Abstracts

An Automatic Decomposition Approach to Optimization of Large Microwave Systems

J.W. Bandler and Q.-J. Zhang. "An Automatic Decomposition Approach to Optimization of Large Microwave Systems." 1987 Transactions on Microwave Theory and Techniques 35.12 (Dec. 1987 [T-MTT] (1987 Symposium Issue)): 1231-1239.

We present a novel and general technique applicable to the optimization of large microwave systems. Using sensitivity information obtained from a suitable Monte Carlo analysis, we extract possible decomposition properties which could otherwise he deduced only through a detailed physical and topological investigation. The overall problem is automatically separated into a sequence of subproblems, each being characterized by the optimization of a subset of circuit functions w.r.t. variables which are sensitive to the selected responses. A heuristic algorithm for automatic decomposition is developed. The decomposition patterns are dynamically updated until a satisfactory solution is reached. The partitioning approach proposed by Kondoh for FET modeling problems is verified. The technique was successfully tested on Iarge-scale optimization of microwave multiplexer involving 16 channels, 399 nonlinear functions, and 240 variables.

❑ Return to main document.