

Sunday, August 20	
08:30 - 09:30 Registration	
Plenary Session	
Lecture Hall A	
09:30 - 09:45 Opening	
Chairman	K. Sabelfeld
09:45 - 10:30	V. Thomee, <i>Maximum-Norm Stability in Parabolic Finite Element Equations</i>
Coffee break	
Chairman	R. Lazarov
11:00 - 11:45	R. Herbin, <i>On the Discretization of the Coupled Heat and Electrical Diffusion Problems</i>
11:45 - 12:30	J. Bramble, J. Pasciak, <i>Analysis of a Finite PML Approximation for the Three Dimensional Time-Harmonic Maxwell and Acoustic Scattering Problems</i>
Lunch break	
Parallel Sessions	
Lecture Hall A	
<u>14:30 - 15:40</u> Special Session on "Numerical Methods for Hyperbolic Problems"	
Chairman	B. Popov
14:30 - 15:00	A. Schroll, <i>The Art of Reconstruction: High Accuracy on Small Stencils</i>
15:00 - 15:20	J. Geiser, <i>Weighted Iterative Operator-Splitting Methods: Stability-Theory</i>
15:20 - 15:40	Ch. Kravvaritis, <i>Weighted Iterative Operator-Splitting Methods and Applications in Transport-Reaction-Equations</i>
Lecture Hall B	
<u>14:30 - 15:50</u> Contributed Talks	
Chairman	P. Vabishchevich
14:30 - 14:50	O. Iliev, K. Steiner, A. Latz, A. Wiegmann, <i>On Numerical Simulation of Industrial Filtration Processes and Related Problems</i>
14:50 - 15:10	J.H. Park, J. Park, K. Park, S. Ok, <i>Analysis of Soil-Structure Interaction Considering Complicated Soil Profile</i>
15:10 - 15:30	A. Liolios, S. Radev, T. Angelov, <i>A Numerical Approach to the Dynamic Unilateral Contact Problem of Soil-Pile Interaction in the Presence of Instabilizing Effects</i>

15:30 - 15:50	S. Radev, K. Nachev, F. Onofri, L. Tadrist, A. Liolios, <i>Numerical Analysis of the Sinuous Instability of a Viscous Capillary Jet Flowing Down an Immiscible Nonviscous Fluid</i>
Coffee break	
Lecture Hall A	
16:20 - 17:20 <i>Special Session on "Numerical Methods for Hyperbolic Problems"</i>	
Chairman	A. Schroll
16:20 - 16:40	I. Christov, <i>On the Application of Godunov-type Schemes to Conservation Laws Arising from the Equations of Nonlinear Acoustics</i>
16:40 - 17:00	B. Popov, P. Popov, <i>A Third Order Scheme for Hamilton-Jacobi Equations on Triangular Grids</i>
17:00 - 17:20	J. Guermond, B. Popov, <i>L_1 Approximations of Hamilton-Jacobi Equations</i>
Lecture Hall B	
16:20 - 18:00 <i>Contributed Talks</i>	
Chairman	A. Popov
16:20 - 16:40	V. Behar, L. Doukovska, C. Kabakchiev, <i>Target Detection and Parameter Estimation using the Hough Transform</i>
16:40 - 17:00	N. Elkin, A. Napartovich, D. Vysotsky, V. Troshchieva, <i>Round-trip Operator Technique Adapter for Optical Resonators with Dispersion Elements</i>
17:00 - 17:20	I. Garvanov, C. Kabakchiev, H. Rohling, <i>Detection Acceleration in Hough Parameter Space by K-stage Detector</i>
17:20 - 17:40	E. Gershikov, M. Porat, <i>Data Compression of Color Images using a Probabilistic Linear Transform Approach</i>
17:40 - 18:00	P. Konstantinova, D. Adam, D. Angelova, V. Behar, <i>Contour Determination in Ultrasound Medical Images Using Interacting Multiple Model Probabilistic Data Association Filter</i>
