Abstracts

Yield-Driven Electromagnetic Optimization via Multilevel Multidimensional Models

J.W. Bandler, R.M. Biernacki, S.H. Chen, P.A. Grobelny and S. Ye. "Yield-Driven Electromagnetic Optimization via Multilevel Multidimensional Models." 1993 Transactions on Microwave Theory and Techniques 41.11 (Dec. 1993 [T-MTT] (1993 Symposium Issue)): 2269-2278.

We present the foundation of a sophisticated hierarchical multidimensional response surface modeling system for efficient yield-driven design. Our scheme dynamically integrates models and database updating in real optimization time. The method facilitates a seamless, smart optimization-ready interface. It has been specially designed to handle circuits containing complex subcircuits or components whose simulation requires significant computational effort. This approach makes it possible, for the first time, to perform direct gradient-based yield optimization of circuits with components or subcircuits simulated by an electromagnetic simulator. The efficiency and accuracy of our technique are demonstrated by yield optimization of a three-stage microstrip transformer and a small-signal microwave amplifier. We also perform yield sensitivity analysis for the three-stage microstrip transformer.

❑ Return to main document.