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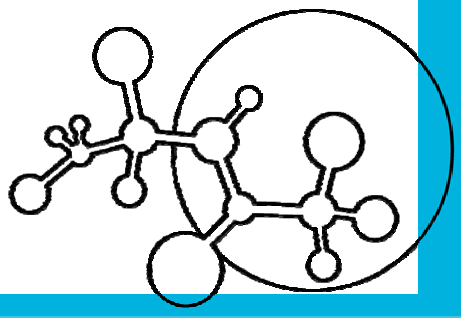

Quantum Efficiency Seminar and Colloquium

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Time-resolved photoelectron emission from atoms and surfaces

State-of-the-art streaking spectroscopy experiments enable the resolution in time of photo-ionization processes at the natural time scale (tens of atto-seconds, 1 as = 10^-18 seconds) of the motion of valence electrons in atoms and solids.
This ultrahigh time resolution allows the unprecedented observation of a "delay time" between the primary absorption of extended ultra violet (XUV) photons and subsequent electron emission in atoms and solids. These delays are typically of the order of tens of attoseconds and accurate probes of the entire photo-emission dynamics.

I will discuss different, currently debated, interpretations of photo-emission delay times based on the comparison of our calculated time-resolved photo-electron spectra with recent experiments. For time-resolved photo-emission from metal surfaces, we find our calculated electron spectra to be very sensitive to details in the modeling of dielectric-response and electron-propagation effects during the laser-assisted XUV excitation and emission process, possibly offering a new way for the time-resolved observation of collective (plasmon) excitations in large atoms, nano-particles, and solids.

Date: **Tuesday, July 12th, 2011 2:15 pm**
Location: **FRIAS Seminar Room, Albertstr. 19, Freiburg**

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