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Einladung zum Vortrag

"Field-resolved infrared spectroscopy"

Ioachim Pupeza

Max Planck Institute of Quantum Optics, Munich

Termin: **Montag, 02.03.2020, 14:00 Uhr**, **Lehrprobe 14:30 Uhr**

Ort: **Ernst-Mach-Hörsaal, Boltzmanngasse 5, 2. Stock**

Abstract:

We report femtosecond-laser-based sources of powerful, few-cycle, coherent infrared (IR) radiation in the molecular fingerprint region, exhibiting unprecedented optical-waveform reproducibility. Exciting molecular vibrations with these pulses results in the subsequent emission of a highly-sample-specific coherent wave. Causality allows field-resolved spectroscopy (FRS) to record this temporal fingerprint (via electro-optic sampling), in the wake of the excitation remaining after transmission through the sample, rendering it robust against technical noise. FRS measurements of aqueous, biological samples with record sensitivities and transmission pathlengths will be presented, and the extension of FRS to high-spectral-resolution frequency-comb spectroscopy of gases, as well as to sub-wavelength field-resolved microscopy will be discussed.

Im Rahmen des Vortrages findet eine Lehrprobe zum Thema „Resolution in linear optics and its limits" statt.

Dekanat der Fakultät für Physik
A-1090 Wien, Boltzmanngasse 5
Tel.: +43/1/4277 51001 - Fax: +43/1/4277 9510