POSTER

Time-domain goal-oriented adaptivity of the wave equation

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Abstract

Goal-oriented adaptive algorithms have been widely employed to produce optimal grids in order to solve challenging engineering problems [1, 4, 5]. In this work, we extend the error representation using unconventional dual problems for goal-oriented adaptivity in the context of frequency-domain wave-propagation problems [2, 3] to the case of time-domain problems. To do that, we express the entire problem in weak form in order to formulate the adjoint problem and apply the goal-oriented adaptivity. Some numerical results are provided in 1D which show that the upper bounds of the new error representation are sharper than the classical ones and therefore this new error representation can be used to design more efficient goal-oriented adaptive processes.

Keywords. wave equation, Finite Element Method, goal-oriented adaptivity, error representation

References


