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Title:A system for THz imaging of low-contrast targets using the born approximation
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Abstract:A THz imaging system, operating at 346 GHz and tailored for implementation of an imaging algorithm based on the Born approximation, is presented. The imaging algorithm provides focusing by compensating for the antenna footprint. This allows for using a more simple antenna system without optical focusing. Several aspects of implementing an imaging algorithm based on the Born approximation in THz imaging are discussed and key system properties are highlighted. The performance of the imaging algorithm is verified by imaging two simple dielectric targets. The results indicate that this approach provides a qualitative indication of the distribution of contrast in the samples complex permittivity and is a potential complement to existing imaging techniques.
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