

Hagstrom, Thomas

Radiation boundary conditions for the numerical simulation of waves. (English)

Zbl 0940.65108

Acta Numerica 8, 47-106 (1999).

The efficient evaluation of accurate radiation boundary conditions for time domain simulations of wave propagation on unbounded spatial domains is considered. More precisely, the theory of exact boundary conditions for constant coefficient time-dependent problems is developed in detail. The theory is used to motivate various approximations and to establish error estimates. Complexity estimates are also derived to compare different accurate treatments. Important problems that remain open are discussed.

For the entire collection see [Zbl 0921.00012].

Reviewer: P.Y.Yalamov (Russe)

MSC:

- 65M70** Spectral, collocation and related methods for initial value and initial-boundary value problems involving PDEs
- 35L05** Wave equation
- 65M12** Stability and convergence of numerical methods for initial value and initial-boundary value problems involving PDEs
- 65M15** Error bounds for initial value and initial-boundary value problems involving PDEs

Cited in **2** Reviews
Cited in **158** Documents

Keywords:

radiation boundary conditions; wave equation; error estimates