Abstracts

A Configuration-Oriented Spice Model for Multiconductor Transmission Lines with Homogeneous Dielectrics

K.D. Marx and R.I. Eastin. "A Configuration-Oriented Spice Model for Multiconductor Transmission Lines with Homogeneous Dielectrics." 1990 Transactions on Microwave Theory and Techniques 38.8 (Aug. 1990 [T-MTT]): 1123-1129.

The use of the SPICE circuit analysis computer program to simulate a lossless multiconductor transmission line is investigated. It is demonstrated that for the case of a homogeneous dielectric, the multiconductor line can be represented by a system of standard two-wire lines which is not based on modal decomposition. This system is readily modeled with SPICE. While restricted to situations where the dielectric constant can be assumed uniform, the present method has the advantage of an intuitive relationship to the conductor configuration, simpler SPICE input data requirements an improvement in computer run time over other methods.

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