Abstracts

A New Method of Modeling Three-Dimensional MIC/MMIC Circuits: The Space-Spectral Domain Approach

K. Wu and R. Vahldieck. "A New Method of Modeling Three-Dimensional MIC/MMIC Circuits: The Space-Spectral Domain Approach." 1990 Transactions on Microwave Theory and Techniques 38.9 (Sep. 1990 [T-MTT] (Special Issue on Multifunction MMIC's and their System Applications)): 1309-1318.

A new space-spectral domain analysis has been developed to characterize arbitrarily shaped, spatial three-dimensional (3-D) discontinuities in MIC/MMIC circuits. The method is very general and combines the advantages of the spectral-domain analysis (SDA) with that of the one-dimensional method of lines (MOL). The new approach is numerically very efficient and can be applied to planar transmission lines on insulating as well as semiconducting substrates with and without open boundaries. Several resonator structures are analyzed to demonstrate the usefulness of this new method.

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