Abstracts

A Numerical Study of Vector Absorbing Boundary Conditions for the Finite-Element Solution of Maxwell's Equations

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In three-dimensional vector solutions to Maxwell's equations, boundary conditions of the Bayliss-Turkel kind can be used to absorb outgoing radiation. The boundary conditions were used with curvilinear brick finite elements to analyze spherical test problems for which the exact fields are known. Errors due to incomplete absorption decrease as the outer boundary is moved further away. The second-order boundary condition is appreciably more accurate than the first-order, at the same cost.

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