Abstracts

Global modeling of spatially distributed microwave and millimeter-wave systems

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Microwave and millimeter-wave systems have generally been developed from a circuit perspective with the effect of the electromagnetic (EM) environment modeled using lumped elements or N-port scattering parameters. The recent development of the local reference node concept coupled with steady-state and transient analyses using state variables allows the incorporation of unrestrained EM modeling of microwave structures in a circuit simulator. A strategy implementing global modeling of electrically large microwave systems using the circuit abstraction is presented. This is applied to the modeling of a quasi-optical power-combining amplifier.

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