# Abstracts

## Analysis of Finite Conductivity Cylindrical Conductors Excited by Axially-Independent TM Electromagnetic Field

*A.R. Djordjevic, T.K. Sarkar and S.M. Rao. "Analysis of Finite Conductivity Cylindrical Conductors Excited by Axially-Independent TM Electromagnetic Field." 1985 Transactions on Microwave Theory and Techniques 33.10 (Oct. 1985 [T-MTT] (Special Issue on Numerical Methods)): 960-966.*

A method is presented for the analysis of a system of cylindrical conductors, of large but finite conductivity, situated in a uniform dielectric and excited by an axially-independent TM electromagnetic field. The analysis is based on separating the space into the region exterior to the conductors and regions interior to the conductors, placing equivalent electric and magnetic currents on the boundary surfaces, applying the boundary conditions for the tangential fields and, hence, obtaining a system of coupled integral equations. Due to the special geometry and the chosen excitation, the problem treated is a two-dimensional one. The distribution of the unknowm surface currents is approximated by pulses, and the amplitudes of these pulses are determined by a point-matching technique. This method is applied to the problem of determining the inductance and resistance of two-wire transmission lines.

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