# Abstracts

## Wavelet-based CAD modeling of microstrip discontinuities using least square Prony's method

*K.F. Sabett, L.P.B. Katehi and K. Sarabandi. "Wavelet-based CAD modeling of microstrip discontinuities using least square Prony's method." 1997 MTT-S International Microwave Symposium Digest 3. (1997 Vol. III [MWSYM]): 1799-1802.*

This paper presents a sparse-based moment method (MoM) approach for the full-wave modeling of microstrip planar structures. Rooftop multiresolution expansions, introduced as the natural extension of the conventional rooftop basis functions, are incorporated into the integral equation formulation to achieve highly sparse linear systems. The application of the fast wavelet transform (FWT) makes it possible to easily "sparsify" the existing rooftop-based CAD programs. The scattering parameters of the network under study are determined using a least square Prony's method, which extracts the characteristics of the dominant-mode incident and reflected traveling waves on the port feed lines. Numerical results are presented for various examples of microstrip discontinuities.

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