

**16<sup>th</sup> January 2014 – 10:00 a.m.**  
 CFEL-bldg. 99, seminar room I and II (EG.076/078)

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### Ionization of naphthalene molecules with strong femtosecond laser pulses: Information from photoelectron angular distributions in the molecular frame and the laboratory frame

Irradiation of gas-phase molecules by ultrashort, strong laser pulses leads to ionization. The electrons detached contain useful information about the molecular structure, in particular if the full 3-dimensional photoelectron momentum (3D PMD) distribution can be measured.

In the talk I will report on recent experiments on strong-field ionization of naphthalene molecules with circularly polarized or elliptically polarized femtosecond laser pulses. The 3D photoelectron momentum distributions are recorded both in the molecular and in the laboratory frame by means of tomographic reconstruction using either aligned or randomly oriented molecules. Our theoretical analysis shows that the observed angular shift of the photoelectron momentum distributions and the low-kinetic energy structures provide information about the multi-electron part of the cationic potential.

