Abstracts

Preconditioned generalized minimal residual iterative scheme for perfectly matched layer terminated applications

Y.Y. Botros and J.L. Volakis. "Preconditioned generalized minimal residual iterative scheme for perfectly matched layer terminated applications." 1999 Microwave and Guided Wave Letters 9.2 (Feb. 1999 [MGWL]): 45-47.

The anisotropic and active properties of the perfectly matched layer (PML) absorbers significantly deteriorate the finite-element method (FEM) system condition and as a result, convergence of the iterative solver is substantially affected. To address this issue, we examine the generalized minimal residual (GMRES) solver for solving finite-element systems terminated with PML. A strong approximate inverse preconditioner (AIPC) is coupled with a GMRES solver to speed up convergence and consequently reduce the overall CPU time.

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