Abstracts

Modal PML

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Hybrid numerical techniques in time domain offer computationally efficient means of analysis of certain classes of microwave structures. One of the recently proposed techniques combines the finite-difference time-domain (FDTD) method with the eigenfunction expansion. This method has proven to be very efficient in the analysis of properties of complex planar transmission lines and waveguide discontinuity problems. To achieve full functionality, in particular in the context of the discontinuity analysis, this method has to be complemented by a suitable high-performance absorbing boundary condition. In this letter, we examine a modified Berenger's perfectly matched layer (PML). Tests in a waveguide indicate that low reflections can be obtained in a wide frequency range with few layers of the absorbing medium with a properly selected conductivity profile.

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