Abstracts

Correction of Imperfect Absorbing Boundary Conditions in FD-TD

F. Moglie, T. Rozzi, E. Martelli and S. Anmara. "Correction of Imperfect Absorbing Boundary Conditions in FD-TD." 1996 MTT-S International Microwave Symposium Digest 96.2 (1996 Vol. II [MWSYM]): 585-588.

In the Finite Differences in the Time Domain (FD-TD) technique the knowledge of the field is often unnecessary, as that of the scattering parameter suffices. We introduce a very simple method to correct Absorbing Boundary Condition (ABC) errors in the scattering parameter evaluation arising from any ABC, however imperfect: this method allows universal use of any one simple ABC for any transmission media, therefore facilitating the development of general purpose codes. The technique is based on the evaluation of the reflection coefficient due to the absorbing boundary condition in the time-domain and a subsequent correction in the frequency domain. Hence, it is independent of the kind of line and applicable to microstrip, classical waveguide or any other transmission media. The technique can also be applied to any kind of ABC.

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