

KEYNOTE SPEAKERS' PAPERS

- KS-1 - Gilbert Strang - IMACS Matrices
- KS-2 - John Ockendon - New Horizons in Mathematics - in - Industry
- KS-3 - Hans Föllmer - Efficient Strategies for Hedging Financial Risk
- KS-5 - Jack Dongarra - High Performance Computing and Trends: Connecting Computational Requirements with Computing Resources
- KS-6 - Russel E. Caflisch - Accelerated Monte Carlo Methods and Their Applications
- KS-7 - Craig J. Benham - Mathematical Aspects of DNA Structure
- KS-8 - Henk van der Vorst - Efficient and Accurate Iterative Methods for Linear Systems
- KS-9 - Andrew Stuart - Analysis and Simulation for Coupled Particle - Field Models
- KS-10 - Gerhard Wanner - Runge Kutta Methods Throughout the Century

SESSION PAPERS

100 - Mathematical Formulations and Numerical Methods for Electronic Circuit/system Simulation

- 100-1 - Hans-Georg Brachtendorf - Periodic and Quasiperiodic Steady-State Analysis of Electronic Circuits by Cubic and Exponential Splines
- 100-2 - Kiran Gullapalli - Simulation of Oscillators
- 100-3 - Martin Kahlert - Reduced Order Modelling of Parasitic Elements by Direct Eigenvalue Calculation
- 100-4 - Eusebius Doedel - Continuation Methods for Differential Equations

104 - Problem Solving Environments for Scientific Computing

- 104-1 - Hidehiro Fujio - The FEEL Tool for Finite Element Code Generation
- 104-2 - Elias Houstis ; Ann Christine Catlin ; Nitesh Dhanjani ; John Rice - The WebPDELab Server: A Problem Solving Environment for Partial Differential Equations Applications
- 104-3 - Linda Petzold ; Radu Serban ; Shengtai Li ; Soumyendu Raha ; Andrew Strelzo - A Problem Solving Environment for Dynamic Optimization of Partial Differential-Algebraic Equation Systems
- 104-4 - E.J.Rubin ; R.Dietz ; S.Lingam ; J.Chanat ; C.Speir ; R.Dymond ; V.Lohani ; D.Kibler ; D.Bosch ; C.A.Shaffer ; N.Ramakrishnan ; L.T.Watson

- From Landscapes to Waterscapes: A PSE for Landuse Change Analysis

104-5 - Sanford Fleeter ; John R. Rice ; Elias Houstis ; Ann Catlin ; Chen Zhou - GasTurbnLab: A Problem Solving Environment for

Simulating Gas Turbines

104-6 - Clemens-August Thole ; Sven Kolibal ; Klaus Wolf - AUTOBENCH: Environment for the Development of Virtual Automotive Prototypes

104-7 - Robert van Engelen ; Kyle Gallivan ; Gunjan Gupta - XML-RPC Agents for Distributed Scientific Computing

104-8 - David W. Walker - The Agent Grid: Agent-Based Resource Integration in PSEs

104-9 - Anne E. Trefethen ; Steve Hague ; Gareth Shaw - Evolving to a Problem Solving Environment

104-10 - Yoshimi Fujii ; Kenichi Ogawa ; Manabu Harada ; Katsunori Hoshi - CAPSE Software-Integration Environment with Distributed Computing and

Internetworking Technology

105 - Recommender Systems

105-2 - David C. Wilson ; David B. Leake ; Randall Bramley - Case-Based Recommender Components for Scientific Problem-Solving Environments

105-3 - F. Chaitin-Chatelin ; E. Traviesas - PRECISE: a Toolbox for Assessing the Quality of Numerical Methods and Software

105-4 - Anupam Joshi and Liang Xu - A Jini Based Framework for Component Recommenders in Scientific Computing

107 - Numerical Methods in Mechanics, Geomechanics and Biomechanics

107-2 - J. Nedoma ; Z. Kestranek Jr. ; Z. Klezl ; M. Bartos ; Z. Kestranek - Numerical Modelling in Spinal Biomechanics

107-3 - M. Magolu monga Made ; R. Beauwens - Imaginary Diagonal Relaxations for Highly Indefinite Linear Systems

107-4 - Svetozar D. Margenov - Displacement Decomposition-MIC(0) Preconditioning of Linear Elasticity Non-conforming FEM Problems

107-5 - Radim Blaheta ; Petr Byczanski ; Roman Kohut - Iterative Methods for Composite Grid Finite Element Analyses

107-6 - Jaber Abbas ; R. Beauwens - Sparse Recursive Block Factorizations

107-7 - R.H.W.Hoppe ; S.Petrova - Applications of the Newton Interior-point Method for Maxwell's Equations

107-8 - J. Berrocal ; Z. Kestranek ; J. Nedoma - Numerical Modelling of Tectonic Evolution of the Wadati-Benioff Zone Beneath the Andean Region

107-9 - Z. Kestranek - h-version of the FEM for the Contact Problem in Elasticity

107-12 - O. Axelsson ; Maya Neytcheva ; Ben Polman ; Andrey Kucherov ; Igor Kaporin ; Igor Konshin - Comparison of Algebraic Solution

Methods on a Set of Benchmark Problems in Linear Elasticity

107-15 - Pavel Bondarev - 3D finite Element Simulation of Porous Piezocomposites Using 20-nodal Iso-parametric Elements

108 - Developments and Trends in Iterative Methods for Large Systems of Equations. IN MEMORIAM RUEDIGER WEISS

108-1 - Martin Gutknecht - Trends in Iterative Methods and Preconditioning - a Brief Overview

108-2 - Miroslav Rozložnik - Estimating the Maximum Attainable Accuracy of Some Iterative Conjugate Gradient-type solvers

108-3 - Zdenek Strakos - Convergence Characteristics and Stopping Criteria for Iterative Methods

108-4 - H. Haefner ; W. Schoenauer - The Integration of Different Variants of the (I)LU Algorithm in the LINSOL Program Package

108-5 - Willi Schoenauer ; Hartmut Haefner - Numerical Experiments to Optimize the Use of (I)LU Preconditioning in the

Iterative Linear Solver Package LINSOL

108-6 - C. Vuik ; J. Frank - Deflated ICCG Method Applied to Problems with Extreme Contrasts in the Coefficients

108-7 - Shao-Liang Zhang ; Masakazu Kojima ; Kazuhide Nakata - Incomplete QR Preconditioner for Solving Large and

Dense Linear Systems In Semidefinite Programming

108-8 - Claus Koschinski - New Methods for Adapting and for Approximating Inverses as Preconditioners

108-9 - Miroslav Tuma ; Michele Benzi - A Parallel Solver for Large-Scale Markov Chains

108-10 - Oliver Bröker ; Markus J. Grote - Parallel Algebraic Multigrid via Sparse Approximate Inverses

108-11 - Van Emden Henson ; Ulrike Meier Yang - Experiences with BoomerAMG: A Parallel Algebraic Multigrid Solver and

Preconditioner for Large Linear Systems

108-12 - Stefan Röllin ; Martin Gutknecht - Variations of Zhang's Lanczos-Type Product Method

108-13 - L.A. Krukier ; L.G. Chikina - A New Class of Iterative Methods for Strongly Nonsymmetric Linear Equation Systems Based

on the Skew-symmetric Part of the Matrix

108-14 - Seiji Fujino ; Rüdiger Weiss – GPBiCG (m, l): The Alternative of BiCGSTAB and GPBiCG Methods with Consecutive m and l Iterations.

110 - Applied Numerical Computing: Grid Generation and Solution Methods for Advanced Simulations.

