Abstracts

Minimax Optimization of Networks by Grazor Search

J.W. Bandler, T.V. Srinivasan and C. Charalambous. "Minimax Optimization of Networks by Grazor Search." 1972 Transactions on Microwave Theory and Techniques 20.9 (Sep. 1972 [T-MTT]): 596-604.

A new optimization method called grazor search has been developed. This method is suitable for nonlinear minimax optimization of network and system responses. A linear programming problem using gradient information of one or more highest ripples in the response error function to produce a downhill direction followed by a linear search to find a minimum in that direction is central to the algorithm. Unlike the razor search method due to Bandler and Macdonald, the present method overcomes the problem of discontinuous derivatives characteristic of minimax objectives without using random moves. It can fully exploit the advantages of the adjoint network method of evaluating partial derivatives of the response function with respect to the variable parameters. Sufficient details are given to enable the grazor search method to be readily programmed and used. Although the method is intended for the computer-aided solution of an extremely wide range of design problems, it is largely compared with other methods on microwave network design problems, for which the solutions are known. Its reliability and efficiency on more arbitrary problems, examples of which are also included, is thereby established.

❑ Return to main document.