An electron in the Bohr model of a Hydrogen atom orbits a proton in about 0.15 femtoseconds, i.e. in about 150 attoseconds. This talk will explore our attempts to time-resolve the motion of electrons in atoms and molecules at their natural – sub-femtosecond – time-scale. I will describe how one can use highly nonlinear response of atoms and molecules to rather conventional femtosecond pulses to increase available time resolution by about two orders of magnitude.

Specifically, I will show that the process known as high harmonic generation provides a snapshot of the electronic dynamics in atoms and molecules emitting high harmonic radiation, and will present our experimental and theoretical work on decoding the attosecond movie encoded in high harmonic emission.

Host: A. Baltuska

Thursday, June 10th, 2010, 16:00
Seminarraum Institut für Photonik, Gusshausstrasse 27, 1040 Wien, Raum CBEG02

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