

ADAPTIVE METHODS, HIGHER ORDER APPROXIMATION, AND ERROR CONTROL

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SUMMARY

The mini-symposium is devoted to applications of various kinds of adaptivity (h, p, hp, remeshing, relocation of nodes, and model adaptivity as well) and higher order approximation in techniques of numerical discretization of partial differential equations (PDEs). These techniques include Finite Element, Finite Difference, Boundary Element, Finite Volume and Meshless Methods. Both, discretization and modeling adaptivities are usually related to error estimation techniques, where the approximation and modelling errors are assessed, respectively. Note that the error estimation and the related adaptivity control is the second area of the mini-symposium concern. We wish to invite the papers presenting the newest developments in adaptivity and error estimation in scientific and engineering applications as well as the new theoretical progress in developing these algorithms. Applications in: solid and fluid mechanics, wave propagation, coupled problems, and all other phenomena in applied sciences would be of interest.

Topics:

- i) mesh adaptation (h, p, hp, remeshing, relocation of nodes etc.)
- ii) adaptive hierarchical modeling
- iii) Finite Element, Finite Difference, Boundary Element, and Finite Volume Methods
- iv) Discontinuous Galerkin (DG) and Discontinuous Petrov-Galerkin (DPG) technology
- v) approximation, modeling and other error estimation techniques
- vI) theoretical progress in developing algorithms for hierarchical modeling, error estimation and mesh adaptation
- vIi) convergence studies
- vIii) scientific and engineering applications