Abstracts

Efficient sensitivity analysis of transmission-line networks using model-reduction techniques

R. Khazaka, P.K. Gunupudi and M.S. Nakhla. "Efficient sensitivity analysis of transmission-line networks using model-reduction techniques." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2345-2351.

An efficient algorithm, based on congruent transformation and model reduction, is proposed for evaluation of frequency- and time-domain sensitivity of large linear networks containing lossy coupled transmission lines. The sensitivity of the voltage and current waveforms can be calculated with respect to lumped components and parameters of transmission lines. The algorithm is based on projecting the adjoint network equations on a reduced-order subspace that preserves the circuit moments. The proposed algorithm provides a significant decrease in the computational expense for sensitivity analysis.

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