Abstracts

Modes of Elliptical Waveguides: A Correction

D.A. Goldberg, L.J. Laslett and R.A. Rimmer. "Modes of Elliptical Waveguides: A Correction." 1990 Transactions on Microwave Theory and Techniques 38.11 (Nov. 1990 [T-MTT]): 1603-1608.

We show that the fields associated with the TM/sub 01/, mode of an elliptical waveguide are qualitatively different from those which have appeared in the standard literature for the past 50 years, and that the original fields as plotted were also in qualitative disagreement with the analytic expressions which accompanied them. Nonetheless, the cutoff frequencies given for that mode, as well as for the five other modes described in those references, are exceedingly accurate (within roughly 1%) for elliptical eccentricities as large as 0.75; for eccentricities in excess of 0.9, the inaccuracy increases from 5% to nearly 50%, depending on the mode in question.

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