

Abstracts

A New Schema for Combining Numerical and Analytical Methods for Rigorous Analysis of Waveguide Circuits

K.-L. Wu, C. Wu and J. Litva. "A New Schema for Combining Numerical and Analytical Methods for Rigorous Analysis of Waveguide Circuits." 1993 MTT-S International Microwave Symposium Digest 93.2 (1993 Vol. II [MWSYM]): 975-978.

A new schema is proposed for rigorous analysis of waveguide circuits which are composed of a number of discontinuities. The schema combines numerical techniques with analytical techniques, such as the mode-matching method. The concept is the following; for a general complicated segment of waveguide circuit, a numerical technique is used to generate the multi-mode general scattering matrix, while the mode-matching technique is used to deal with all the regular discontinuities. The final result is obtained by cascading the general scattering matrices. To validate the schema, a numerical example is given. The result obtained with the new schema agrees very well with results obtained using full numerical techniques and experiment results.

[Return to main document.](#)