110-2 - A. Tolstykh - On Multioperators Principle for Constructing Arbitrary-order Difference Schemes

110-3 - B. Quatember ; H. Mühlthaler - Generation of CFD Meshes from Biplane Angiograms

110-5 - V.V. Belikov ; A. Yu Semenov - Non-Sibsonian (Harmonic) Interpolation of the Second Order

- 110-6 - Y. Shevelev - Grid Generation and Three-dimensional External Fluid Dynamics Problems
- 110-7 - A.I. Tolstykh - On Using RBF-based Differencing Formulas for Unstructured and Mixed Structured-unstructured Grid Calculations
- 110-9 - A. Ungor ; C. Heeren ; Xiang-Yang Li ; R. Haber ; S-H Teng - Constrained 2D Space-time Meshing with All Tetrahedra
- 110-10 - N. V. Pogorelov - Computational Aspects of Numerical Simulation in Astrophysics
- 110-12 - S. Lyapunov ; A Wolkov - Application of Discontinuous Galerkin Finite Element Method to the Solution of
 Partial Differential Equations. Part I. 2D Scalar Conservation Laws
- 110-13 - S. Lyapunov ; A Wolkov - Application of Discontinuous Galerkin Finite Element Method to the Solution of Partial
 Differential Equations. Part II. System of Nonlinear Equations: Euler Equations
- 110-15 - H. Korzenowski - Inviscid and Viscous Flow Simulations over a Hypersonic Body
- 110-16 - R. Koomullil ; D.S. Thompson ; Bharat K. Soni - Inviscid Airfoil Simulation Using Generalized Grids
- 110-17 - V. A. Garanzha ; I.E. Kaporin - Continuation Technique for Variational Generation of Quasi-isometric Grids
- 110-19 - S.S. Makhanov ; A.Yu. Semenov - Numerical Methods for Non-linear Parabolic Boundary-value Problems with a Priori Bounded Solution
- 110-20 - L. S. Guimond ; Jiří Patera ; Jan Patera - APRNG : Aperiodic Deterministic RNGs
- 110-21 - C-A. Bohn - A Neural Network as Finite Element Grid for the Simulation of Light Propagation
- 110-22 - W. Kwok ; K. Haghighi - A Knowledge-based Initial Mesh Design and Mesh Quality Measures
- 110-23 - S.S. Makhanov ; S.A. Ivanenko - Grid Generation as a Concept of CNC-based Part Optimization
- 110-24 - G. Hou - A New Remeshing Process for Sensitivity Analysis of Flexible Wings
- 110-25 - R.M. Spitaleri ; R. March ; D. Arena - A Multigrid Finite Difference Method for the Solution of Euler
 Equations of the Variational Image Segmentation
- 110-26 - R.C. Venkatesan - Invariant Difference Schemes for the 1-D Advection Equation
- 110-27 - A. Plaza ; M.C. Rivara - Average Adjacencies for Skeleton-regular Triangular and Tetrahedral Partitions
- 110-28 - V.V.Chudanov ; A.E.Aksenova ; V.A. Pervichko - A Locally-refinement Orthogonal Grid Generation Using CAD System

112 - Parallel Computing in Linear Algebra

- 112-1 - Birgit Hofferek ; Andreas Pelzer ; Heinrich Voss - Parallel Condensation in the Presence of Global Masters
- 112-2 - K. Murphy ; M. Clint ; R. H. Perrott - Re-Engineering Mathematical Software for Parallel Execution: A Case Study

- 112-3 - S. Romero ; L. F. Romero ; E. L. Zapata - Approaching Real-Time Cloth Simulation Using Parallelism
- 112-4 - E. J. Kontoghiorghes ; L. Garin ; P. Foschi - The QR Decomposition of Trapezoidal Matrices after Deleting Columns
- 112-5 - Peter Arbenz - A Note on ScaLAPACK's Banded System Solvers
- 112-6 - Gabriel Oksa ; Marian Vajtersic - A Fine-Grained Parallelization of the Block-Jacobi Algorithm for Solving SVD
- 112-7 - T. P. Plaks ; G. M. Megson ; V. N. Aleksandrov - A Family of Efficient Regular Arrays for Band and Sparse Matrix Inversion Using Monte Carlo Methods
- 112-8 - Ayse Kiper - A Parallel Approach for Quadratic Eigenproblems

114 - Numerical Methods in Fluid Mechanics and the Algorithms of the Next Decade

- 114-1 - G. Labrosse ; G. Kasperki ; C. Delcarte ; E.Chenier - What to do with the Singularity Free Surface - Solid ?
- 114-2 - Mejdí Azaïez - Spectral Methods Applied to Porous Media.
- 114-3 - Daniele Funaro - Spectral Element Approximations in 3-D Geometries
- 114-4 - Nikolaus A. Adams - Emerging Techniques for the Simulation of Flows in Complex Geometries and with Complex Physics
- 114-5 - Gilmar Mompean - Analogies between Viscoelastic Flows and Turbulence Modelling
- 114-6 - Paul F. Fischer ; Henry M. Tufo - High-Performance Spectral Element Algorithms for CFD
- 114-7 - Spencer Sherwin ; Joaquim Peiró - High Order Automatic Mesh Generation: Optimal p-type Surface Generation
- 114-8 - Yvon Maday ; Emmel L. ; Ould M.K. - High Order Filtering for the Accurate Recovery of Spectral Solution to Hyperbolic Conservation Laws
- 114-9 - Marcello Manna ; Andrea Vacca - Effects of the Transverse Curvature on the Statistics of Fully Developed Turbulent Flow in an Annular Pipe
- 114-10 - Robert Owens ; Cédric Chauvière - Wiggle-Free Spectral Element Methods for Non-Newtonian Flows

115 - Commodity Parallel Computing

- 115-1 - Bill Camp - Trends in Commodity Supercomputing
- 115-2 - Pierre Kuonen - Commodity Parallel Computer Architectures
- 115-3 - Anton Gunzinger - Networks for Commodity Supercomputing
- 115-4 - Jack Dongarra - Enhancing Performance and Measurement Tools for Clusters
- 115-6 - Ralf Gruber ; Alessandro De Vita ; Trach Minh Tran ; Pieter Volgers - Commodity Computers Adapted to Scientific Computing

116 - Knowledge - based Systems and Their Applications in Simulation and Control

- 116-1 - Florin Stanciulescu - Mathematical-Heuristic Knowledge-Based Systems: a New Approach of Simulation and Control under Uncertainty and Risk
- 116-2 - D. Luzeaux - Catastrophes as a Way to Build up Knowledge for Learning Robots
- 116-3 - M. Costa ; F. Palma ; D. Palmisano ; E. Pasero - On the Improvement of a Neural Controller Through Soft Modelling
- 116-4 - Iwona Pozniak-Koszalka ; L. Koszalka - Knowledge-Based Workload Control in Some Category of Manufacturing Systems
- 116-5 - V.M. Rybin ; G.V. Rybina - The Integrated Real Time Expert Systems for Tasks of Diagnostics, Management and

Ecological Monitoring: Some Results and Prospects

- 116-6 - Paolino Tona ; M'Saad - A Knowledge Base for Tuning GPC Controllers

118 - Modern Software Aspects for PDE Solvers

- 118-1 - W. Bangerth - Using Modern Features of C++ for Adaptive FEM in DEAL.II
- 118-2 - S. Lang - Parallel Computations with UG: A Framework on Unstructured Meshes
- 118-4 - J. Lang - KARDOS Software for Nonlinear Parabolic PDE Systems
- 118-5 - A. Langer - Object-oriented Concepts for FEM Software in JAVA: A Study for Linear Elasticity
- 118-6 - H.P. Langtangen - A Software Strategy for Simple Parallellization of Sequential PDE Solvers
- 118-8 - M. Thuné ; M. Ljungberg ; J. Rantakokko ; K. Ahlander - Parallel Object-Oriented PDE Solvers Using C++/F90
- 118-9 - S.Turek - Concepts of High Performance FEM Simulation and Realization in the Feast Software

120 - Sparse Matrix Computation

- 120-1 - Venansius Baryamureeba ; Trond Steihaug - Preconditioning for Iterative Methods in Recursive Robust Linear Regression
- 120-2 - Yvan Notay - Parameter Free Algebraic Multilevel Preconditioning
- 120-3 - Edmond Chow - Improving the Scalability of One-level Preconditioning Methods for Solving Large-scale Linear Systems
- 120-4 - Olaf Schenk ; Klaus Gaertner - Scalable Parallel Sparse LU Factorization with a Dynamical Supernode Pivoting
Approach in Semiconductor Device Simulations
- 120-5 - Jack Dongarra ; Padma Raghavan - A New Recursive Implementation of Sparse Cholesky Factorization
- 120-6 - Esmond G. Ng - The Ordering Problem for Sparse Matrix Factorization

