

MINISYMPOSIUM TITLE

MATHEMATICAL FOUNDATION OF COMPUTATIONAL MECHANICS

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ABSTRACT

The mathematical justification of standard and nonstandard finite element methods and related discretization schemes in computational engineering concerns all applications in fluid and solid mechanics and also covers the adaptive mesh-refining and iterative solve. Particular attention will be on nonconforming and discontinuous Galerkin schemes and the medius analysis which combines arguments from the a priori and a posteriori error analysis. Further trends are guaranteed error control and optimality of adaptive algorithms.