20:00	RECEPTION
Monday, August 21	
Plenary Session	
Lecture Hall A	
Chairman	D. Braess
09:00 - 09:45	R. Lazarov, <i>Discontinuous Galerkin FEM for Second Order Elliptic Problems and Their Preconditioning</i>
09:45 - 10:30	S. Margenov, <i>Robust Multilevel Preconditioning Methods</i>
Coffee break	

Parallel Sessions	
Lecture Hall A	
11:00 - 12:20 Special Session on "Monte Carlo and Quasi-Monte Carlo for Diverse Applications"	
Chairman	T. Gurov
11:00 - 11:30	N. Simonov, <i>Random Walks for Solving Boundary-Value Problems with Flux Conditions</i>
11:30 - 12:00	<u>I. Dimov</u> , E. Atanassov, <i>Exact Error Estimates and Optimal Randomized Algorithms for Integration</i>
12:00 - 12:20	<u>A. Karaivanova</u> , H. Chi, T. Gurov, <i>Quasi-Random Walks on Balls Using C.U.D.</i>
Lecture Hall B	
11:00 - 12:20 Contributed Talks	
Chairman	N. Kolkovska
11:00 - 11:20	P. Binev, <i>On the Adaptive Strategies in Finite Element Methods</i>
11:20 - 11:40	N. Petrovskaya, <i>Solution Limiters and Flux Limiters in High Order Discontinuous Galerkin Schemes</i>
11:40 - 12:00	A. Andreev, <u>M. Racheva</u> , <i>On the Numerical Solutions of Eigenvalue Problems in Unbounded Domains</i>
12:00 - 12:20	P. Ralek, <i>FEM Modelling of Resonance Frequencies of Plan-parallel Piezoelectric Resonator</i>
Lecture Hall C	
11:00 - 12:10 Special Session on "Metaheuristics for Optimization Problems"	
Chairman	St. Fidanova
11:00 - 11:30	E. Alba, <i>Parallel Metaheuristics for Optimization</i>
11:30 - 11:50	M. Abellans, E. Alba, <u>S. Canales</u> , G. Hernández, <i>Solving the Illumination Problem with Heuristics</i>
11:50 - 12:10	<u>M. Nikolov</u> , V. Behar, <i>Sparse Array Optimization by Using a Simulated Annealing Algorithm</i>
Lunch break	
Parallel Sessions	
Lecture Hall A	
14:30 - 15:50 Special Session on "Monte Carlo and Quasi-Monte Carlo for Diverse Applications"	
Chairman	A. Karaivanova
14:30 - 14:50	<u>D. Vasileska</u> , S. Krishnan, M. Fischetti, <i>Examining Performance Enhancement of p-Channel Strained-SiGe MOSFET Devices Using Recently Developed Full-Band Monte Carlo Device Simulator</i>

14:50 - 15:10	S. Vitanov, M. Nedjalkov, V. Palankovski, <i>A Monte Carlo Model of Piezoelectric Scattering in GaN</i>
15:10 - 15:30	E. Atanassov, T. Gurov, A. Karaivanova, M. Nedjalkov, <i>Monte Carlo Grid Application for Electron Transport</i>
15:30 - 15:50	T. Gurov, E. Atanassov, S. Ivanovska, <i>A Hybrid Monte Carlo Method for Simulation of Quantum Transport</i>
14:30 - 16:00 Special Session on "Robust Preconditioning Solution Methods"	
Chairman	S. Margenov
14:30 - 15:00	I. Georgiev, J. Kraus, S. Margenov, <i>Multilevel Preconditioning of 2D Rannacher-Turek FE Problems; Additive and Multiplicative Methods</i>
15:00 - 15:20	S. Margenov, J. Synka, <i>Improved Aggregation-Based Multilevel Preconditioning of Crouzeix-Raviart FEM Elliptic Problems</i>
15:20 - 15:40	I. Georgiev, J. Kraus, S. Margenov, J. Schicho, <i>Locally Optimized MIC(0) Preconditioning of Rotated Trilinear Non-conforming FEM Problems</i>
