Abstracts

A new class of eigenfunction expansion methods for fast frequency-domain analysis of waveguides

P. Przybyszewski, J. Mielewski and M. Mrozowski. "A new class of eigenfunction expansion methods for fast frequency-domain analysis of waveguides." 2002 Transactions on Microwave Theory and Techniques 50.2 (Feb. 2002 [T-MTT]): 558-563.

This paper presents a new class of algorithms for a fast calculation of dispersion characteristics in inhomogeneously loaded strictly bidirectional waveguides. The algorithms use the method of moments to convert the wave equation to a matrix eigenvalue problem using, as a basis, a set of known solutions determined for a few selected points from the /spl omega/-/spl beta/ diagram. Depending on the choice of points for the basis and the testing functions, several algorithms are derived, each leading to extremely simple expressions for the calculation of the matrix elements.

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