

## Optimization of field-free alignment of molecules for imaging experiments

*Wednesday 14 February 2018 17:00 (2 hours)*

Field-free alignment and orientation of molecules is an important prerequisite for many gas phase imaging experiments. It allows to access information directly in the molecular frame and extract observables such as internuclear distances, angles and the electronic density through a measurement of the photoelectron angular distribution.

We present new experimental results and simulations on strongly field-free aligned molecules, ranging from linear to complex asymmetric rotor molecules. Additionally, photoelectron momentum distributions of strongly aligned OCS molecules, recorded experimentally at different angles between the laser polarization axis and the molecular axis will be presented. The photoelectron angular distributions display large modification with the molecular axis distribution, both at low and high kinetic energies, which encode the molecular structure and electronic density of the molecule. A discussion of the experimental results will be presented.

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**Session Classification:** Poster session 1

**Track Classification:** Poster