50
标题: Calibration of a thermal detector for pulse energy measurement of terahertz radiation
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摘要: We present a calibration method for measuring the terahertz pulse energy through a conventional thermal power detector. Short terahertz pulses were generated by mechanically modulating a continuous wave source with a chopper containing a narrow slot and detected by a Golay cell. We use a calibrated calorimeter to monitor the total source power so we can know the terahertz pulse energy in advance. The Golay detector response to rectangular pulses is theoretically analyzed and the peak amplitude of its output signal is found to be the relevant parameter to determine the pulse energy. We accomplish absolute calibration for the pulse responsivity of the Golay cell by examining the linear correlation between the output signal and the incident energy. (C) 2012 Optical Society of America
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