

## AKjDPG 2: Tutorial Modern spectroscopy

Time: Sunday 16:00–18:00

Location: b302

**Tutorial** AKjDPG 2.1 Sun 16:00 b302  
**Molecular quantum states and their detection by spectroscopy.** — ●EBERHARD TIEMANN — Institut für Quantenoptik, Leibniz Universität Hannover

In this tutorial I will assume that the participant has a solid knowledge on atomic physics. From there I will add the rotational and vibrational motion to the electronic structure of a system of two or few atoms. I introduce simple models for describing the molecular quantum states and open the view to more advanced and generalized approaches.

In an experimentally oriented part I give examples for rotational, vibrational and electronic spectroscopy and their analysis. How can we use such results for the studies of ultracold atomic and molecular

ensembles?

**Tutorial** AKjDPG 2.2 Sun 17:00 b302  
**Attosecond and femtosecond spectroscopy at extreme limits** — ●HANIEH FATTAHI — Max Planck Institut for the Science of Light

This tutorial is devoted to novel methods for attosecond and femtosecond laser spectroscopy, with an outlook on applications that require extreme spatial resolution. I give an overview of the fundamentals of spectroscopy, and techniques to resolve electron/molecular dynamics. The tutorial is concluded by discussing emerging spectroscopy techniques and their application in hyperspectral imaging.