Abstracts

An Application of the Perfectly Matched Layer (PML) Concept to the Finite Element Method Frequency Domain Analysis of Scattering Problems

The Perfectly Matched Layer (PML) concept, introduced by Berenger with the aim of synthesizing an absorbing boundary condition (ABC) for the Finite Difference Time Domain (FDTD) method, was recently modified and extended to Finite Element Frequency Domain (FEFD) applications. The modified equations, which neither require the splitting of the field components of interest nor involve negative conductivity parameters, are employed, in this paper, in conjunction with analytic ABC's to obtain a boundary condition (BC) for scattering problems. This BC exhibits an improved performance over a PML medium terminated by a perfect conductor, or an ABC termination alone.

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