361. Title:Single-shot terahertz spectroscopy using pulse-front tilting of an ultra-short probe pulse
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Abstract:We developed a single-shot terahertz pulse measurement technique using pulse-front tilting of an ultra-short probe pulse and demonstrated single-shot terahertz spectroscopy. A transmission grating was used to introduce a sufficiently large pulse-front tilt angle. A measuring time range of 23.8 ps was achieved. The measured temporal waveforms were corrected in consideration of the nonlinearity arising from the crossed-Nicols arrangement employed and the beam profiles of the probe and terahertz pulses. The characteristic spectrum of lactose was measured with a single terahertz pulse, and the effectiveness of our single-shot technique was confirmed by comparison with a conventional sampling method.