Abstracts

A time-domain full-wave extraction method of frequency-dependent equivalent circuit parameters of multiconductor interconnection lines

Jin Zhao and Zheng-Fan Li. "A time-domain full-wave extraction method of frequency-dependent equivalent circuit parameters of multiconductor interconnection lines." 1997 Transactions on Microwave Theory and Techniques 45.1 (Jan. 1997 [T-MTT]): 23-31.

A time-domain full-wave method for the extraction of frequency-dependent equivalent circuit parameters of multiconductor interconnection lines is presented in this paper. The circuit parameters extracted by this method can be inserted into circuit simulation software to investigate time-domain responses of a high-speed IC system with multiconductor interconnects. Because the definitions of the voltage and the current are not unique in full-wave analysis, transformation among circuit parameters according to different definitions of the voltage and current is also presented. The method is based on the finite-difference time-domain (FDTD) method, and the reliability of this method is illustrated by its application to representative problems.

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