

QUALITY ASSESSMENT AND MESH ADAPTIVITY IN COMPUTATIONAL MECHANICS

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ABSTRACT

Numerical simulations intrinsically carry an error associated with the discretization. This error must be quantified and controlled in order to provide numerical solutions of the specified accuracy at the lowest possible computational cost. Different *a posteriori* error estimators techniques (residual- based, dual-based, recovery-based, ...) have been developed, mostly in the Finite Element Analysis context, and some of them have been extended to other numerical analysis techniques (XFEM, GFEM, Meshless methods, Model Order Reduction techniques, ...). Error estimation is also the basis for the tools used to guide the mesh adaptivity processes intended to provide a solution of a prescribed accuracy at the lowest computational cost. This session aims to bring together researchers on the field of error estimation and mesh adaptivity to show their latest advances on these subjects.

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