Abstracts

Accurate Calculation of the Capacitance Matrix of a Multiconductor Transmissionline in a Multilayered Dielectric Medium

W. Delbare and D. De Zutter. "Accurate Calculation of the Capacitance Matrix of a Multiconductor Transmissionline in a Multilayered Dielectric Medium." 1989 MTT-S International Microwave Symposium Digest 89.3 (1989 Vol. III [MWSYM]): 1013-1016.

An integral equation method for the calculation of capacitance and inductance matrices is presented. The method is suited for multiconductor transmission lines embedded in a multilayered dielectric medium on top of a ground plane. Conductors of arbitrary polygonal cross-section can be handled, as well as infinitely thin conductors. The method is new in two respects. The kernel of the integral equation is the space domain Green's function of the layered medium. The accuracy of the solution is improved by using basis functions which exactly model the singular behaviour of the charge density in the neighborhood of a conductor edge. Numerical examples show the accuracy of the calculations and the complexity of the configurations that can be treated.

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