# Abstracts

## Full Wave Analysis of Microstrip Floating Line Structures by Wavelet Expansion Method

*G. Wang and G.-W. Pan. "Full Wave Analysis of Microstrip Floating Line Structures by Wavelet Expansion Method." 1995 Transactions on Microwave Theory and Techniques 43.1 (Jan. 1995 [T-MTT]): 131-142.*

A full wave analysis of microstrip floating line structures by wavelet expansion method is presented. The surface iutegral equation developed from a dyadic Green's function is solved by Galerkin's method, with the integral kernel and the unknown current expanded in terms of orthogonal wavelets. Using the orthonormal wavelets (and scaling functions) with compact support as basis functions and weighting functions, the integral equation is converted into a set of linear algebraic equations, with the matrices nearly diagonal or block-diagonal due to the localization, orthogonality, and cancellation properties of the orthogonal wavelets. Limitations inherited in the traditional orthogonal basis systems are released: The problem-dependent normal modes have been replaced by the problem-independent wavelets, preserving the orthogonality; the trade-off between orthogonality and continuity (e.g. subsectional basis functions including pulse functions, roof-top functions, piecewise sinusoidal functions, etc.) is well balanced by the orthogonal wavelets. Numerical results are compared with measurements and previous published data with good agreement.

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