Abstracts

Computer-Aided Analysis of Arbitrarily Shaped Coaxial Discontinuities

W.K. Gwarek. "Computer-Aided Analysis of Arbitrarily Shaped Coaxial Discontinuities." 1988 Transactions on Microwave Theory and Techniques 36.2 (Feb. 1988 [T-MTT] (Special Issue on Computer-Aided Design)): 337-342.

This paper proposes a method of analyzing a coaxial discontinuity arbitrarily shaped in two dimensions (radial and longitudinal) but maintaining its axial symmetry. It is shown that under such assumptions the equations to be solved correspond to the equations describing an equivalent planar circuit filled with anonuniform medium. These equations are solved by a version of the finite-difference time-domain method. The method produces a universal computer algorithm capable of solving a wide range of practical problems with no analytical preprocessing. The examples presented show that the method can be effectively used in engineering applications.

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