Abstracts

Multiconductor Transmission Lines In Multilayered Dielectric Media

C. Wei, R.F. Harrington, J.R. Mautz and T.K. Sarkar. "Multiconductor Transmission Lines In Multilayered Dielectric Media." 1984 Transactions on Microwave Theory and Techniques 32.4 (Apr. 1984 [T-MTT]): 439-450.

A method for computing the capacitance matrix and inductance matrix for a multiconductor transmission line in a multilayered dielectric region is presented. The number of conductors and the number of dielectric layers are arbitrary. Some of the conductors may be of finite cross section and others may be infinitesimally thin. The conductors are either above a single ground plane or between two parallel ground planes. The formulation is obtained by rising a free-space Green's function in conjunction with total charge on the conductor-to-dielectric interfaces and polarization charge on the dielectric-to-dielectric interfaces. The solution is effected by the method of moments using pulses for expansion and point matching for testing. Computed results are given for some cases where all conducting lines are of finite cross section and other cases where they are infinitesimally thin.

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