CFEL SCIENCE

SEMINAR

22th January 2015 - 10:00 h

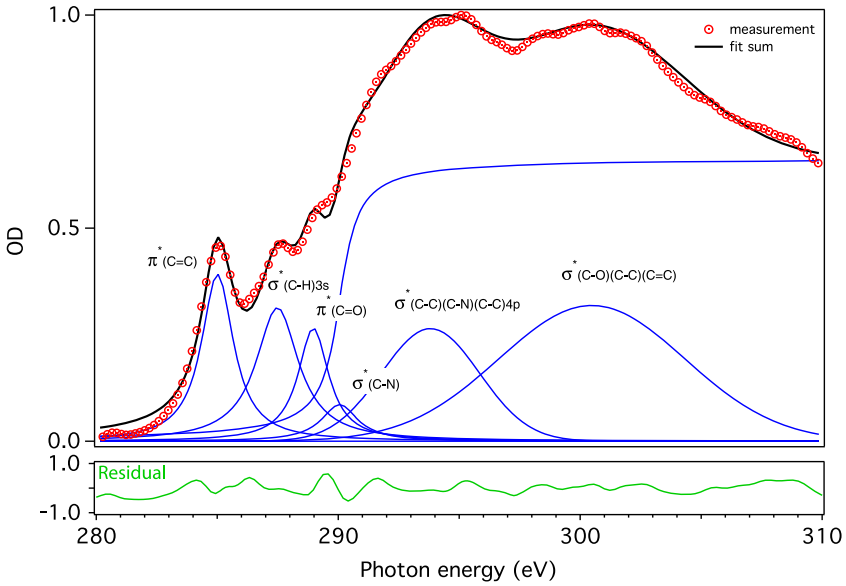
CFEL – Building 99, seminar room I+II (ground floor)

Jens Biegert

ICFO, Mediterranean Technology Park, Castelldelfels (Barcelona), Spain

Electron recollision with mid-IR sources: Molecular Imaging and soft-X-rays

Electron recollision in an intense laser field is at the centre of attoscience research and gives rise to a variety of phenomena, ranging from the photo effect to coherent X-ray emission. We have, over the years, developed intense sources of waveform controlled mid-IR light, i.e. few-cycle duration and carrier to envelope phase stable pulses, to exploit ponderomotive scaling, quantum diffusion and quasi-static photo emission. I will describe the laser technology that enables this new direction of strong field research and our recent achievements in sub-Angstrom resolution imaging of aligned polyatomic molecules, the generation of attosecond pulses at the oxygen K-shell edge (530 eV) and application to soft X-ray absorption spectroscopy in condensed matter (see fig).



Host: Terry Mullins / CFEL Molecular Physics Seminar