121 - Computer Arithmetic and Validated Numerics

- 121-1 - Ph. Langlois - Stochastic Detection of Instability and Deterministic Enhancement of Accuracy for Iterative Algorithms

- 121-2 - M. Daumas ; Cl. Finot-Moreau ; J.M. Muller - Table Based Implementation of Elementary Functions for Hundred-bit Precision
- 121-3 - M. Pichat - The Numerical Study of Chaotic Systems - Future and Past
- 121-4 - F. Jézéquel - Dynamical Control of Computations Using Approximation Methods
- 121-5 - Svetoslav Markov - On the Solution of Linear Tight Interval Systems
- 121-6 - J.M. Chesneaux - A Reliable Floating-point Version of the Euclid's Algorithm
- 121-7 - Gotz Alefeld ; X. Chen ; F.A. Potra - Numerical Validation of Solutions of Linear and Nonlinear Complementarity Problems
- 121-8 - J.-P.M. Zemke - Fast Numerical Verification in Matlab
- 121-9 - Andre Weinberg - Improving Error Bounds for Nonsymmetric Linear Systems Through the Lanczos Process
- 121-10 - Jean-Claude Bajard ; Fabien Rico - How to Improve Division in Residue Number Systems

122 - Agent - based Simulation, Planning and Control

- 122-1 - Rosaria Conte ; Guiliano Pistolesi - NET-PLEX: an Agent-Based Simulator of Dependence Networks Complexity and Group Exchange
- 122-2 - Stanislaw Ambroszkiewicz , Wojciech Penczek ; Krzysztof Cetnarowicz , Jaroslaw Kozlak - Modelling Agent Organizations
- 122-3 - C. Bertelle ; D. Olivier ; V. Jay ; P. Tranouez ; A. Cardon - A Multi-Agent System Integrating Vortex Methods for Fluid Flow Computation
- 122-4 - G. Pépiot , R. Glardon , M. Pouly ; M. Pechouche , V. Mari - ProPlanT: Multi-Agent Systems for Enterprise Modelling
- 122-5 - T.L. Rogers - Contracting Gas Model: a Dynamic System for Minimising Picking Distance in a Fluctuating Environment
- 122-6 - Penny Ray ; Dickson Lukose - Dynamic Computational Choice of Resource Use in a Multi-Agent Based Enterprise Simulation Environment
- 122-7 - László Gulyás - On the Transition to Agent-Based Modelling: a Case Study
- 122-8 - Bryan Horling ; Victor Lesser ; Régis Vincent - Multi-Agent System Simulation Framework
- 122-9 - Klaus-Peter Neuendorf ; Markus Hannebauer - Formal Modelling of Multi-Agent Interaction in Distributed Scheduling
- 122-10 - A.J.N. van Breemen ; T.J.A. de Vries ; J.B. Striper - An Agent-Based Framework for Local Model Approaches
- 122-11 - P. De Loor ; P. Chevaillier - Generation of Agent Interactions from Temporal Logic Specifications
- 122-12 - Nicholas V. Findler ; Raphael M. Malyankar - Social Structures and the Problem of Coordination in Intelligent Agent Societies

124 - Well - posedness and Qualitative Behaviour of Solutions in Nonlinear Shell Theory

- 124-1 - Vasilij I. Sedenko - Paper cancelled - Author not present
- 124-2 - Igor D. Chueshov - Dynamics of von Karman Plate in a Potential Flow of Gas: Rigorous Results and Unsolved Problems
- 124-3 - A. Leger ; G. Geymonat - About Multiplicity of the Equilibrium Solutions as a Nonlinear Spherical Cap Tends to a Membrane
- 124-4 - Vanda Valente ; G. Geymonat - The Role of the Thinness in the Boundary Controllability of Shells
- 124-5 - Irina A. Brukhanova ; Vasilij I. Sedenko - Paper cancelled - Authors not present
- 124-6 - Eugenia V. Serdyukova ; Vasilij I. Sedenko - Paper cancelled - Authors not present
- 124-7 - Leonid Ostromuhov - Flow with Nonlinear Potential in General Networks
- 124-9 - Jean Pierre Puel - Some Problems and Results on Controllability of Fluid-structure Systems
- 124-10 - John Cagnol ; Irena Lasiecka ; Catherine Lebiedz ; Jean-Paul Zolesio - Uniform Stability in Structural Acoustic with Curved Walls
- 124-13 - Günter Leugering ; R. Hundhammer - Instantaneous Control of Vibrating String Networks
- 124-14 - I. Lasiecka - Wellposedness and Boundary Stabilization of Nonlinear Shells with Thermoelasticity
- 124-15 - Marie Grobbelaar van Dalsen - Interlude of Operators and a von Karman Plate-beam Problem with Rotational Inertia

125 - Multi - scale Modelling of Complex Chemical Systems

- 125-1 - Yablonsky Gregory ; D. Constales ; J.T. Gleaves - Multi-Scale Problems in Quantitative Characterization of Complex Catalytic Materials
- 125-2 - Keil Frerich ; Garayhi Abdul - Estimation of Reaction Kinetic Parameters from Frequency Response Data of Catalytic Fixed-Bed Reactors
- Response Behavior of Complex Reaction Systems
- 125-3 - Doepper Ralf ; Renken Albert - Modelling of the Dynamics of the Reduction of Nitrogen Oxide over Oxide Catalyst
- 125-4 - Phanawadee Phungphai ; Shekhtman Sergiy ; Gleaves John ; Jarungmanoram Chukiat - Modelling and Simulation of
Chemical Processes in Multi-Pulse TAP Experiment
- 125-5 - Lazman Mark - Effective Process Simulation : Analytical Methods
- 125-6 - S.S. Spivak ; A.M. Vaiman ; G.K. Galina - Reduction of Differential Equation System in Kinetic Modelling
- 125-7 - Bauer Matthias ; Eigenberger Gerhardt - Multiscale Modelling of Hydrodynamics, Mass Transfer and Reaction for
CO₂ Chemisorption in Bubble Column Reactors
- 125-8 - Gol'dshtein Vladimir ; Zinoviev Ann - Laminar Premixed Flames in Sprays
- 125-9 - Sazhin Sergei - Modelling of Spray Ignition Processes in Diesel Engines
- 125-10 - Sazhina Elena ; Sazhin Sergei ; Heikal M. ; Bardsley Mark - The P-1 Model for

Thermal Radiation Transfer:

Application to Numerical Modelling of Combustion Processes in Diesel Engines

- 125-11 - Panfilov Vadim ; Sheintuch Moshe - Stabilization of the Fronts in Chemical Systems with Flow
- 125-12 - Frauhammer Jörg ; Veser Götz - A Moving Grid Algorithm for the Efficient Simulation of Steep Catalytic Reaction Fronts
- 125-13 - Shchepakina Elena ; Sobolev Vladimir - Slow Regimes of Variable Stability in Chemical Systems
- 125-14 - Gol'dfarb Igor ; Kuzmenko Grigory ; V. Bykov - On one Approach to Mathematical Modelling of Multiphase Combustion

126 - Systems Design and Management Based on Subsystem Performance Modelling

- 126-1 - Jean-Paul Pignon ; F. Benaben - Modelling in Support of Functional System Design
- 126-2 - R.Azencott ; B.Chalmond ; C.Graffigne ; H.Maître ; M.Prenat (speaker) ; M.Roux - Contextual Performance Prediction for Image Analysis Algorithms
- 126-3 - F. Dambreville ; J.P. Le Cadre - Spatial and Temporal Optimization of Search Efforts for the Detection of a Markovian Target
- 126-4 - M. de Vilmorin ; E. Duflos ; M. Prenat ; P. Vanheeghe - Infrared Sensors Temporal Allocation based on Localisation Errors Modelling

