

whose values are given by the same set of equations (29)-(31). Of course, the actual numerical values to be set for the quantities  $r_1$ ,  $r_2$ ,  $\theta_1$ , and  $\theta_2$  would depend on the roots of the modal equations for the parallel-plate case.

### V. CONCLUSION

The Wiener-Hopf technique has been used to determine the scattering properties of a wall reactance discontinuity in a coaxial waveguide. The results obtained are identical in form with those already reported for the parallel-plate geometry [5]. A T equivalent circuit applicable to both coaxial and parallel-plate wall reactance discontinuities is derived. A useful result of the investigation is that the conventional TEM mode in a coaxial waveguide with conducting walls can be used to excite the hybrid TEM surface wave of Barlow, and the fraction of incident power which goes into the surface wave is evaluated.

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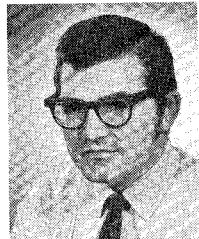
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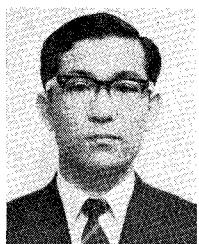
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