Abstracts

Full-Wave Analysis of Coupled Perfectly Conducting Wires in a Multilayered Medium

N. Fache, F. Olyslager and D. De Zutter. "Full-Wave Analysis of Coupled Perfectly Conducting Wires in a Multilayered Medium." 1991 Transactions on Microwave Theory and Techniques 39.4 (Apr. 1991 [T-MTT]): 673-681.

This paper presents a full-wave analysis of coupled perfectly conducting cylindrical wires in a multilayered dielectric medium. The analysis is based on a Fourier series expansion of the unknown surface currents on each wire and on an integral equation for the longitudinal field on the wires. The calculations are not restricted to the propagation constants of the different modes, but explicit results are presented for the impedances associated with each wire and each eigenmode and this as a function of frequency. Propagation constants, longitudinal currents on the wires and impedances lead to a complete circuit equivalent for the structures being considered.

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