1. Record Nr. UNINA9910300142303321

Titolo	Spectral and High Order Methods for Partial Differential Equations - ICOSAHOM 2012 : Selected papers from the ICOSAHOM conference, June 25-29, 2012, Gammarth, Tunisia / / edited by Mejdi Azaïez, Henda El Fekih, Jan S. Hesthaven
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	9783319016016 3319016016
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (ix, 425 pages) : illustrations (some color)
Collana	Lecture Notes in Computational Science and Engineering, , 2197-7100 ; ; 95
Disciplina	515.353
Soggetti	Differential equations Numerical analysis Mathematics Mathematics - Data processing Computer science - Mathematics Differential Equations Numerical Analysis Applications of Mathematics Computational Mathematics and Numerical Analysis Computational Science and Engineering Mathematics of Computing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"ISSN: 1439-7358."
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	A quasi-optimal sparse grids procedure for groundwater flows -- The geometric basis of numerical methods -- Spectral element methods on simplicial meshes -- Exponential convergence of hp-DGFEM for elliptic problems in polyhedral domains -- A contribution to the outflow boundary conditions for Navier-Stokes time-splitting methods -- High order space-time discretization for elastic wave propagation problems -- Laguerre Simulation of Boundary Layer Flows: Conditions at Large Distance from the Wall -- Implementation of an Explicit

Algebraic Reynolds Stress Model in an implicit very high-order Discontinuous Galerkin solver -- Investigation of near-wall grid spacing effect in high-order Discontinuous Galerkin RANS computations of turbomachinery flows -- A fourth-order compact finite volume scheme for the convection-diffusion equation -- On the Effect of Flux Functions in Discontinuous Galerkin Simulations of Underresolved Turbulence -- Generation of High-Order Polynomial Patches from Scattered Data -- Towards a high order Fourier-SEM solver of fluid models in tokamaks -- Whitney forms, from manifolds to field -- Exponential Convergence of the hp version of Isogeometric analysis in 1D -- High-order locally implicit time integration strategies in a discontinuous Galerkin method for Maxwell's equations -- High-order ADI schemes for convection-diffusion equations with mixed derivative terms -- A Numerical Study of Averaging Error Indicators in p-FEM -- Coupling of an exact transparent boundary condition with a DG method for the solution of the time-harmonic Maxwell equations -- A new proof for existence of H-matrix approximants to the inverse of FEM matrices: the Dirichlet problem for the Laplacian -- Multidomain extension of a pseudospectral algorithm for the direct simulation of wall-confined rotating flows -- A comparison of high-order time integrators for highly supercritical thermal convection in rotating spherical shells -- High order methods with exact conservationproperties -- Spectral element discretization for the vorticity, the velocity and the pressure formulation of the axisymmetric Navier-Stokes problem -- Higher-order compatible discretization on hexahedrals -- Mimetic Spectral Element Advection -- Large eddy simulation of a muffler with the high-order spectral difference method -- Stability Tools for the Spectral-Element Code Nek5000; Application to Jet-in-Crossflow -- A high-order discontinuous Galerkin method for viscoelastic wave propagation -- Mixed Mimetic Spectral Element method applied to Darcy's problem -- Novel outflow boundary conditions for spectral direct numerical simulation of rotating flows -- A Geometric Approach Towards Momentum Conservation -- A Spectral Method for Optimal Control Problems Governed by the Time Fractional Diffusion Equation with Control Constraints -- Two-Phase Flow solved by High Order Discontinuous Galerkin Method.

Sommario/riassunto

The book contains a selection of high quality papers, chosen among the best presentations during the International Conference on Spectral and High-Order Methods (2012), and provides an overview of the depth and breath of the activities within this important research area. The carefully reviewed selection of the papers will provide the reader with a snapshot of state-of-the-art and help initiate new research directions through the extensive bibliography. .