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Title:Ultrashort pulse characterization with a terahertz streak camera
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Abstract:A phase-locked terahertz transient is exploited as an ultrafast phase gate for femtosecond optical pulses. We directly map out the group delay dispersion of a low-power near-infrared pulse by measuring the electro-optically induced polarization rotation as a function of wavelength. Our experiment covers the spectral window from 1.0 to 1:4um and reaches a temporal precision better than 1 fs. A quantitative analysis of the detector response confirms that this streaking technique requires no reconstruction algorithm and is also well suited for the characterization of pulses spanning more than one optical octave.
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