

Monday, June 6, Plenary Talks	
Lecture Hall A	
09:00 - 09:15	Opening
Chairman	U. Langer
09:15 - 09:50	S. Brenner, <i>Additive Multigrid Theory</i>
09:50 - 10:25	C. Carstensen, <i>Review on the Convergence of Adaptive Finite Element Methods</i>
Coffee break	
Chairman	S. Heinrich
10:50 - 11:25	J. Waśniewski, <i>New Data Storage Formats for Dense Matrices Lead to Variety of High-Performance Algorithms</i>
11:25 - 12:00	Z. Zlatev, <i>Parallel Treatment of General Sparse Matrices</i>
Lunch break	
Monday, June 6, Parallel Sessions	
Lecture Hall B	
14:00 - 18:10	<i>Special Session on "Numerical Methods for the Schrödinger Equation and application"</i>
Chairman	H. Kosina
14:00 - 14:35	<u>A. Trellakis</u> , T. Andlauer, P. Vogl, <i>Efficient Solution of the Schrödinger Equation in Semiconductor Device Simulations</i>
14:35 - 15:00	<u>S. Rotter</u> , B. Weingartner, F. Libisch, F. Aigner, J. Feist, J. Burgdörfer, <i>A Modular Method for the Efficient Calculation of Ballistic Transport through Quantum Billiards</i>
15:00 - 15:25	<u>M. Karner</u> , A. Gehring, S. Holzer, H. Kosina, <i>On the Efficient Calculation of Quasi-Bound States for the Simulation of Direct Tunneling</i>
15:25 - 15:50	<u>M. Pourfath</u> , W.J. Park, H. Kosina, S. Selberherr, <i>Fast Convergent Schrödinger-Poisson Solver for the Static and Dynamic Analysis of Carbon Nanotube Field Effect Transistors</i>
Coffee break	
Chairman	S. Rotter
16:30 - 16:55	W. N. Gansterer, <u>W. Kreuzer</u> , H. Lischka, <i>Data Reduction in MRCI</i>
16:55 - 17:20	H. Dachsels, <i>The Continuous Fast Multipole Method</i>
17:20 - 17:45	<u>S. R. Clark</u> , D. Jaksch, <i>Efficient Dynamical Simulation of Strongly Correlated 1D Quantum Systems</i>
17:45 - 18:10	<u>H. Kosina</u> , V. Sverdlov, C. Ringhofer, M. Nedjalkov, S. Selberherr, <i>Quantum Correction to the Semiclassical Electron-Phonon Scattering Operator</i>

Monday, June 6, Parallel Sessions	
Lecture Hall C	
<u>14:00 - 17:20</u>	<i>Special Session on "Robust Algebraic Multigrid and Hierarchical Preconditioning Methods"</i>
Chairman	R. Blaheta
14:00 - 14:25	R. Falgout, P. Vassilevski, <i>Improving the Predictive Properties of Compatible Relaxation</i>
14:25 - 14:50	L. Zikatanov, <i>Algebraic Multilevel Preconditioner based on Matching in Graphs</i>
14:50 - 15:15	J. Kraus, <i>Algebraic MultiGrid Based on Computational Molecules (AMGm): 2. Elliptic Systems of Partial Differential Equations (PDEs)</i>
15:15 - 15:40	P. Arbenz, <i>On the Preconditioned Conjugate Gradient Method for Saddle Point Problems</i>
15:40 - 16:05	G. Haase, <i>Algebraic Multigrid in a Medical Source Identification Problem</i>
Coffee break	
Chairman	S. Margenov
16:30 - 16:55	E. Bängtsson, M. Neytcheva, <i>An Agglomerate Multilevel Preconditioner for Nonsymmetric Saddle Point Problems</i>
16:55 - 17:20	U. Langer, <u>D. Pusch</u> , <i>Data-sparse Algebraic and Geometric Multigrid Methods for Boundary Element Equations</i>
<u>17:20 - 18:35</u>	<i>Contributed Talks</i>
Chairman	P. Arbenz
17:20 - 17:45	<u>D. Vasileva</u> , A. Kuut, P. W. Hemker, <i>An Adaptive Multigrid Strategy for Convection-Diffusion Problems</i>
17:45 - 18:10	T. Kurics, <i>Superlinear PCG Algorithms via Symmetric Part Preconditioning for Mixed Elliptic BVPs</i>
18:10 - 18:35	<u>M. Neytcheva</u> , E. Bängtsson, K. Karlsson, <i>Robust Iterative Solution Methods for Visco-Elastic Problems</i>
20:00	RECEPTION

