Abstracts

Rigorous and efficient fabrication-oriented CAD and optimization of complex waveguide networks (1997 Vol. II [MWSYM])

F. Alessandri, M. Dionigi, R. Sorrentino and L. Tarricone. "Rigorous and efficient fabrication-oriented CAD and optimization of complex waveguide networks (1997 Vol. II [MWSYM])." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 1013-1016.

A sophisticated CAD and optimization tool of complex microwave networks, incorporating fabrication and realizability constraints has been developed. Rigorous full wave models based on the mode matching technique are adopted along with specific algorithms to speed up both the analysis and optimization of the entire microwave structure. A beam-forming Butler matrix in waveguide technology characterized by 238 geometrical parameters has been designed and globally optimized. The full wave analysis required less than 1 second per frequency point, while the entire optimization was performed in less than one hour, using an IBM RS6000 250T.

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