

**Plenary Talk**

PV IX Thu 8:30 Audimax

**Time-resolved coherent spectroscopy of dilute samples —**

•FRANK STIENKEMEIER — Institute of Physics, University of Freiburg,  
Hermann-Herder-Str. 3, 79104 Freiburg

In the infrared to visible spectral range, coherent nonlinear spectroscopy is an important concept for the real-time study of ultrafast dynamics in complex quantum systems, and has been a driving force for the understanding of biological light harvesting and opto-electronics.

The technique exploits the wave properties of matter detecting interference phenomena, in this way obtaining fine details of the probes. However, corresponding experiments on dilute atomic or molecular systems on the one hand, and on XUV or X-ray wavelength on the other hand, have been hindered by severe experimental challenges. In this talk recent progress will be presented, demonstrating unprecedented sensitivity for dilute samples and sub-cycle phase stability even at XUV and soft X-ray wavelength, entering the attosecond domain for corresponding interferometric experiments.