374
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Title:Transmission characteristics of circular metallic waveguides for terahertz radiation
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Abstract:Transmission characteristics of oversized circular metallic waveguides excited by linearly polarised Gaussian laser beams in the terahertz range (4 - 28 THz) are studied theoretically and experimentally. Calculating the transmission characteristics, we have determined the conditions of applicability of the method of the eigenoscillations in the approximations of a real metal by an ideal metal or dielectric, depending on the transmitted radiation frequency. The existence of the transition region is established in the behaviour of the electrodynamic properties of metallic waveguides in the frequency range of 7.5 - 15 THz.
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