Abstracts

Efficient MOM-based generalized scattering matrix method for the integrated circuit and multilayered structures in waveguide

A.I. Khalil, A.B. Yakovlev and M.B. Steer. "Efficient MOM-based generalized scattering matrix method for the integrated circuit and multilayered structures in waveguide." 1999 MTT-S International Microwave Symposium Digest 99.4 (1999 Vol. IV [MWSYM]): 1707-1710 vol.4.

The generalized scattering matrix (GSM) approach is proposed to analyze transverse multilayered structures with circuit ports in a metal waveguide. The Kummer transformation is applied to accelerate slowly converging double series expansions of Green's functions that occur in evaluating the impedance matrix elements. In this transformation the quasi-static part is extracted and evaluated to speed up the solution process resulting in a dramatic reduction of terms in a double series summation. The formulation incorporates electrical ports as an integral part of the GSM formulation and so that the resulting model can be integrated with circuit analysis.

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