15:40 - 16:00	T. Kurics, J. Karátson, I. Lirkov, <i>Parallel Algorithm for Systems of Convection-Diffusion Equations</i>
14:30 - 15:50 Special Session on "Metaheuristics for Optimization Problems"	
Chairman	S. Canales
14:30 - 14:50	E. Alba, G. Molina, J. Chicano, <i>Optimal Placement of Antennae Using Metaheuristics</i>
14:50 - 15:10	F. Wysocka-Schillak, <i>Design of Equiripple Linear-Phase 2-D FIR Digital Filters Using Genetic Algorithm</i>
15:10 - 15:30	O. Roeva, <i>Multipopulation Genetic Algorithms: A Tool for Parameter Optimization of Cultivation Processes Models</i>
15:30 - 15:50	M.-C. Riff, T. Alfaro, X. Bonnaire, C. Grandón, <i>EA-MP: An Evolutionary Algorithm for a Mine Planning Problem</i>
Coffee break	
Lecture Hall A	
16:20 - 18:00 Special Session on "Interpolation and Quadrature Processes"	
Chairman	G. Milovanović
16:20 - 16:50	G. Mastroianni, G. Milovanović, <i>Fredholm Integral Equations on Unbounded Intervals: Some Numerical Methods</i>
16:50 - 17:10	L. Hacia, <i>Iterative-Collocation Method for Integral Equations of Heat Conduction Problems</i>
17:10 - 17:30	L. Milev, <i>Numerical computation of the Markov factors for the systems $\{e^{-x^2}x^k\}_{k=0}^n$ and $\{e^{-x}x^k\}_{k=0}^n$</i>

17:30 - 17:50	N. Naidenov, <i>On the calculation of the Bernstein-Szegő factor for multivariate polynomials</i>
Lecture Hall B	
16:20 - 18:00 <i>Special Session on "Robust Preconditioning Solution Methods"</i>	
Chairman	J. Kraus
16:20 - 16:40	<u>D. Lukáš</u> , Z. Dostál, <i>Multigrid Preconditioned Semimonotonic Augmented Lagrangians for the Stokes and Optimization Problems</i>
16:40 - 17:00	F. Okulicka-Dluzewska, <i>Solving Coupled Consolidation Equations</i>
17:00 - 17:20	<u>N. Kosturski</u> , S. Margenov, <i>Comparative Analysis of Mesh Generators and MIC(0) Preconditioning of FEM Elasticity Systems</i>
17:20 - 17:40	R. Blaheta, P. Byczanski, <u>J. Stary</u> , R. Kohut, <i>Parallel Schwarz Methods for T-H-M Modelling</i>
17:40 - 18:00	Y. Vutov, <i>Parallel Incomplete Factorization of 3D NC FEM Elliptic Systems</i>
Lecture Hall C	
16:20 - 18:00 <i>Special Session on "Large-Scale Computations in Environmental Modelling"</i>	
Chairman	P. Thomsen
16:20 - 16:40	<u>A. Bourchtein</u> , L. Bourchtein, M. Naumov , <i>Stability of Semi-Implicit Atmospheric Models with Respect to the Reference Temperature Profile</i>
16:40 - 17:00	G. Dimitriu, <i>Numerical Experiments on Information Content of Observations in 4D-Var Assimilation Procedures</i>
17:00 - 17:20	I. Farago, <i>New Parallel Operator Splitting Method and Its Analysis</i>
17:20 - 17:40	K. Georgiev, <i>On an Implementation of the TM5 Global Model on a Cluster of Workstations</i>
17:40 - 18:00	R. Horvath, <i>On the Sign-stability of the Numerical Solutions of 1D Parabolic Problems</i>
After Dinner Lecture	
Lecture Hall A	
20:00 - 21:00	<u>E. Atanassov</u> , T. Gurov, A. Karaivanova, <i>Bulgarian Involvement in European Grid Initiatives</i>

