Abstracts

An unsplit step 3-D PML for use with the FDTD method

D.M. Sullivan. "An unsplit step 3-D PML for use with the FDTD method." 1997 Microwave and Guided Wave Letters 7.7 (Jul. 1997 [MGWL]): 184-186.

An important advance in the use of the finite-difference time-domain (FDTD) method has been the introduction of the perfectly matched layer (PML) to act as the absorbing boundary condition. The initial implementation required the E and H fields to be split. Recent advances have suggested a new unsplit step PML. This paper describes an FDTD implementation of this new unsplit PML in three dimensions, but implements them in the D and H fields. This has the advantage of isolating the PML from the rest of the FDTD computation, but, unlike the split step formulation, requires almost no additional computational resources.

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