Abstracts

PML-FDTD in cylindrical and spherical grids

F.L. Teixeira and W.C. Chew. "PML-FDTD in cylindrical and spherical grids." 1997 Microwave and Guided Wave Letters 7.9 (Sep. 1997 [MGWL]): 285-287.

Perfectly matched layers (PMLs) are derived for cylindrical and spherical finite-difference time-domain (FDTD) grids. The formulation relies on the complex coordinate stretching approach. Two-dimensional (2-D) cylindrical and three-dimensional (3-D) spherical staggered-grid FDTD codes are written based on the time-domain versions of the equations. Numerical simulations validate the formulation by showing very good agreement between the perfectly matched layer-finite-difference time-domain (FDTD) results and the free-space analytic solutions.

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