127 - Mathematical Imaging as a Tool for Modelling and Simulation

- 127-1 - Dominique Jeulin - Morphological Random Models and Simulations of Images
- 127-2 - Jean-Marie Becker ; Stéphane Grousson ; D. Guieu - Points Alignment and Curves Intersection in Image Processing: a Duality Framework
- 127-3 - Michel Jourlin - Logarithmic Image Processing
- 127-4 - Guy Courbebaisse ; David Garcia ; Michel Jourlin - An Investigation of Mathematical Imaging Toward Simulation of Polymer Injection Molding
- 127-5 - Christophe Ducottet ; Jacques Fayolle ; Myriam Chouvelon ; Thierry Fournel ; Frédéric Trunde
- Wavelet Based Multiscale Analysis for Feature Detection on Images
- 127-6 - Guy Flouzat ; F. Laporterie ; O. Amram - New Trends in Environment Remote Sensing from Space:
- Expected Resolutions and Relevant Image Analysis
- 127-7 - Michel Jourlin ; J.L. Coudert - Computer Aided Dental Surgery
- 127-8 - Morris Goldner ; S. Grousson ; M. Jourlin - Application of 3D Imaging to Confocal Laser Scanning Microscopy
- Applied to the Elucidation of an Intriguing Problem of Human Infection
- 127-9 - Jacques Demongeot ; M. Richard - New Segmenting and Matching Algorithms as Tools for Modelling and Comparing Medical Images

127-10 - Gilles Bouchet ; Eric Climent ; S. Boret - Experimental Study of a Submerged Fountain: Analysis of the Free Surface by Image Processing

127-11 - Isabelle Magnin ; Anne Planat ; Pierre Croisille ; Patrick Clarysse - Heart Motion Estimation and Modelling in Magnetic Resonance Imaging (MRI)

128 - Identification of Physical Processes

128-1 - R. Abou Khachfe ; J. L. Bailleut ; Y. Jarny - The Simultaneous Determination of Thermal Conductivity and Heat Capacity

within a Composite Medium by Using Conjugate Gradient Algorithm

128-3 - Alexander V. Moultanovsky - Common Approach to Identification of Thermophysical Processes by Means of

Comprehensive Method of Adaptive Iterative Filter

128-4 - Yu. Menshikov - Inverse Problem in Minimax Statement

128-6 - Andrey Kostikov ; Yuri Matsevity - Identification of Geometrical Parameters of Thermal Systems

129 - Applied Mathematics for Industrial Flows (AMIF)

129-1 - Bjorn Engquist - Hybrid Methods for the Simulation of Electromagnetic Fields

129-2 - Alfio Quarteroni - Recent Developments on Vascular Flow Modelling and Simulation

129-3 - Michel Deville - Numerical Simulation of Three-Dimensional Flows of Viscous, Incompressible, Newtonian and Non-Newtonian Fluids

129-4 - Magne Espedal - Compositional Flow in Fractured Reservoirs

129-5 - Mike Baines - Multidimensional Adaptive Mesh Relocation Schemes for Conservation Laws

129-6 - Alessandro Russo - Stabilized Finite Elements Methods

129-7 - Wolfgang Wendland - Phenomenological Foundation, Mathematical Theory and Applications of Sedimentation-Consolidation Processes

129-8 - Adelia Sequeira - On Steady Flows of Viscoelastic Fluids in Pipes

129-9 - Peter Wesseling - Uniformly Effective Methods for Hyperbolic Systems

130 - Boundary Value Problems for PDE's

130-1 - Grimshaw Roger HJ ; O.G. Derzho - Large-Amplitude Solitary Waves with Vortex Cores in Stratified and Rotating Flows

130-2 - Krutitskii Pavel - How to Avoid Hypersingular Integral Equations in the Neumann Problem in Acoustic Scattering.

130-3 - Vainikko Gennadi - Fast Solvers of Generalized Airfoil Equation of Index -1

130-4 - Ikehata Masaru - Inverse Conductivity Problem with One Measurement and Reconstruction of a Polygonal Inclusion

130-5 - Masatake Miyake - Borel Sumability and Integral Representation of Borel Sum of Divergent Solutions

in Partial Differential Equations of Non-Kowalevski Type

130-6 - Kiyoshi Mochizuki - Inverse Problem for Interior Spectral Data of the Sturm-Liouville Operator.

130-7 - Tsuji Mikio - Geometric Solutions for Hyperbolic Equations of Monge-Ampere Type.

130-8 - Irena Lasiecka - Global Solutions and Uniform Stability of Solutions to Quasilinear Wave Equation with

Nonlinear Boundary Dissipation and without Geometric Restrictions

130-9 - Sadao Miyatake - Hamilton Flow and Cauchy Problem for Nonlinear Hyperbolic Equation.

130-10 - Mitsuhiro Nakao - L^p Estimates for the Wave Equation in Exterior Domains

130-11 - Pavel Krutitskii - Boundary Value Problems in Cracked Domains and Integral Equations.

130-12 - Isao Wakano - Mathematical and Numerical Analysis of Singularity Near Crack Tips in Two Dimensional Elasticity

130-13 - Kohji Ohtsuka - Material Derivative of Green's Kernel in Elasticity with Respect to Cracks

130-14 - Khots Boris ; Dmitriy Khots - P-groups of Transformations of One-dimensional Manifolds

131 - Output Bounds for Partial Differential Equations

131-1 - Anthony T. Patera - Output Bounds for Elliptic Partial Differential Equations: a General Formulation

131-2 - Yvon Maday - Bounds for Outputs for the Stokes and Navier-Stokes Equations

131-3 - Luc Machiels - Finite Element Output Bounds for Hyperbolic Problems

131-4 - Dimitris Rovas - An Overview of Blackbox Reduced-basis Output Bound Methods for Elliptic Partial Differential Equations

131-5 - Marius Paraschivoiu - The FETI Method for Finite Element Output Bounds

132 - Computational Intelligence in Control and Robotics

132-1 - A.B. Azevedo ; A.E. Ruano - Neural Networks PID Autotuning with on-Line Adaptation

132-2 - Józef Lisowski ; Andrzej Rak - The Neural Ship's Domain as a State Constraints in the Dynamic Programming of Safe Trajectory

132-3 - Kuu-young Young ; Shaw-Ji Shiah - Learning Space Analysis and Coverage for Robot Learning Control

132-4 - Fernando Matía ; Fabrice Wawak - Computational Intelligence in Autonomous Mobile Robot Navigation

132-5 - Primož Potočnik ; Igor Grabec - Model Predictive Control Using Neural Networks and Genetic Algorithms

132-6 - Abdelaziz Benallegue ; D.Y. Meddah ; B. Daachi - Neural Network Identification and Control of a Class of Nonlinear Systems

132-7 - Patrice Billaudel ; A. Devillez ; G. Villermain-Lecolier - Identification of the Functioning Modes of Plastic

134 - Nonoscillatory Numerical Schemes for Transport Equations with Convection

Term

134-1 - Katsuhiko Sakai ; Hiroshi Senbonki - A Nonoscillatory Numerical Scheme Preserving Advection-Diffusion Properties of Transport Equations

134-2 - Tchavdar Marinov ; Christo Christov - Identification of the Unknown Coefficient in Ordinary Differential Equations via

Method of Variational Imbedding

134-3 - Rossitza Marinova ; Tchavdar Marinov ; Katsuhiko Sakai ; Christo Christov - A Splitting Scheme for Advection-Diffusion

Problems Based on Finite Variable Difference Method

134-4 - Isao Kimura ; Katsuhiko Sakai - Investigation on the Cole-Hopf Transformation with Application to Nonlinear Advection-Diffusion Equations

134-5 - Maurizio Bottoni - Comparison between Orthogonal Collocation and Finite Differences Methods for the Solution of Model Transport Equations

135 - Urban Air Pollution Modelling

135-1 - A. Martilli ; A. Clappier ; M. Rotach - The Urban Atmospheric Boundary Layer: a Modelling Study

135-2 - P. Sahm ; Nicolas Moussiopoulos ; P.M. Turlou - An Efficient Modelling Tool for Assessing Urban Ozone Exposure

