Abstracts

Unconditionally stable D-H FDTD formulation with anisotropic PML boundary conditions

G. Lazzi. "Unconditionally stable D-H FDTD formulation with anisotropic PML boundary conditions." 2001 Microwave and Wireless Components Letters 11.4 (Apr. 2001 [MWCL]): 149-151.

An unconditionally stable finite difference time domain (FDTD) method based on a D-H formulation and the recently proposed alternating-direction-implicit (ADI) marching scheme is presented. The advantage of the D-H algorithm over the conventional E-H is the possibility to easily implement an unsplit field components formulation of the PML absorbing boundary condition that is independent from the background material used in the FDTD grid. The method allows therefore immersing any dielectric in the PML layers without any special consideration, and is amenable for models truncation often used in biomedical simulations. Furthermore, the proposed scheme can be extended to account for frequency dispersive dielectrics.

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