Abstracts

An Efficient Algorithm for Finding Zeros of a Real Function of Two Variables (Short Papers)

M. Mrozowski. "An Efficient Algorithm for Finding Zeros of a Real Function of Two Variables (Short Papers)." 1988 Transactions on Microwave Theory and Techniques 36.3 (Mar. 1988 [T-MTT]): 601-604.

A new fast algorithm is described for finding the roots of a real function of two variables. The procedure searches the interval in which a function changes sign and then automatically locks to a curve f(lambda, p)=0, following it inside a given rectangular region. The method ensures that at each step a new pair of points with different function signs is generated, and in effect it minimizes the number of function evaluations. Complementary algorithms opening up opportunities for the further automation of the search process are also presented in outline. An example of the application of the new procedure is included. The proposed algorithm is particularly suitable for solving the electromagnetic problems leading to transcendent equations.

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