

Determination of the Resonant Frequencies in a Complex Cavity Using the Scattering Matrix Formulation

J.M. Neilson, P.E. Latham, M. Caplan and W.G. Lawson. "Determination of the Resonant Frequencies in a Complex Cavity Using the Scattering Matrix Formulation." 1989 Transactions on Microwave Theory and Techniques 37.8 (Aug. 1989 [T-MTT]): 1165-1170.

A method for computing the resonant frequency in a complex cavity consisting of a series of waveguide sections is derived. The analysis uses the scattering matrix formulation to produce an eigenvalue equation which must be solved numerically. The technique is easily implemented numerically and shows good agreement with experiment.

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