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标题: Study of the impedance mismatch at the output end of a THz parallel-plate waveguide
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摘要: We study the reflection of terahertz (THz) radiation at the end of a parallel-plate waveguide (PPWG), due to the impedance mismatch between the propagating transverse-electromagnetic mode and the free-space background. We find that, for a PPWG with uniformly spaced plates, the reflection coefficient at the output face increases as the plate separation decreases, consistent with predictions by early low frequency ray optical theory. We also study the reflection coefficient for tapered PPWGs where the plate spacing is tapered, for which no analytical theory exists, and quantify the reflection coefficient as a function of the plate separation and the THz frequency. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.3695329]
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