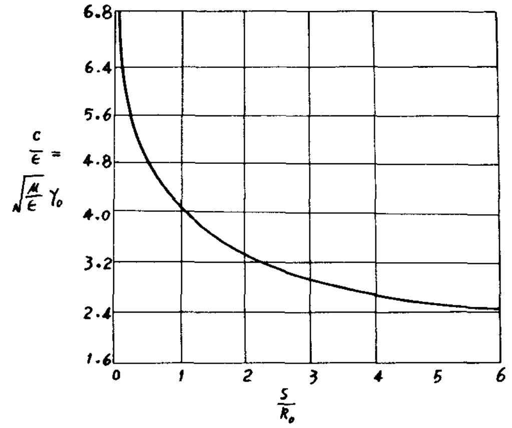

Fig. 3.

We finally have (8) and the following equation:

$$\frac{s}{R_0}=\frac{\pi}{2K'\left\{\sqrt{1-\frac{E'}{K'}}\sqrt{1+k^2}\frac{K'}{E'}-z(v,k')\right\}} \tag{9}$$

to solve for k and v simultaneously to substitute the former into (6) to find C. Conversely, given k, we can calculate C from (6) and the ratio of slit width $2s$ to the diameter $2R_0$ by (8) and (9) of Fig. 1. The curve in Fig. 3 is constructed from [1].

This new transmission line of Fig. 1 is of reduced height, which is equal to the diameter of its upper circular conductor, and intuitively this new line will have lower loss than the conventional two-wire line because its large plane conductor will offer low ohmic, as well as radiation, loss. In addition, it can be used to detect and to measure the width of the slit of a flat conducting plate, because when $2R_0$ is known, the width $2s$ of the slit can be calculated from the measured value of C, from the curve of Fig. 3 or from (6).

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Letters

Correction to "Optical Fiber Delay-Line Signal Processing"

Due to a clerical error, the above paper[1] by K. P. Jackson, S. A. Newton, B. Maslehi, M. Tur, C. C. Cutler, J. W. Goodman and H. J. Shaw appeared in the March 1985 issue (pp. 193–210) without being identified as an *Invited Paper*.

K. P. Jackson, B. Moslehi, C. C. Cutler, J. W. Goodman, and H. J. Shaw are with Stanford University, Stanford, CA 94305
S. A. Newton is with Hewlett-Packard Laboratories, Palo Alto, CA 94304
M. Tur is with the School of Engineering, Tel Aviv University, Tel Aviv, Israel.

[1] K. P. Jackson *et al.*, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-33, pp. 193–210, Mar. 1985.

Comments on "Scattering at a Junction of Two Waveguides with Different Surface Impedances"

V. DANIELE, I. MONTROSSET, AND R. ZICH

In the above paper,[1] a criterion has been given in order to establish if the scattering problem of the junction between two waveguides with different surface impedances can be solved in closed form. In this comment, a different approach, based on a spectral formulation, shows that the possibility to obtain analytical expressions of the scattering coefficients depends on the form of the relevant Wiener–Hopf equation.

The above paper[1] presents some results on the problem of the scattering at the junction of two waveguides having different surface impedances. From a theoretical point of view, the most important concerns the possibility to obtain analytical expressions of the scattering coefficients when certain conditions on the geometries of the waveguides are satisfied. The procedure used in [1] has some limitations; more general results can be obtained by following a different approach based on the Wiener–Hopf formulation of the problem. Let us consider [1, fig. 1] and indicate with a and a' the waveguides at the left and the right side, respectively, of the junction. A spectral formulation of the problem leads to a Wiener–Hopf equation having the form

$$G(\alpha)F_+(\alpha)=F_-(\alpha)+F_0(\alpha) \tag{1}$$

where $G(\alpha)$ and $F_0(\alpha)$ are known, and the unknowns $F_+(\alpha)$ and $F_-(\alpha)$ are the Fourier transforms of suitable components of the electromagnetic fields in the guide a' and a, respectively. In all

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The authors are with CESPA (CNR) and Dipartimento di Elettronica, Politecnico di Torino, C.so Duca Abruzzi 24, 10129 Torino, Italy.
[1] C. Dragone, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-32, pp. 1319–1328, Oct. 1984.

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