Abstracts

Absorbing Boundary Conditions Applied to Model Wave Propagation in Microwave Integrated-Circuits

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A general expression of an absorbing boundary condition is presented in this paper to model wave propagation in passive microwave integrated-circuits by the finite-difference time-domain method. Unlike previously developed absorbing boundary conditions which can only absorb propagating waves, this boundary condition can also absorb evanescent waves effectively. The microstrip line is used as an example to demonstrate how to impose this absorbing boundary condition on different outer boundaries of a computation-domain. It is also demonstrated that the numerical stability of this absorbing boundary condition, when it is applied in its high order form, can be maintained by properly selecting its parameters.

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