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标题: Terahertz interferometric synthetic aperture tomography for confocal imaging systems
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摘要: Terahertz (THz) interferometric synthetic aperture tomography (TISAT) for confocal imaging within extended objects is demonstrated by combining attributes of synthetic aperture radar and optical coherence tomography. Algorithms recently devised for interferometric synthetic aperture microscopy are adapted to account for the diffraction-and defocusing-induced spatially varying THz beam width characteristic of narrow depth of focus, high-resolution confocal imaging. A frequency-swept two-dimensional TISAT confocal imaging instrument rapidly achieves in-focus, diffraction-limited resolution over a depth 12 times larger than the instrument's depth of focus in a manner that may be easily extended to three dimensions and greater depths. (C) 2012 Optical Society of America
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