



Mathematics

Higher-Order Finite Element Methods

PAVEL ŠOLÍN, KAREL SEGETH, and IVO DOLEŽEL

“... a timely and balanced introduction to the very active research area of hp-adaptive methods for the solution of partial differential equations.... The detailed overview of element types and quadrature rules provides a valuable reference, while the discussion of suitable data structures and efficient linear solvers provide an excellent introduction to key aspects, often neglected, of this class of methods.... a delightful introduction to these rapidly expanding research areas.”

— Jan S. Hesthaven, Division of Applied Mathematics, Brown University

“... the overall structure of this comprehensive monograph is very transparent and the style of presentation of the material has an expository nature.... There is no doubt that this new monograph on recent topics of finite element theory and applications will be welcomed by the broad community of finite element researchers and lecturers, both by the practitioners and by the numerical functional analysts.”

— Roger Van Keer, Ghent University, Belgium

“...Summing up, the book is well-written, and the overall structure is clear and well-explained. I think that it surely will meet the interest of applied mathematicians, engineers, and practitioners.”

—Alberto Valli, Università Degli Studi Di Trento, Italy

Features

- Offers a clear introduction and a comprehensible, detailed survey of state-of-the-art higher-order finite element methods and their practical implementation
- Provides fast access to concrete, explicit formulae for computer implementation
- Describes a feasible algorithmic treatment of fully automatic *hp*-adaptivity with examples based on original recent results
- Includes a CD-ROM containing tables of integration points and weights for all reference domains up to the order $p = 20$

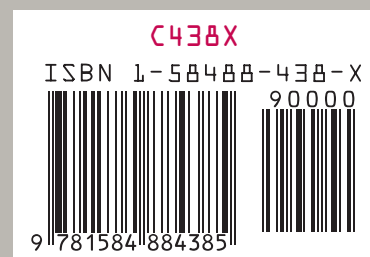
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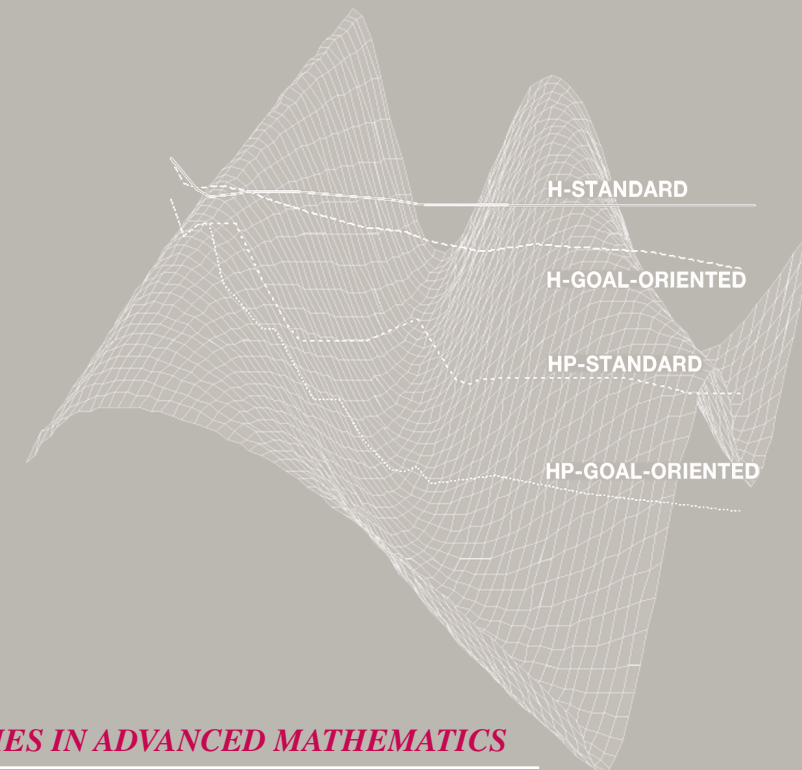


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