Abstracts

New Algorithms for Network Optimization (Dec. 1973 [T-MTT])

C. Charalambous and J.W. Bandler. "New Algorithms for Network Optimization (Dec. 1973 [T-MTT])." 1973 Transactions on Microwave Theory and Techniques 21.12 (Dec. 1973 [T-MTT] (1973 Symposium Issue)): 815-818.

Two new alogrithms suitable for computer-aided optimization of networks are presented. They are both based on the nonlinear least rho th approximation approach, which has been successfully applied by the authors to microwave network design problems requiring minimax or near-minimax solutions. A basic difference here is that, instead of requiring very large values of rho, any finite value of rho, greater than 1 can be used to produce extremely accurate minimax solutions. This paper discusses a six-variable transformer example where values of rho equal to 2, 4, 6, 10, 100, 1000, and 10 000 have all been used separately to obtain substantially the same solution. Both the adjoint network method for gradient evaluation and the Fletcher method are employed for greater efficiency. Comparisons with the razor search and grazer search methods are made. Some far-reaching observations concerning minimax design are also made.

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