135-4 - C. Chauvet ; B. Leidl ; M. Schatzmann - Wind-tunnel Modelling of Microscale Dispersion in a Street Canyon

135-5 - V. Assimakopoulos ; P. Sahm ; Nicolas Moussiopoulos ; H. ApSimon - Effects of Street Canyon Geometry on the

Dispersion Characteristics in Urban Areas

138 - Advanced methods for Reaction - Advection - Diffusion Problems

138-1 - Alf Gerisch - Numerical Methods for the Simulation of Tumor Angiogenesis Models

138-2 - Astrid Holstad - Time Integration for Multiphase Reactive Fluid-flow

138-3 - Chunmiao Zheng - Subsurface Contaminant Transport Modelling: Challenges and Resolutions

138-4 - Ralf Wolke ; Oswald Knoth ; Jörg Weickert - Load-balancing in the Parallelization of the Multiscale Atmospheric

Chemistry-Transport Model MUSCAT

138-5 - Patrick Berkvens ; Mike Botchev ; Jan Verwer - On the Efficient Treatment of Vertical Mixing and Chemistry in Air Pollution Modelling

138-6 - Wenyuan Liao ; Lilun Cao ; Jianping Zhu ; Abdul Q.M. Khaliq - An Efficient High Order Algorithm for Solving Reaction-Diffusion Equations

139 - Writhing of Rods and Applications

- 139-1 - Bernard D. Coleman - On the Dynamics and Statics of Axially Symmetric Rods Obeying the Theory of Kirchhoff
- 139-2 - Kathleen A Hoffman - Stability Results for Elastic Rods
- 139-3 - Chris Wiggins - The Viscous Nonlinear Dynamics of Twist and Writhe
- 139-4 - Gabor Domokos - Constrained and Unconstrained Euler Buckling
- 139-5 - Barrie W. Fraser - An Elastic Rod Model of Two-strand Yarn Plying
- 139-6 - Alain Goriely - Statics and Dynamics of Intrinsically Curved Filaments
- 139-7 - Alan Champneys ; G.H.M. Van der Heijden J.M.T. Thompson ; D.M. Stump - The Effects of Gravity
and Intrinsic Curvature on Torsional Localised Buckling
- 139-8 - G.H.M. van der Heijden - Spatially Complex Localisation in Twisted Elastic Rods Constrained to Lie on a Cylinder
- 139-9 - Stephan Kehrbaum ; John H. Maddocks - Effective Properties of Elastic Rods with High Intrinsic Twist
- 139-10 - Stephane Rey ; John H. Maddocks - Buckling of an Elastic Rod with a High Intrinsic Twist
- 139-11 - H. von der Mosel ; F. Schurich ; O. Gonzalez, John H. Maddocks - Self Contact of Nonlinearly Elastic Rods I. Existence
- 139-12 - Friedemann Schuricht ; Heiko von der Mosel ; O. Gonzalez ; John H. Maddocks - Self Contact of Nonlinearly Elastic Rods II. Regularity

141 - Nonlinear Wave Equations

- 141-1 - R.V.N. Melnik ; D.V. Strunin, A.J. Roberts - Numerical Analysis of the Behaviour of Rubber-Like Polymers with
Hyperbolic Models of Nonlinear Thermoelasticity
- 141-2 - D. Fotiadis ; C.V. Massalas - Wave Propagation in a Long Human Bone of Arbitrary Cross Section with a Cavity
Filled with an Incompressible Viscous Fluid
- 141-3 - A.G. Bratsos ; Thiab R. Taha - A Parametric Linearized Finite-Difference Method for the Solution of the Nonlinear Cubic Schrödinger Equation
- 141-4 - Otis Wright ; M.G. Forest ; K.T.-R. McLaughlin - Some Riemann-Green Functions for the Geometric Optics Approximation
of the Defocusing Nonlinear Schrödinger Equation
- 141-5 - D.A. Karpeev ; Constance M. Schober - Generating Functions and Symplectic Integrators for Nonlinear Schrödinger Systems
- 141-6 - M. S. Ismail ; Thiab R. Taha - Finite Element Method for the Coupled Nonlinear Schrödinger Equation

150 - Tools, Programming Environments and Algorithmics for Parallel Processing

- 150-1 - J. Abella ; S. A. Ali Touati ; A. Anderson ; C. Ciuraneta ; J. M. Codina ; Min Dai ; C.

Eisenbeis ; G. Fursin ; A. González ; J. Llosa ;

M. O'Boyle ; A. Randrianatoavina ; J. Sánchez ; O. Temam ; X. Vera ; G. Watts -
MHAOTEU Tools for Memory Hierarchy Management

150-2 - Yosr SLAMA ; Mohamed JEMNI - Improving Code Generation in the Polytope Model

150-3 - G. Folino ; G. Spezzano - A Problem Solving Environment for Interactive Simulation of
Bioremediation Models on Parallel Computers

150-4 - Daoudi El Mostafa, Abdelouafi Meziane, Yahya Ould Mohamed, El Hadj - Parallel
TLHMM Model for Automatic Speech Recognition

150-5 - E.M. Daoudi, E.M. Jaâra, H. Nait Cherif - Parallel Image Compression by Neural
Network Techniques

150-6 - I.V. Abalakin, S.N. Boldyrev, B.N. Chetverushkin, M.V. Iakobovski & A.V. Zhokhova -
Parallel Algorithm for Solving Flow

Problems on Unstructured Meshes

151 - Large - Eddy Simulation for Unsteady Complex Flows

151-1 - C.P. Mellen ; J. Fröhlich ; W. Rodi - Large-eddy Simulation of the Flow Over a Periodic
Hill

151-2 - F. Ducros , C. Jimenez , B. Cuenot ; B. Bedat - Some Problems Relative to Unsteady
Mixing and Numerical Front Description within LES

151-3 - Robert Moestam ; Lars Davidson - Large-eddy Simulation of a Thermocline in a Pressure
Driven Flow between Two Infinite Plates

151-4 - Peter R. Voke - The LESFOIL Project: Progress in the Large-eddy Simulation of Aerofoil
Flow

151-5 - S. Stolz ; N.A. Adams ; L. Kleiser - The Approximate Deconvolution LES Model Applied
to the Shock-Boundary-Layer Interaction

151-6 - I. Mary ; Ph. Guillen ; P. Sagaut - Large-eddy Simulation of the Manipulated Flow
Around a Circular Cylinder

152 - Physical Knots

152-1 - Jason Cantarella - Cone Surface Bounds for Ropelength

152-2 - Oscar Gonzalez ; John H. Maddocks - Global Curvature, Thickness and Ideal Shapes

152-3 - Kenneth Millett - A Monte Carlo Investigation of Polygonal Knot Spaces and Ideal
Physical Knot Configurations

152-4 - Antti J. Niemi - Knotted and Linked Solitons in Field Theory

152-5 - Jun O'Hara - Langevin's Conformal Invariant Knot Energy

152-6 - Andrzej Stasiak - Ideal Knots and Physical Knots

152-7 - Tetsuo Deguchi ; M. K. Shimamura - Size-Dependence of the Probability of Random
Knots and Knotted DNAs with Effective Diameter

152-8 - David Swigon - Minimum Elastic Energy Configurations of DNA Torus Knots and
Catenanes

152-9 - Giovanni Dietler ; P. Pieranski ; A. Stasiak ; J. Dubochet ; S. Kasas - Localization of

Breakage Points in Knotted Strings

152-10 - Renzo L. Ricca - Relaxation of Magnetic Knots

152-11 - Piotr Pieranski ; S. Przybyl ; Andrzej Stasiak - Gordian Unknots

152-12 - Robert B. Kusner - Can one Tie a Knot with 1 Foot of 1 Inch Rope?

