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INSTITUT FÜR PHOTONIK
Photonics Institute

Gußhausstraße 27-29, 1040 Wien/ Vienna Tel: +43 1 58801 38701 Fax: +43 1 58801 38799 <http://www.photonik.tuwien.ac.at/>

PHOTONIK SEMINAR

Oliver H. Heckl

University of Vienna

Optical Frequency Comb Spectroscopy

Optical frequency comb spectroscopy has blossomed into a versatile tool for the broadband study of molecules in the mid-infrared (mid-IR) spectral region with high spectral resolution. Cavity-Enhanced Direct Frequency Comb Spectroscopy (CE-DFCS) enables measurements with a simultaneous bandwidth of up to hundreds of nanometers at a frequency resolution comparable to ultra-stable continuous-waves (CW) light sources. Such measurements have strong implications in particular for the analysis of unknown gas samples, for instance when monitoring environmental pollutants in air or for the early detection of diseases in human breath samples.

In this talk, I will review state-of-the art experiments in cavity enhanced spectroscopy along with recent developments in crystalline mirror technology, before presenting our work towards high-resolution mid-IR spectroscopy in our Christian-Doppler Laboratory for Semiconductor Optics and Mid-IR Spectroscopy.

Tuesday, June 4th, 2019, 11:15

Seminarraum Institut für Photonik

Gußhausstraße 27-29, 1040 Wien, Raum CBEG02