Abstracts

The Matrix Formulation of Scattering Problems

J. Van Bladel. "The Matrix Formulation of Scattering Problems." 1966 Transactions on Microwave Theory and Techniques 14.3 (Mar. 1966 [T-MTT]): 130-135.

Two regions in space are coupled through an opening in a perfectly conducting surface. By using a complete set of eigenvectors in the opening, each region can be represented by an equivalent Norton circuit involving a short-circuit current (a vector) and a generator admittance (a matrix). The particular case of a cavity at resonance is investigated. Application to a cavity terminated in a waveguide is considered, and the transformation of the equivalent circuit resulting from the shift of the terminal plane is analyzed. After solving the example of a slotted waveguide, a possible set of eigenvectors for an arbitrary opening is proposed.

❑ Return to main document.