



# Einladung zum Vortrag

## “Optical Frequency Comb Spectroscopy”

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**Termin:** Montag, 02.03.2020, 09:00 Uhr, Lehrprobe 09:30 Uhr

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

### Abstract:

Optical frequency comb spectroscopy has blossomed into a versatile tool for the broadband study of molecules in the mid-infrared spectral region with high spectral resolution. Direct frequency comb spectroscopy enables measurements with a simultaneous bandwidth of up to hundreds of nanometers at a frequency resolution comparable to ultra-stable continuous-waves light sources. Such measurements have strong implications in particular for the analysis of unknown gas samples, for instance, when monitoring environmental pollutants in the air or for the early detection of diseases in human breath samples. Novel concepts of single-cavity dual-comb sources will allow for a drastic reduction in the complexity of experimental setups and will eventually lead to field-deployable frequency comb spectrometers.

In this talk, I will review state-of-the-art experiments in cavity-enhanced spectroscopy, mid-IR frequency combs and recent developments in crystalline mirror technology before presenting work towards high-resolution mid-IR spectroscopy based on single-cavity dual-combs as well as towards cavity-enhanced comb-mode resolved Doppler-free saturation spectroscopy.

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