154 - Equations with Delay: Theory, Methods, Applications

154-2 - Borne Pierre ; Kolmanovskii V.B. ; Shaikhet L.E. - About New View on the Old Problem of Stabilization of Inverted Pendulum

154-3 - Edwards John T. ; Ford N. ; Roberts Jason A. ; Shaikhet L.E. - Stability of a Numerical Approximation to an Integro-differential Equation of Convolution Type

154-4 - Kolmanovskii V.B. ; Kosareva N.P. - Properties of the Solutions of Difference Equations with Finite and Infinite Delay

154-5 - Xuerong Mao X. ; Leonid Shaikhet - About Delay-Dependent Stability Criteria for Stochastic Differential Delay Equations with Markovian Switching

154-6 - Paternoster Beatrice ; Shaikhet L.E. - About Integrability of Solutions of Stochastic Difference Volterra Squations

154-7 - Gouaisbaut F. ; Dambrine M. ; Richard J.-P. - Variable Structure Control of Systems with State Delay

154-8 - Vecchio Antonia - Volterra Discrete Equations

155 - Computational Methods in Financial Engineering

155-1 - John Appleby - A Complete Market Model with Feedback

155-2 - Amir F.Atiya ; Malik Magdon-Ismail - Using High, Low, and Close Data for Volatility Estimation

155-3 - Laura Ballotta - Simulation of Levy Processes and the Option Valuation Problem: the Case of the Alpha-quantile Option

155-4 - E. Dinenis ; D. Flamouris ; J. Hatgioannides - Implied Valuation of Asian Options

155-5 - D.A.Karras ; B.G.Mertzios ; R.C.Papademetriou - Efficient Local Techniques in Financial Time Series Forecasting

155-6 - M.Magdon-Ismail ; A.F.Atiya ; Y.S.Abu-Mostafa - Pricing the Quality Option for the Bond Futures Contract in a Multifactor Vasicek Framework

155-7 - M. Monoyios - Optimal Valuation of Options under Transaction Costs

155-8 - T.S.Papatheodorou ; M.D. Koulisianis ; P.E. Hadjidoukas - Numerical Methods for the American Option Valuation Problem and their Experimental

Comparative Evaluation

155-9 - Claudio F.Silva ; Victor C.A. Duarte ; Marco A.X. Valentim - CVM Models Applied to Financial Time Series

158 - Mathematical Modelling of Granular Materials and Reactive Porous Media

- 158-1 - Ekkehard Holzbecher - Characterisation of Heat and Mass Transfer in Porous Media
- 158-2 - J. A. D. Connolly - Temperature-Dependent Viscous Compaction and Fluid Compartmentalization in Sedimentary Basins
- 158-3 - A. Revil ; W. Utama ; M. Zamora - Electrokinetic Phenomena in Granular Porous Materials
- 158-4 - Maher Moakher - Discrete Element Simulations of Granular Flow, Mixing and Segregation Inside Tumbling Blenders
- 158-6 - Xin-she Yang Bin-zhong Zhou - Viscoelastic Flow in Reactive Porous Media
- 158-7 - A. Revil - Pervasive Pressure Solution in Granular Porous Materials

160 - Theoretical and Numerical Methods for Stochastic PDE's

- 160-1 - Jürgen Potthoff - White Noise Analysis of Stochastic Partial Differential Equations
- 160-2 - Hermann G. Matthies - Overview of Galerkin Methods for Stochastic Partial Differential Equations
- 160-3 - M. Macke ; Chr. Bucher - Conditional Random Fields for Finite Elements Based on Dynamic Response
- 160-4 - Mark Asch - Direct and Inverse Problems for Wave Propagation in Random Media
- 160-6 - L. Streit ; M. Grothaus - Renormalization of Non-Linear Stochastic Partial Equations - Oksendal's Method
- 160-7 - R. Ghanem - Stochastic Adaptive Refinement: Coupling of Mesh and Data Resolutions
- 160-9 - H. Grundmann ; H. Waubke ; St. Lenz - Dynamic Response of an Elastic Half Space with Random Properties Application of Transform Techniques
in a Numerical Approach

161 - Advances in Numerical Micromagnetics

- 161-1 - O.A. Chubykalo ; B. Lengsfeld ; J. Kaufman - Monte Carlo Studies of Thermal Stability of Magnetic Recording Media
Plots and the Exchange and Dipolar Interactions
- 161-2 - U. Nowak ; D. Hinzke ; R.W. Chantrell - Monte Carlo Approaches with Time Step Quantification for Micromagnetic Problems
- 161-3 - C. Carstensen ; A. Prohl ; S.A. Funken - Stable Finite Element Methods in Relaxed Micromagnetics
- 161-4 - G. Albuquerque ; J. Miltat ; A. Thiaville - Coherent Spin Structures Dynamics: Numerics and Application to High Density Magnetic Random Access
Memories (MRAM's)
- 161-5 - H. Kronmüller ; T. Leineweber ; R. Hertel - Intrinsic Dynamics of Magnetization Processes in Small Particles
- 161-7 - L. Lopez-Diaz ; E. Moro ; L. Torres - Different approaches for Thermalizing the Landau-Lifshitz-Gilbert Equation
- 161-8 - O. Chubykalo ; M. Wongsam ; J. Hannay ; R.W. Chantrell - Spin Waves and Magnetisation Reversal

161-9 - W. Scholz ; J. Fidler ; D. Süß ; T. Schrefl - Langevin Dynamics of Small Ferromagnetic Particles and Wires

161-10 - R. Smirnov-Rueda ; O.A. Chubykalo ; A. Hernando ; J.M.Gonzales - An Analysis of the Relationship between the Henkel

162 - Continuum Mechanics Models for DNA

162-1 - Craig J. Benham - Topologically Driven Structural Transitions in DNA - Their Computational Analysis and Biological Functions

162-2 - Patrick Furrer - Breaking the Register Symmetry in DNA Minicircles

162-3 - Alain Goriely ; Michael Tabor - The Dynamics of Coiling in Elastic Filaments and its Application to Biology

162-4 - Maher Moakher - On Smoothing the DNA Intrinsic Shape

162-5 - E. L. Starostin - Closed Loops of a Thin Elastic Rod and its Symmetric Shapes with Self-contacts

162-6 - D. Genest - Correlated Atomic Motions in the Structural Fluctuations of Nucleic Acids

162-7 - Robert S. Manning - Continuum Modelling of the Enhanced Flexibility of the TATA-box Sequence in DNA

162-8 - Wilma K. Olson - DNA Base Sequence and Three-dimensional Structure

162-9 - David Swigon - On Solutions of the Self-contact Problem for Elastic Rods and Applications to DNA Supercoiling

162-10 - Heinz Sklenar - Local and Global Description of Nucleic Acid Structures

164 - Modelling of Alternating Field Effects on Hydrodynamic Stability

164-1 - D.V.Lyubimov ; A.A.Cherepanov ; T.P.Lyubimova - Stability of Fluid Interface in a Vibrational Field

164-2 - G. Bardan ; A. Jounet ; A. Mojtabi - Porous Medium Heated from below With Vertical Vibration: Onset of Convection

164-3 - L.M.Braverman ; A.Oron - Vibrational-convective Instability of a Fluid Layer-linear and Weakly Nonlinear Analysis

164-4 - T.P.Lyubimova ; E.N.Krapivina - Gravity Modulation Influence on a Convective Stability of Visco-elastic Fluid

164-5 - H.BenHadid ; S.Vaux ; R.Touihri ; S.Kaddeche - Three-dimensional Instability of a Magnetically Driven Rotating Flow in Circular Cylinders

164-6 - D.V.Lyubimov ; A.A.Cherepanov ; T.P.Lyubimova ; D.Beisens ; B.Roux - Equilibrium Shape of a Drop (Bubble) in a Vibrating Fluid

164-7 - D.V.Lyubimov ; S.V.Shklyaev - On the Numerical Investigations of Thermoacoustic Convection

164-8 - T.P.Lyubimova ; A.A.Nikitina - Numerical Simulation of Time-average Flows in Closed Cavity Subject to Torsional Oscillations

165 - Multiscale Modelling

165-1 - Z. Aboura ; F. Meraghini ; D. Scida ; F. Desrumaux - Multiscale Modelling for Prediction of the Overall Behavior and Damage Growth in Reinforced