Tuesday, August 22	
Parallel Sessions	
Lecture Hall A	
08:30 - 09:50 Contributed Talks	
Chairman	O. Iliev
08:30 - 08:50	<u>O. Shishkina</u> , C. Wagner, <i>Simulation of Turbulent Thermal Convection Using Finite Volumes</i>
08:50 - 09:10	J.Rimshans, <i>A Propagator Method for Numerical Solution 2D Parabolic Equations</i>
09:10 - 09:30	N. Kolkovska, <i>Numerical Solution of an Elliptic Problem with Non-Classical Boundary Condition</i>
09:30 - 09:50	T. Chernogorova, O. Iliev, <i>On Finite Volume Discretization of Elliptic Interface Problems with Imperfect Contact</i>
Lecture Hall B	
08:30 - 09:50 Contributed Talks	
Chairman	M. Krastanov
08:30 - 08:50	F. Coutelieris, <i>A New Iterative Algorithm for the Numerical Solution of Transport Problems in Various Geometries</i>
08:50 - 09:10	M. Ragulskis, <u>R. Saunoriene</u> , <i>Order Adaptive Quadrature Rule for Real Time Holography Applications</i>
09:10 - 09:30	P. Petkov, <u>N. Christov</u> , M. Konstantinov , <i>Numerical Method for Regional Pole Assignment of Linear Control Systems</i>
09:30 - 09:50	P. Petkov, <u>M. Konstantinov</u> , N. Christov, <i>LAPACK-based Condition and Error Estimators for LQG Design</i>
Lecture Hall C	
08:30 - 09:50 Contributed Talks	
Chairman	I. Lirkov
08:30 - 08:50	I. Ivanov, <i>Properties of the Lyapunov iteration for Coupled Riccati Equations in Jump Linear Systems</i>
08:50 - 09:10	T. Boyadjiev, <i>Numerical Modeling of Critical Dependences in Josephson Junctions of Variable Width</i>
09:10 - 09:30	Y. Kyosev, <u>M. Todorov</u> , <i>Computational Model of 1D Continuum Motion. Case of Textile Yarn Unwinding without Air Resistance</i>
09:30 - 09:50	N. Gasilov, <i>A Method for Calculating Active Feedback System to Control Vertical Position of Plasma in a Tokamak</i> (poster)
Coffee break	

Lecture Hall A	
10:20 - 12:00	<i>Special Session on "Monte Carlo and Quasi-Monte Carlo for Diverse Applications"</i>
Chairman	I. Dimov
10:20 - 10:40	<u>C. Resteanu</u> , M. Somodi, <i>On the Exams of a Multi-Attribute Decision Making E-Course</i>
10:40 - 11:00	I. Dimov, A. Penzov, S. Stoilova, <i>Parallel Monte Carlo Sampling Scheme for Sphere and Hemisphere</i>
11:00 - 11:20	I. Dimov, <u>A. Penzov</u> , S. Stoilova, <i>Parallel Monte Carlo Approach for Integration of the Rendering Equation</i>
11:20 - 11:40	<u>I. Ourdev</u> , S. AbouRizk, M. Al-Bataineh, <i>Monte Carlo Simulation and Real Option Valuation of Power Generation Units</i>
11:40 - 12:00	D. Angelova, L. Mihaylova, <i>Extended Object Tracking using Monte Carlo Techniques</i>
Lecture Hall B	
10:20 - 11:40	<i>Contributed Talks</i>
Chairman	O. Shishkina
10:20 - 10:40	S. Dimova, <i>Discrete Methods Based on the Invariant Properties of the Continuous Models</i>
10:40 - 11:00	E. Serban, <i>Numerical Algorithm for Non-linear System Identification Based on Wavelet Transform</i>
11:00 - 11:20	B. Stanchev, <i>Multiresolution Triangulation of Surfaces Presented by Sets of 3D Points</i>
