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Altri autori (Persone)	JørgensenPalle E. T. <1947->
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Generalized Riemann problems: from the scalar equation to multidimensional fluid dynamics / M. Ben-Arlizi and J. Falcovitz -- Some observations on a multiscale finite element method for problems with variables separated coefficients / S. Jiang and Y-Q. Huang -- A finite element method for the simulation of a liquid droplet impinging on a solid surface / S. Ganesan and L. Tobiska -- Applications of moving mesh methods to the Fourier spectral approximations of phase-field equations / P. Yu, L.Q. Chen and Q. Du -- On the comparison of evolution Galerkin and Discontinuous Galerkin schemes / K. Baumbach and M. Lukacova-Medvidova -- Time-domain finite element methods for Maxwell's equations in dispersive media: a review / J. Li and Y. Chen -- Superconvergence and a posteriori error estimates of nonconforming FEM for boundary control governed by Stokes equations / H. Liu and N. Yan. Optimal superconvergent one step quadratic spline collocation methods for Helmholtz problems / B. Bialecki [and others] -- Some progress on superconvergence for mixed finite element methods / S. Jia, H. Xie and X. Yin -- Convergence of green iterations for Schrodinger equations / M.J. Mohlenkamp and T. Young -- Convolution and Wiener amalgam spaces on the affine group / C. Heil and G. Kutyniok -- An approximation formula in Hilbert space / Z. Zhang and

N. Saito -- The Gibbs phenomenon: a digression in wavelet hybrid sampling series / X.A. Shen -- A unified framework for segmentation-assisted image registration / J. Liu and W. Yang -- Geometric hermite interpolation with pythagorean hodograph cubics / X.-A. Han, Y.-C. Ma and H.-Y. Sun -- Shape gradient for the Stokes flow by differentiability of a saddle point / Z. Gao and Y. Ma -- Numerical simulation of flow over two rotating self-moving circular cylinders / S. Sunghul and N.P. Moshkin.

A note on PPT forms and separability of multipartite states / X.-H. Wang, S.-M. Fei and K. Wu -- A structured data least squares algorithm and its application in digital filtering / H. Guo and R. Renaut -- Short implementation of bisection in Matlab / L. Chen -- An improved iterative regularization based on varying the singular values of the regularization operator / R. Zhang, Y.-C. Ma and X.-B. Duan -- Linear algebra: a happy chance to apply mathematics / G. Strang -- Calculus's accuracy / Q. Lin -- Teaching of mathematics at various levels in an international university-system, and connections to research and to current trends in technology / P. Jørgensen.

Sommario/riassunto

This book presents state-of-the-art lectures delivered by international academic and industrial experts in the field of computational science and its education, covering a wide spectrum from theory to practice. Topics include new developments in finite element method (FEM), finite volume method and Spline theory, such as Moving Mesh Methods, Galerkin and Discontinuous Galerkin Schemes, Shape Gradient Methods, Mixed FEMs, Superconvergence techniques and Fourier spectral approximations with applications in multidimensional fluid dynamics; Maxwell equations in discrepancy media; and phase-field equations. It also discusses some interesting topics related to Stokes equations, Schrodinger equations, wavelet analysis and approximation theory. Contemporary teaching issues in curriculum reform also form an integral part of the book. This book will therefore be of significant interest and value to all graduates, research scientists and practitioners facing complex computational problems. Administrators and policymakers will find it is an addition to their mathematics curriculum reform libraries.