Fiber Composites (I°)

165-2 - Dingli J.Ph. ; Abdul-Latif A. ; Saanouni K. - Multiscale Modelling for Prediction of the Overall Behavior and Damage Growth in Reinforced Fiber

Composites (II°)

165-3 - Garmestani H. - Characterization of Heterogeneity Using Statistical Continuum Mechanics-Application to Large Deformation Processes in

Composite and Polycrystals

165-4 - S. Ahzi - Modelling of Dynamic Plasticity and Failure in Metals

166 - Singular Differential - Operator equations: Theory, Stability, Computing

166-1 - Nicolay A. Sidorov ; Michael V. Falaleev ; Olga A. Romanova - The Theory of Singular Differential-Operator Equations

166-2 - Gorbunov Vladimir K. - Variational Methods and Regularization of Degenerate Equations

166-3 - Loginov B.V. ; Makarov M.Yu. ; Rousak Yu.B. - Solutions Stability for Equations with Degenerate Operator at the Highest Derivative

168 - Atmospheric Modelling

168-1 - Volker Guelzow ; Thomas Diehl - Large Climate Simulations on Large Systems

168-2 - Wolfgang Joppich ; J. Quaas - Experiences with Coupling Techniques Applied to General Circulation Models in a Metacomputing Environment

168-3 - Werner K. Graber ; Fritz Gassmann - Real Time Modelling as an Emergency Decision Support System for Accidental Release of Air Pollutants

168-4 - John Carras ; Martin Cope ; Merched Azzi - A Model to Forecast Air Quality in Australian Cities

168-5 - Wolfgang Joppich ; S. Fasbender - The Local Weather Forecast Program LM of the Germany Weather Service on a PC Cluster

168-6 - Thomas Lux ; Matthias L. Jugel ; Achim Sydow - Simulation Software Tools for Air Pollution Analysis

169 - Fuzzy Modelling and Control

169-1 - Mohand Si-Fodil ; Patrick Siarry ; Jean-Luc Tyran - A Contribution to the Rule Selection and Fuzzy Base Optimization Classical Problems

169-2 - Koumei Hirohashi ; Hayao Miyagi ; Katsumi Yamashita - SOC Design for the Solution of Fuzzy Relation Equation

169-3 - Yoshitaka Matsuda ; Rumiko Azuma ; Hayao Miyagi - Fuzzy-rule Construction Using Rough Sets

169-4 - Hitoshi Miyata ; Eikou Gonda ; Masaaki Ohkita - Fuzzy-tuning of Fuzzy Reasoning by

the Simulated Annealing

169-5 - Eikou Gonda ; Hitoshi Miyata ; Masaaki Ohkita - Fuzzy-tuning of Fuzzy Reasoning when Learning Data has a Radically Changing Distribution

169-6 - N.G. Nyakoe ; M.Ohki ; M.Nakashima ; M.Ohkita - Traveling of a Wheelchair type Mobile Robot by the Fuzzy Control

169-7 - Patricia Melin ; Oscar Castillo - A New Method for Adaptive Model-based Control of Non-linear Dynamic Industrial Plants Using a Neuro-fuzzy-fractal Approach

170 - Medical Application of Robotics

170-1 - S.G. Tzafestas ; N.-M. Sgouros - Medical Applications of Intelligent Robotics – Imaging and Virtual Reality

170-3 - Carsten Kübler ; J. Raczowsky ; H. Wörn ; O. Dössel - Robots for Medical Application

170-4 - Laura Gastaldi ; G. Belforte ; M. Sorli - Simulation of Paraplegics Gait with the Active Knees Orthosis

170-5 - E.S. Tzafestas - Synthesizing Interface Specifications for Intelligent Robotic User-Assistants in Medical Environments

170-6 - Mike Topping ; Jane Smith - The Development of Handy 1, a Rehabilitation Robotic System to Assist the Severely Disabled

170-7 - R. Barea ; Luciano Boquete ; M. Mazo ; E. López ; A. García-Lledó - EOG Technique to Guide a Wheelchair

170-8 - Philippe Hoppenot ; Etienne Colle - Robotics Assistance to Disabled and Elderly People

171 - Bioinformatics and Modelling

171-1 - Inna Dubchak ; Manfred Zorny - Specialized Biological Databases and their Role in Building Models of Regulation

171-2 - Wilma K. Olson - Knowledge-based Predictions of Protein-DNA Interactions

171-3 - Christopher Landauer ; Kirstie Bellman - Can Formal Mathematics Model Informal Phenomena ?

171-4 - K. Bellman - Mathematical Fictions and Physiological Realities: The Challenges of Brains Reasoning about Themselves

171-5 - Casimir A. Kulikowski ; Ilya Muchnik ; Gaetano T. Montelione - Structural Domain Parsing from Protein Sequences

171-6 - O. Lichtarge - Integrating Protein Sequence-Structure-Function Information Using Evolution as a Computational Principle

172 - Hybrid Iterative Methods for Linear Algebra

172-1 - Thomas Guignon ; Serge Petiton - Arnoldi Chebyshev Methods on Distributed Memory Parallel Computer

172-3 - David R. Kincaid ; David M. Young ; Jen-Yuan Chen - A Modified GMRES Iterative Method

- 172-4 - Nahid Emad - A Generalization of Explicitly Restarted Block Arnoldi Method
- 172-5 - Ahmed N. Zaoui ; E. Traviesas - The Hybrid Eigensolver ISA to Compute the r Eigenvalues Closest to a Given Complex Point: a Qualitative Study
- 172-6 - Dorian C. Arnold ; Susan Blackford ; Jack Dongarra ; Victor Eijkhout ; Tinghua Xu - Seamless Access to Adaptive Solver Algorithms

173 - Numerical Methods for Delay Differential Equations

- 173-1 - Christopher T H Baker - The Issue of Local Lipschitz Conditions in the Numerics of Nonlinear Delay Differential Equations
- 173-2 - Karel in 't Hout - Equistage Interpolation in the Numerical Solution of Delay Differential Equations
- 173-3 - Neville J. Ford ; S.M. Verduyn Lunel - Numerical Approximation of Delay Differential Equations with Small Solutions
- 173-4 - K. Engelborghs ; T. Luzyanina ; D. Roose - On the Bifurcation Analysis of a Delay Differential Equation Using DDE-BIFTOOL
- 173-5 - T. Luzyanina ; K. Engelborghs ; D. Roose - Differential Equations with State-dependent Delay: Numerical Study
- 173-6 - Yunkang Liu - Fast Algorithms for Solving Certain Systems of Linear Hyperbolic Equations

174 - Adaptive Techniques for PDEs

- 174-1 - Jens Lang - A Two-Dimensional rh-Adaptive Finite Element Method Based on a posteriori Error Estimates
- 174-2 - Keith Miller - Moveable Node Methods for Steady-state Hyperbolic Systems
- 174-3 - Martin Berzins - Unstructured Mesh Solvers for Atmospheric Dispersion Problems: Mesh Adaptation, Parallelism and Visualization
- 174-4 - John Mackenzie - The Adaptive Numerical Solution of Phase Change Problems Using Moving Mesh Methods
- 174-5 - Slimane Adjerid ; J. E. Flaherty ; L. Krivodonovaz - An a posteriori Error Estimation Procedure for the Discontinuous Galerkin Method
- 174-6 - Joe Flaherty ; J.D. Teresco - Software for Parallel Adaptive Computation
- 174-7 - Robert Russell - On Moving Mesh Methods for Solving PDEs

180 - Virtual Reality and Simulation

- 180-1 - Vitaly Semenow ; Sergei Morozow ; Oleg Tarlapan ; Alevtina Belayeva - Component-Based Development of Scientific Computing Applications in OpenMV Environment
- 180-2 - A. Gerndt ; T. van Reimersdahl ; T. Kuhlen ; L. Henrichs ; C. Bischof - A Parallel Approach for VR-based Visualization of CFD Data with PC clusters

180-3 - Christian Knöpfle ; Stefan Müller - Investigating FE-Datasets in Virtual Environments

