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Exploring the terahertz region with a narrowband tunable source
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— The generation of widely tunable coherent terahertz (THz) frequencies is of great interest for a variety of applications in basic and applied sciences. This talk will present a narrow bandwidth approach to THz generation by means of difference frequency generation (DFG) between two optical parametric generators (OPG's). Since the OPG sources are narrow bandwidth and tunable, the DFG technique offers a pathway to tunable narrowband THz frequencies. The results based on DFG mixing the outputs from two OPG's in 4-dimethylamino-N-methyl-4-stilbazolium-tosylate (DAST) show narrow-bandwidth operation from 1.6 to 4.5 THz. The utility of this system as a THz source will be demonstrated by showing the latest results of high-resolution transmission spectra for several materials.

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