Abstracts

A Fullwave CAD Tool for Waveguide Components Using a High Speed Direct Optimizer

F. Alessandri, M. Diomgi and R. Sorrentino. "A Fullwave CAD Tool for Waveguide Components Using a High Speed Direct Optimizer." 1995 Transactions on Microwave Theory and Techniques 43.9 (Sep. 1995, Part I [T-MTT]): 2046-2052.

An extremely efficient optimization tool, where the fullwave mode matching simulator is driven by a quasi-Newton optimizer using the adjoint network method, has been developed for the CAD of a class of rectangular waveguide components. This includes filters, phase shifters, branch guide couplers, etc., with step in either the E- or H-plane. With respect to the conventional finite difference computation of the derivatives, a speedup factor of more than 10 times is easily achieved.

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