11:20 - 11:40	<u>V. Slavov</u> , S. Dimova, <i>Phase Field Versus Level Set Method for 2D Dendritic Growth</i>
Lecture Hall C	
10:20 - 11:40	<i>Special Session on "Interpolation and Quadrature Processes"</i>
Chairman	G. Mastroianni
10:20 - 10:40	G. Nikolov, <i>Closed Type "Formulae" for Calculation of Normal Probability</i>
10:40 - 11:00	D. Simian, <u>C. Simian</u> , <i>On a Quadrature Formula Based on Interpolating Polynomials</i>
11:00 - 11:20	<u>D. Simian</u> , C. Simian, <i>Algorithmic and Computational Aspects of a Quadrature Formula</i>
Lunch break	
13:00 - 19:00	EXCURSION

Wednesday, August 23	
Plenary Session	
Lecture Hall A	
Chairman	J. Pasciak
09:00 - 09:45	K. Sabelfeld, <i>Random Walk on Fixed Spheres for PDEs</i>
09:45 - 10:30	D. Braess, <i>A Posteriori Error Estimates without Generic Constants</i>
Coffee break	
Parallel Sessions	
Lecture Hall A	
11:00 - 12:20	<i>Special Session on "Metaheuristics for Optimization Problems"</i>
Chairman	E. Alba
11:00 - 11:20	S. Fidanova, <i>Hybrid Heuristic Algorithms for GPS Surveying Problem</i>
11:20 - 11:40	P. Repoussis, Ch. Tarantilis, G. Ioannou, <i>A Hybrid Metaheuristic for a Real Life Vehicle Routing Problem</i>
11:40 - 12:00	B. Bilgen, I. Ozkarahan, <i>A Heuristic Algorithm for the Distribution Planing Problem</i>
12:00 - 12:20	F. Hembecker, H. Lopes, W. Godoy Jr., <i>Particle Swarm Optimization for the Multidimensional Knapsack Problem</i>
Lecture Hall B	
11:00 - 12:30	<i>Special Session on "Uncertain/Control Systems and Reliable Numerics"</i>
Chairman	S. Markov
11:00 - 11:30	I. Chryssoverghi, <i>Mixed Discretization-Optimization Methods for Nonlinear Elliptic Optimal Control Problems</i>
11:30 - 11:50	M. Krastanov, <i>Lie Brackets and Stabilizing Feedback Controls</i>
11:50 - 12:10	R. Rozenov, M. Krastanov, <i>Stackelberg Differential Games and Optimal Tax Policy</i>
12:10 - 12:30	Tz. Donchev, <i>Discrete Approximations of Singularly Perturbed Systems</i>
Lecture Hall C	
11:00 - 12:00	<i>Contributed Talks</i>
Chairman	T. Boyadjiev
11:00 - 11:20	I. Antal, <i>Mesh Independent Superlinear Convergence of an Inner-outer Iterative Method for Semilinear Elliptic Systems</i>
11:20 - 11:40	S. Bordas, R. Hoppe, S. Petrova, <i>Mechanical Failure in Microstructural Heterogeneous Materials</i>
11:40 - 12:00	O. Iliev, D. Vasileva, <i>On a Local Refinement Solver for Coupled Flow in Plain and Porous Media</i>

Lunch break	
Lecture Hall A	
14:30 - 15:50 Contributed Talks	
Chairman	T. Chernogorova
14:30 - 14:50	B. Jovanovic, L. Vulkov, <i>Difference Schemes for Parabolic Problems with Interfaces</i>
14:50 - 15:10	B. Jovanovic, M. Koleva, L. Vulkov, <i>Numerical Analysis of Blow-Up Weak Solutions to Semilinear Hyperbolic Equations</i>
15:10 - 15:30	N. Apreutesei, <i>Approximation of Second Order Evolution Equations by Internal Schemes of Approximation</i>
15:30 - 15:50	J. Kandilarov, <i>A Monotone Iterative Method for Numerical Solution of Diffusion Equations with Nonlinear Localized Chemical Reactions</i>
