions of the time-dependent Schroedinger equation. It is shown that the molecular structure can be identified in the spectra of the generated high-order harmonics and in the spectra of fast photoelectrons. For small molecules, we demonstrate how the laser-induced dynamics can be reconstructed with attosecond resolution from the high-harmonic spectra. We will also see that certain molecular geometries, e.g. the nearly spherical C60 cage, lead to a suppression of laser-induced ionization.