Abstracts

Ultrawideband Absorbing Boundary Condition for Termination of Waveguiding Structures in FD-TD Simulations

C.E. Reuter, R.M. Joseph, E.T. Thiele, D.S. Katz and A. Taflove. "Ultrawideband Absorbing Boundary Condition for Termination of Waveguiding Structures in FD-TD Simulations." 1994 Microwave and Guided Wave Letters 4.10 (Oct. 1994 [MGWL]): 344-346.

A new method for ultrawideband termination of waveguides in finite-difference time-domain (FD-TD) grids is presented. The Berenger perfectly matched layer (PML) absorbing boundary condition is applied to terminate both perfect electrically conducting (PEC) and dielectric waveguides in two dimensions. Reflections of less than -75 dB are obtained over the entire propagation regime. Evidence is presented that the PML ABC is effective even for the evanescent energy present below cutoff in PEC waveguides and the multimode propagation present in dielectric waveguides.

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