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Title:Terahertz wavefront measurement with a Hartmann sensor
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Abstract:The measurement of the wavefront of a terahertz (THz) beam is essential for the development of any optical instrument operating at THz frequencies. We have realized a Hartmann wavefront sensor for the THz frequency range. The sensor is based on an aperture plate consisting of a regular square pattern of holes and a microbolometer camera. The performance of the sensor is demonstrated by characterizing the wavefront of a THz beam emitted by a quantum-cascade laser. The wavefront determined by the sensor agrees well with that expected from a Gaussian-shaped beam. The spatial resolution is 1 mm, and a single-wavefront measurement takes less than 1 s. © 2012 American Institute of Physics.
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