B. Reference [3]

1) Page 149, equations (27a) and (27b) for the $(LSE)_{mn}$ and $(LSM)_{mn}$ modes should read, respectively,

$$(\psi_h)_{mn} = f(x) \cos \frac{n\pi y}{b} \exp(-\gamma z)$$

$$(\psi_e)_{mn} = g(x) \sin \frac{n\pi y}{b} \exp(-\gamma z)$$

since $f(x) \neq \sin m\pi x/a$ and $g(x) \neq \cos m\pi x/a$ [2].

2) Page 149, there are some errors in the statement "It is to be noted that the waves $(LSM)_{0n}$ and $(LSE)_{m0}$ correspond to H_{0n} and E_{m0} waves of a homogeneous guide." We think the authors would like to mean "$\cdots E_{0n}$ and $H_{m0} \cdots$." As pointed out previously the waves $(LSM)_{0n}$ and E_{0n} do not exist in a rectangular waveguide. The $(LSE)_{m0}$ or H_{m0} exist, not only in a homogeneous guide, but also in an inhomogeneous one.

3) Page 198, equations (82) and (84) should read, respectively,

$$Y_{in} = Y_0^{(2)} \frac{-jY_0^{(1)} \cot\left(x_1 \frac{a-d}{2}\right) + jY_0^{(2)} \tan\left(x_2 \frac{d}{2}\right)}{Y_0^{(2)} + Y_0^{(1)} \cot\left(x_1 \frac{a-d}{a}\right) \tan\left(x_2 \frac{d}{2}\right)}$$

$$x_1 \cot\left(x_1 \frac{a-d}{2}\right) = x_2 \tan\left(x_2 \frac{d}{2}\right).$$

C. Reference [2]

Note the missing of a minus sign in equation (9a).

REFERENCES

[1] G. N. Tsandoulas, D. H. Temme, and F. G. Willwerth, "Longitudinal section mode analysis of dielectrically loaded rectangular waveguides with application to phase shifter design," *IEEE Trans. Microwave Theory Tech.*, vol. MTT-18, pp. 88–95, Feb. 1970.

[2] R. E. Collin, *Field Theory of Guided Waves*. New York: McGraw-Hill, 1960, pp. 224–229, and p. 190.

[3] S. K. Chatterjee and R. Chatterjee, "Dielectric loaded waveguides—A review of theoretical solutions," *Radio Electron. Eng.*, vol. 30, pp. 145–160, Sept. 1965; and pp. 195–205, Oct. 1965.

Computer Program Descriptions

Eigenmodes for Straight Circular Cylinder Microwave Resonators Containing a Coaxial Dielectric Sample

PURPOSE: This program gives, from an exact analytic theory, either a characteristic parameter of the sample or resonance frequency for all eigenmodes which may exist in the loaded cavity.

LANGUAGE: Fortran IV. Program deck length 101 cards.

AUTHORS: J. C. Joly and A. Poinsot, Microwave Laboratory, University of Dijon, Dijon, France.

SPONSOR: Prof. J. Bouchard, Faculté des Sciences, Laboratoire de Radioélectricité, 6 Boulevard Gabriel, 21 Dijon, France.

AVAILABILITY: ASIS–NAPS Document No. NAPS–01759. Subprograms used for calculation of Bessel's functions come from IBM 1130 scientific subroutine package. Detailed explanations of the method used for calculation and of the program structure are joined with the listing.

DESCRIPTION: Perturbation of a circular microwave resonator by a dielectric sample of the same symmetry (see Fig. deposited with NAPS) is often used to measure the relative permitivity of the material under test. When the frequency shift becomes important, the theory of local perturbation is no longer valid and an exact analytic theory must be used for calculation. In the theory, ϵ appears as the root of a transcendental equation whose numerical solving must be done by means of a computer. This program deals with all eigenmodes which may exist in the loaded cavity, and it can be used for three kinds of calculation: 1) calculation of ϵ from a frequency measurement; 2) calculation of eigenmode frequencies; 3) calculation of the diameter which a sample of a given material must have to obtain a determined frequency of resonance for the loaded cavity. Program size has been reduced as much as possible and permits loading onto small laboratory computers. For example, using a Digital PDP 15/8 computer, our compiled program requires a 2420/8 word storage (5521/8 with BESJ and BESY subroutines).

Manuscript received October 4, 1971; revised January 17, 1972.
For program listing, order NAPS-01759 from ASIS National Auxiliary Publications Service, c/o CCM Information Corporation, 909 Third Avenue, New York, N. Y. 10022; remitting $2.00 per microfiche or $5.00 per photocopy.