Abstracts

Reflection analysis of FDTD boundary conditions. II. Berenger's PML absorbing layers

D.T. Prescott and N.V. Shuley. "Reflection analysis of FDTD boundary conditions. II. Berenger's PML absorbing layers." 1997 Transactions on Microwave Theory and Techniques 45.8 (Aug. 1997, Part I [T-MTT]): 1171-1178.

For pt. I see ibid., vol. 45, no. 8, Aug. 1997. This paper presents an in-depth analysis of Berenger's perfectly matched layer (PML) boundary truncation technique. The impedance and dispersion relationships for the fields within the PML media are derived to gain a better understanding of the nature of field propagation within such regions. The mechanisms which contribute toward reflection from a PML region are then described. Using this knowledge of the PML absorbing layers, a numerical method is developed, which allows the reflection from such layers to be calculated exactly.

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