Abstracts

Comparison Between Two Sets of Basis Functions for the Current Modeling in the Galerkin Spectral Domain Solution for Microstrips

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A frequently used technique for the numerical full wave analysis of planar microwave passive structures is the method of moments (MoM). A very important determinant for the accuracy and efficiency of this technique is the choice of the basis functions used in the approximation of the unknown current components. The application of several types of entire and subsectional domain basis functions has been proposed in the literature. However, little comparison has been made between different types of basis functions. In this paper, a comparison is presented between two sets of frequently used subsectional domain basis functions for the canonical case of the microstrip transmission line. The emphasis in this paper is on the relative accuracy, the convergence and the computational efficiency of both sets of basis functions. The intent of the paper is primarily to be an eye opener for the implications of the choice of the basis functions.

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