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Novel Applications for Dual Comb Spectroscopy

Dual comb spectroscopy, an innovative form of traditional Fourier transform spectroscopy, combines broad spectral coverage and short measurement times with simultaneously unprecedented spectral resolution. Having its origin in gas phase measurements, we recently extended the application field of dual comb spectroscopy to liquid samples with additional μm spatial resolution via hyperspectral imaging and Raman spectroscopy.

Due to the versatility of the method, a variety of dual comb spectrometers have been realized lately in the THz, visible and infrared spectral region but not yet in the (extreme) ultraviolet (XUV). Our recent efforts towards this development are discussed in the talk. This extension towards the XUV opens up also new potential applications aiming at solid state samples such as high resolution imaging of semiconductor chips.