Abstracts

Distributed Equivalent Sources for the Analysis of Multiconductor Transmission Lines Excited by an Electromagnetic Field (Short Papers)

A.C. Cangellaris. "Distributed Equivalent Sources for the Analysis of Multiconductor Transmission Lines Excited by an Electromagnetic Field (Short Papers)." 1988 Transactions on Microwave Theory and Techniques 36.10 (Oct. 1988 [T-MTT]): 1445-1448.

The interaction of multiconductor lines with electromagnetic radiation is commonly studied in terms of field-induced voltage and current sources distributed along the line. This paper presents the relationships between these sources and the incident fields for the general case of a transmission line with its conductors embedded in different dielectric volumes of arbitrary shape. It is shown that the sources can be expressed directly in terms of the incident fields and some vector parameters which are determined from the solution of a series of electrostatic problems with appropriate boundary conditions independent of the incident electric fields.

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