499
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Abstract: We have developed a terahertz spectrometer based on difference frequency generation of beams from an ytterbium fiber master oscillator power amplifier (MOPA) system. The spectrometer has a resolution of similar to 2 GHz. It can be tuned rapidly over several hundred GHz, and a wider frequency range can be covered (0.7-2.5 THz demonstrated) by swapping in alternate seed lasers and adjusting the alignment of the beams into the difference frequency generation (DFG) crystal. The system was constructed entirely from commercially available fiber and fiber components. We present some demonstration data on water vapor absorption lines.
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