# Abstracts

## Methods of using commercial electromagnetic simulators for microwave and millimeter-wave circuit design and optimization

*N. Jain and P. Onno. "Methods of using commercial electromagnetic simulators for microwave and millimeter-wave circuit design and optimization." 1997 Transactions on Microwave Theory and Techniques 45.5 (May 1997, Part II [T-MTT]): 724-746.*

Efficient utilization of commercial electromagnetic (EM) simulators for design and optimization of microwave (MW) and millimeter-wave (MMW) circuits is achieved by classifying design problems into three categories-characterization of circuit elements, optimization of circuit elements, and creation of circuit element libraries such as scalable libraries. Practical aspects of the methods are illustrated by several examples. An equivalent circuit extraction technique suitable for n-port coupled structures is provided. The derived equivalent circuit is useful for extrapolating data, optimization, and deriving scalable models.

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