Abstracts

An optimized anisotropic PML for the analysis of microwave circuits

A.C. Polycarpou and C.A. Balanis. "An optimized anisotropic PML for the analysis of microwave circuits." 1998 Microwave and Guided Wave Letters 8.1 (Jan. 1998 [MGWL]): 30-32.

The anisotropic perfectly matched layer (PML) is implemented in the finite-element method (FEM) to evaluate the S-parameters of microwave integrated circuits (MIC's). The PML region, which terminates the mesh over a range of frequencies, may exhibit either a uniform or nonuniform conductivity profile /spl sigma/(/spl rho/). The performance of the PML is strongly dependent on the choice of /spl sigma/(/spl rho/) as well as the mesh density inside the absorber. This observation is demonstrated numerically using a two-dimensional (2-D) finite-element analysis. The anisotropic PML is subsequently used in modeling three-dimensional (3-D) microwave integrated circuits. The accuracy and overall performance of the absorber is evaluated by computing the S-parameters of a low-pass filter.

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