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Title:Formation of extended field patterns in open resonators with trapezoidal mirrors
Authors:Miroshnichenko, V.S. (1); Dudka, V.G. (1); Yudintsev, D.V. (1); Usikov, A. (1)
Author affiliation:(1) Institute of Radio Physics and Electronics, National Academy of Sciences of Ukraine, 12, Academician Proskura St., Kharkiv 61085, Ukraine
Corresponding author:Miroshnichenko, V.S.(mirosh@ire.kharkov.ua)
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Abstract: Application of trapezoidal mirrors to form extended field patterns in open resonators of the terahertz band is analyzed. Results of numerical simulation of resonant mode characteristics for a 2D open resonator with trapezoidal mirrors are presented. The radiation Q-factor and field patterns are determined for E0q-, E1q- and E2q-modes of the resonator. Parameters of the trapezoidal mirrors are optimized to minimize the radiation loss in the open resonator with extended field pattern. It has been found that rotational displacement of one of the trapezoidal mirrors makes it possible to obtain ascending field distribution in the open resonator. A comparative analysis is given to mode characteristics in open resonators with corner and trapezoidal mirrors.