Abstracts

Exact implementation of higher order Bayliss-Turkel absorbing boundary operators in finite-element simulation

A simple yet powerful scheme is employed to incorporate Bayliss-Turkel absorbing boundary conditions (ABCs) of any order into the finite-element simulation of open-region radiation problems. Unlike previous attempts to apply higher order ABC's in finite elements, the new implementation is exact. The exact implementation is made possible by incorporating normal derivatives in the ABC formulation through direct algebraic substitution. This scheme is found to offer enhanced accuracy while negligibly affecting the sparsity of the system matrix.

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