



## Einladung zum Vortrag

### “Outdoor trace gas measurements using dual frequency comb spectroscopy”

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**Termin:** Montag, 02.03.2020, 10:45 Uhr, Lehrprobe 11:15 Uhr

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

#### Abstract:

Dual comb spectroscopy is ideal for trace gas sensing in the open atmosphere. It is a broadband spectral technique which allows for measurements of multiple gas species simultaneously under identical conditions without the need to scan wavelengths. It is a coherent and bright technique which allows measurements to be made over much longer path lengths than with incoherent techniques such as Fourier transform spectroscopy. Finally, it has an accurate wavelength scale which eliminates the need for wavelength calibration and is a instrument line-shape-free technique.

Over the past several years, the Fiber Sources and Applications Group at NIST has developed several dual comb spectroscopy instruments in both the near-infrared and the mid-infrared to measure trace gases over open paths. Here, we present work on the first quantitative intercomparison of two near-infrared dual comb spectroscopy instruments, quantification of vehicle carbon dioxide emissions from Boulder, Colorado using dual comb spectroscopy, and the preliminary results of a very recent deployment of a mid-infrared system to an oil and gas drilling site in Colorado.

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