Abstracts

The Numerical Solution of Some Important Transmission-Line Problems

H.E. Green. "The Numerical Solution of Some Important Transmission-Line Problems." 1965 Transactions on Microwave Theory and Techniques 13.5 (Sep. 1965 [T-MTT]): 676-692.

The generalized numerical solution of Laplace's equation in two dimensions is dealt with, subject to boundary conditions imposed by conducting surfaces and dielectrics which are permitted a limited amount of inhomogeneity. It is shown how this solution may be applied in the determination of the properties of TEM-mode transmission lines including the equivalent circuits of simple obstacles in these lines. The theory is illustrated with a number of examples, certain of which do not appear to have been previously treated theoretically in the literature. While certain of the examples serve mainly to show the power of the technique, others are given very detailed treatment with the production of much new design data.

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