Abstracts

A Numerically Efficient Technique for the Method of Moments Solution for Planar Periodic Structures in Layered Media

A numerically efficient technique for the calculation of the method of moments (MoM) impedance matrix is presented for planar periodic structures rendered in arbitrary triangular discretizations and embedded in layer media. The technique is based on the MoM applied to a mixed potential integral equation (MPIE) in conjunction with triangular-domain basis functions. Rapid convergence of the matrix elements is achieved with a hybrid spectral/spatial decomposition of Green's functions. Transformations of the spectral to spatial Green's functions for layered media are performed by using complex images. Examples demonstrating the numerical efficiency and accuracy of the method are given.

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