Abstracts

A Fast Integral Equation Technique for Shielded Planar Circuits Defined on Nonuniform Meshes (Short Papers)

G.V. Eleftheriades, J.R. Mosig and M. Guglielmi. "A Fast Integral Equation Technique for Shielded Planar Circuits Defined on Nonuniform Meshes (Short Papers)." 1996 Transactions on Microwave Theory and Techniques 44.12 (Dec. 1996, Part I [T-MTT]): 2293-2296.

In this contribution, the groundwork is laid out for the realization of efficient integral-equation/moment-method techniques, with arbitrary types of basis functions, for the computer-aided design (CAD) of geometrically complex packaged microwave and millimeter-wave integrated circuits (MMIC's). The proposed methodology is based on an accelerated evaluation of the Green's functions in a shielded rectangular cavity. Since the acceleration procedure is introduced at the Green's function level, it becomes possible to construct efficient shielded moment method techniques with arbitrary types of basis-functions. As an example, a Method of Moments (MoM) is implemented based on the mixed potential integral equation formulation with a rectangular, but nonuniform and nonfixed, mesh. The entire procedure can be extended to multilayer substrates.

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