Abstracts

Analysis of MMIC Structures Using an Efficient Iterative Approach

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In this paper a class of two- and three-dimensional monolithic microwave integrated circuit (MMIC) structures is theoretically analyzed using an efficient iterative technique. The transfer-matrix approach to constructing the spectral Green's functions of multilayered structures is adopted. Discretization of the continuous functions and exploitation of the periodicity of the MMIC structures enclosed by side walls lead to a discrete convolution operation, which can be carried out numerically efficiently using the FFT algorithm. The spectral Green's functions are modified for both the periodic and aperiodic structures to improve the numerical efficiency of the iterative algorithm. Numerical results are presented and compared with available data.

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