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Title:Tomographic imaging using photonically generated low-coherence terahertz noise sources
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Abstract:Three-dimensional (3D) terahertz (THz) imaging or THz tomography has recently proven to be powerful for non-destructive testing of industrial materials and structures. In order to reduce complexity and cost of conventional THz tomography systems, we propose a new approach using broadband THz noise sources based on amplified spontaneous emission noise, which is analogous to the optical coherence tomography (OCT) using broadband infrared sources. We have experimentally demonstrated a 3D imaging system with depth and spatial resolutions of 1 and 2 mm, respectively, by 280-380 GHz band noise signals. © 2011-2012 IEEE.
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