Lecture Hall B	
14:30 - 15:50 Special Session on "Uncertain/Control Systems and Reliable Numerics"	
Chairman	R. Alt
14:30 - 14:50	A. Goldsztejn, G. Chabert, <i>A Generalized Interval Genuine LU - Decomposition</i>
14:50 - 15:10	I. Skalna, <i>Evolutionary Optimization of the Inner Solution of the Parametrized Linear Systems</i>
15:10 - 15:30	E. Popova, <i>Solving Linear Systems whose Input Data are Rational Functions of Interval Parameters</i>
15:30 - 15:50	R. Anguelov, S. Markov, <i>Numerical Computations with Hausdorff Continuous Functions</i>
Lecture Hall A	
16:20 - 17:30 Special Session on "Interpolation and Quadrature Processes"	
Chairman	G. Nikolov
16:20 - 16:50	B. Boyanov, <i>Interval Quadrature Formulae</i>
16:50 - 17:10	G. Milovanović, A. Cvetković, Z. Marjanović, <i>Connection of Semi-Integer Trigonometric Orthogonal Polynomials with Szegő Polynomials</i>
17:10 - 17:30	G. Milovanović, A. Cvetković, M. Stanić, <i>Trigonometric Orthogonal Systems and Quadrature Formulae with Maximal Trigonometric Degree of Exactness</i>
Lecture Hall B	
16:20 - 17:50 Special Session on "Control/Uncertain Systems and Validated Numerics"	
Chairman	I. Chryssoverghi
16:20 - 16:50	M. Kanno, H. Anai, K. Yokoyama, <i>On the Relationship between the Sum of Roots with Positive Real Part and Polynomial Spectral Factorization</i>

16:50 - 17:10	N. Dimitrova, P. Zlateva, <i>Stability and Bifurcation Analysis of Nonlinear Models of Bioreactor</i>
17:10 - 17:30	A. Popov, <i>Interval Based Morphological Colour Image Processing</i>
17:30 - 17:50	R. Alt, <i>A Simple and Efficient Algorithm for Eigenvalues Computation</i>
Lecture Hall C	
16:20 - 18:00 <i>Special Session on "Large-Scale Computations in Environmental Modelling"</i>	
Chairman	K. Georgiev
16:20 - 16:40	C. Mensink, F. Deutsch, L. Janssen, R. Torfs, J. Vankerkom, <i>Comprehensive Modelling of PM10 and PM2.5 Scenarios for Belgium and Europe in 2010</i>
16:40 - 17:00	Tz. Ostromsky, Z. Zlatev, <i>Parallel and GRID Implementation of a Large Scale Air Pollution Model</i>
17:00 - 17:20	M. Prodanova, J. Perez, D. Syrakov, R. San Jose, K. Ganev, N. Miloshev, S. Roglev, <i>Simulation of an Extreme Air Pollution Episode in the city of Stara Zagora, Bulgaria</i>
17:20 - 17:40	P. Thomsen, Z. Zlatev, <i>Studying the Properties of Variational Data Assimilation Methods by Applying a Set of Test-Examples</i>
17:40 - 18:00	A. P. Sapozhnikov, A. A. Sapozhnikov, T. Sapozhnikova, <i>Re-Engineering Technology and Software Tools for Distributed Computation Using LAN</i>
19:30 CONFERENCE DINNER	
Thursday, August 24	
Plenary Session	
Lecture Hall A	
Chairman	V. Thomee
09:00 - 09:45	G. Milovanovic, <i>Quadrature for Müntz Systems</i>
09:45 - 10:30	P. Vabishchevich, <i>The Vector Analysis Grid Operators for Applied Problems</i>
Coffee break	
Chairman	S. Dimova
11:00 - 11:45	Z. Zlatev, <i>On Some Computational Aspects of the Variational Data Assimilation Techniques</i>
11:45 - 12:00	Closing
Lunch break	
13:00 DEPARTURE	