180-4 - Bertram Walter - Animation of Wind Driven Water Waves on the Open Sea Based on Two Dimensional Energy Spectra

180-5 - Herbert Rüsseler ; Ivo Haulsen - Experiencing Fire Simulation Results by Using Virtual-Reality Technology

CONTRIBUTED SESSION PAPERS

200 - Computational Mathematics

210 - Dynamical Systems

- 210-1 - A. Fayaz ; F.M. Salam - Adaptive Optimal Observers for Dynamic Nonlinear Systems
- 210-2 - A.N. Zhirabok ; A. M. Pantileeva - Invariance and Error Correction in Nonlinear Dynamic Systems
- 210-3 - M.V. Shamolin ; New Families of Many-dimensional Phase Portraits in Dynamics of a Rigid Body Interacting with a Medium

211 - Fractals and Wavelets

- 211-1 - C. Sanchez Avila ; R. Sanchez ; Reillo - A Regularized Solution to Edges Detection Using Dyadic Wavelet Transform Maxima
- 211-2 - J.B. Caillau ; J. Noailles - Wavelets for Adaptive Solution of Boundary Value Problems

212 - Chaos and Bifurcation

- 212-1 - B. S. Attili - Tracing Implicitly Defined Curves Numerically with the Help of Singular Value Decomposition
Bounded by Free Surfaces
- 212-2 - V.V. Tarasevich - The Water Hammer Accompanied with the Flow Continuity Rupture as a Model of Chaos
- 212-3 - L. Djamaï ; P. Coirault ; J.C. Triessou - Nonlinear System Identification Using Orthonormal Polynomial Decomposition in Multivariable Case
- 212-4 - Octavian Pastravanu ; Mihail Voicu - Robustness Analysis of Componentwise Asymptotic Stability
- 212-5 - S.A. Dovbysh - Computer-aided Proofs of Chaotization and Non-integrability of Multi-dimensional Systems
- 212-6 - V.G. Zvyagin - Solvability of Boundary and Initial-boundary Value Problem for a Certain Model of Laminar and Turbulent Flows of a Fluid
- 212-10 - V. Obukhovskii ; P. Zecca - On some Properties of Semilinear Functional Differential Inclusion in Banach Spaces
- 212-11 - V.A. Martinov - Solvability of Initial-boundary Value Problems for Euler's Equations of an Ideal Incompressible Magnetic Fluid

213 - Differential Equations

- 213-1 - Charles Simpson ; Neville J. Ford - The Approximate Solution of Fractional Differential Equations of Order Greater than one
- 213-2 - Filippov S.S. ; Tygliyan A.V. - Boundary Value Problems for ODEs with Extra

Boundary Conditions

- 213-3 - John T. Edwards ; Jason A. Roberts ; Neville J. Ford - The Numerical Simulation of an Integro-differential Equation Close to Bifurcation Points
- 213-4 - M. A. El-Gebeily ; K. M. Furati - A Shooting Method for Nonlinear Singular Boundary and Sturm-Liouville Problems
- 213-5 - Mahmoud M. El-Borai - Semigroups and Incorrect Problems for Evolution Equations
- 213-6 - Manuel Alfonso ; Juan de Lara - Distributed Simulation of Systems Based on Partial Differential Equations at the Internet
- 213-7 - Neville J. Ford - Numerical Approximation of the Characteristic Values for a Delay Differential Equation
- 213-8 - O.V. Solonoukha - On Localization of Monotone Type Problems
- 213-9 - Polyak Mykola ; V. O. Syasev - Boundary Element Method Application to Drying Process Calculation
- 213-10 - V.P. Orlov - On some Models of Thermoviscoelasticity

214 - Control Theory

- 214-1 - A. El-Kashlan - Decentralized PID Controller Design by Eigenvalue Assignment
- 214-2 - A. L. Kalamkarov - Analysis and Design of Composite and Framework Structures
- 214-3 - Adriana Sirbu ; Dimitrie Alexa ; Ioan Cleju - Robust Fourier Analysis of Variable Topology Systems in a Switched Bond-graph Framework
- 214-4 - J.-J. Yamé - On Controllability and Spectrum Distribution in Computer-controlled Systems
- 214-5 - G. Marro ; D. Prattichizzo ; E. Zattoni - A Nested Computational Scheme for Discrete-time Cheap and Singular LQ Control
- 214-6 - Leslaw Socha - Application of Statistical and Equivalent Linearization with Moment Criteria in Stochastic Quasi-optimal Control Problems
- 214-7 - Sorin Manza ; Ciprian Lupu ; Dumitru Popescu - Advanced Techniques for Non-linear Control Systems
- 214-8 - J.T. Betts ; N. Biehn ; S.L. Campbell ; W.P. Huffman - Convergence of Nonconvergent IRK Discretizations of Optimal Control Problems
- 214-9 - G. Mušič ; M. Štikovec ; B. Zupančič - Process Modelling for Hybrid Control

215 - Optimisation

- 215-1 - V.K. Gorbunov - Generalized Normal Solution of Degenerated System of Equations/Inequalities
- 215-2 - A.F. Albou ; V.I. Gorbunov ; V.I. Zubov - Modelling and Optimal Control of the Melting Process
- 215-3 - Victor K. Tolstykh - New First-order Algorithm for Optimal Control with High Dimensional Quadratic Objective
- 215-4 - Gopal Kumar - Buckling Algorithm - Temporary Spatio-temporal Modulation of Cost Functions to Achieve Better Computational

Efficiency in Searching for Optimality

- 215-5 - Ahmed A. El-Sawy - An Interactive Approach Based AHP to Vector Optimisation Problems
- 215-6 - Tadeusz Giec - On an Interval Computational Method in Multicriteria Linear Programming Problems
- 215-7 - Cistelean Rodica Mihaela - An Autonomous System for Controller Design
- 215-8 - V. Bevilacqua ; G. Mastronardi - Edge Detection Using a Steady State Genetic Algorithm
- 215-10 - L.A. Pilipchuk ; B.A. Gutin - Minimax Problem on Distribution Programming
- 215-11 - L.A. Pilipchuk ; V. Gutkovsky - Inhomogeneous Multinetwork Dynamic Problem
- 215-12 - V.E. Krivonozhko ; O.B. Utkin ; R. V. Senjkov ; A. V. Volodin ; A. V. Antonov - Parametric Optimisation Algorithms to Efficiency

Analysis of the Complex Systems

- 215-13 - A. Seidl ; J. Oberndorfer - Subsets-of-a-set Analysis for Solution of Coding Problems in Locksmithing
- 215-14 - M. Thomas ; K. Goser - Iterative Weight Selection to Multi-objective Optimisation
- 215-17 - Deaconu Adrian - Rectangle(s) with Minimal Surface which Contain(s) Inside or on Boarder 'n' Given 2D Points
- 215-18 - Alexey Ignatiev - On Optimal Stabilisation of Non-autonomous Systems
- 215-20 - A. Ouabdesselam ; T. Lamraoui ; A. Aoufi - A. Souayeb - Statistical Study of the Costs of Tours of the Travelling Salesman
- 215-22 - N.I. Djuranovic-Milicic - A Modification of the Step-size Algorithm: Unconstrained and Constrained Version
- 215-23 - Dragan Radulovic ; Martin Appel - Accelerated Random Search
- 215-24 - M. Lupu ; E. Scheiber - Optimisation Methods for Some Airfoils in the Case of Nonlinear Problems in Jet Aerodynamics

216 - Statistics and Stochastics

- 216-1 - A. Spivak - The Stochastic Dynamics of the Escaping Trajectories in Kramers' Problem
- 216-2 - Th. D. Popescu - Change Detection in Signals Using Cepstral Distance
- 216-3 - A. Grzybowski - Simulation Analysis of some Regression Estimators Incorporating Prior Information - Performance for Different Loss Functions
- 216-4 - P. Kulczycki - A Statistical Fault Detection System
- 216-5 - M. Ya. Postan - Theory of Stochastic Storage Networks: Present State and Perspectives
- 216-7 - Mike Pearson - The Incorporation of Target Performance Measures in Inventory Allocation
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