Tuesday, June 7, Parallel Sessions	
Lecture Hall B	
<u>08:30 - 12:40</u>	<i>Special Session on "Operator Splitting, their Application and Realization"</i>
Chairman	I. Farago
08:30 - 08:55	<u>Z. Zlatev</u> , J. Brandt, <i>Testing Modules Performing Variational Data Assimilation</i>
08:55 - 09:20	G. Dimitriu, <i>Adjoint Computations in Data Assimilation Problems Using a 4-Stage Rosenbrock Method</i>
09:20 - 09:45	Á. Havasi, <i>Applying Operator Splitting in the Linearized Shallow Water Equations</i>
09:45 - 10:10	<u>R. Horváth</u> , C. Péterfalvi, <i>Operator Splittings for the Numerical Solution of the Maxwell Equations</i>
Coffee break	
Chairman	Z. Zlatev
10:35 - 11:00	I. Faragó , <i>Operator Splittings and the Numerical Methods</i>
11:00 - 11:25	P. Csomós, <i>Operator Splitting Procedures for Air Pollution Transport Models</i>
11:25 - 11:50	<u>C. Christov</u> , X. Tang, <i>Splitting Methods for Bi-Harmonic Problems and Navier-Stokes Equations</i>
11:50 - 12:15	T. Marinov, <u>R. Marinova</u> , C. Christov, <i>Coefficient Identification in Elliptic Partial Differential Equation</i>
12:15 - 12:40	B. Minchev, <i>Integrating Factor Methods as Exponential Integrators</i>
Lecture Hall C	
<u>08:30 - 10:05</u>	<i>Special Session on "Monte Carlo: Tools, Applications, Distributed Computing"</i>
Chairman	T. Gurov
08:30 - 09:05	A. Asenov, <i>Monte Carlo Simulation of Nano-transistors and Giga Circuits on HPC</i>
09:05 - 09:25	<u>M. Nedjalkov</u> , T. Gurov, H. Kosina, D. Vasileska, V. Palankovski, <i>Femtosecond Evolution of Spatially Inhomogeneous Carrier Excitations: Part I: Kinetic Approach</i>
09:25 - 09:45	T. Gurov, <u>E. Atanasov</u> , I. Dimov, V. Palankovski, S. Smirnov, <i>Femtosecond Evolution of Spatially Inhomogeneous Carrier Excitations: Part II: Stochastic Approach and GRID Implementation</i>
09:45 - 10:05	<u>K. Szeto</u> , Z. Jian, <i>Adaptive Quasi-Parallel Genetic Algorithm: Application to Low-Dimensional Physics</i>
Coffee break	
<u>10:35 - 12:15</u>	<i>Contributed Talks</i>
Chairwoman	M. Neytcheva
10:35 - 11:00	<u>A. Andreev</u> , R. Lazarov, M. Racheva, <i>An Improved Accuracy Version of the Lowest-Order Mixed Finite Element Method for Biharmonic Eigenvalues</i>
11:00 - 11:25	<u>V. Baryamureeba</u> , T. Steihaug, <i>On the Convergence of an Inexact Primal-Dual Interior Point Method for Linear Programming</i>
11:25 - 11:50	<u>I. Markovsky</u> , S. Van Huffel, <i>Structured Weighted Total Least Squares</i>
11:50 - 12:15	<u>I. Georgiev</u> , S. Margenov, <i>Element Preconditioning Technique for Rotated Trilinear FEM Elliptic Systems</i>
Lunch break	

Tuesday, June 7, Parallel Sessions	
Lecture Hall B	
14:00 - 19:00	<i>Special Session on "Control/Uncertain Systems and Validated Numerics"</i>
Chairman	V. Veliov
14:00 - 14:25	<u>F. Chernousko</u> , A. Ovseevich, Yu. Tarabanko, <i>Comparison of Interval and Ellipsoidal Error Estimation for Vector Operations</i>
14:25 - 14:50	<u>R. Alt</u> , J.-L. Lamotte, S. Markov, <i>Numerical Study of Algebraic Solutions to Linear Problems Involving Stochastic Parameters</i>
14:50 - 15:15	R. Anguelov, <u>S. Markov</u> , Bl. Sendov, <i>On the Normed Linear Space of Hausdorff Continuous Functions</i>
15:15 - 15:40	<u>M. Konstantinov</u> , P. Petkov, <i>Perturbation Bounds for H_∞ Control and Estimation Problems</i>
15:40 - 16:05	E. Popova, <i>Improved Solution Enclosures for Over- and Underdetermined Interval Linear Systems</i>
16:05 - 16:30	A. Marquardt, <i>Rigorous Numerical Enclosures for Controlled Initial Value Problems</i>
Coffee break	
Chairman	M. Konstantinov
16:55 - 17:20	I. Chrysosoverghi, <i>Approximate Gradient/Penalty Methods with General Discretization Schemes for Optimal Control Problems</i>
17:20 - 17:45	U. Felgenhauer, <i>Sensitivity Approaches for Bang-Bang Optimal Controls</i>
17:45 - 18:10	S. Rigal, <i>Robust Attainability of a Closed Set for Nonlinear Systems with Imperfect Initial State Information</i>
18:10 - 18:35	<u>W. Schmidt</u> , Greifswald, <i>Numerical Methods for Optimal Control Problems with ODE and Integral Equations</i>
18:35 - 19:00	E. Kostina, <i>Computing Constrained Optimal Feedback Controls in Real-Time for Processes Governed by Large DAE Systems</i>
Lecture Hall C	
14:00 - 16:30	<i>Special Session on "Advances in Computational Mechanics"</i>
Chairwoman	S. Brenner
14:00 - 14:25	<u>B. Wohlmuth</u> , B. Lamichhane, <i>A Family of p Order Biorthogonal Mortar Finite Elements and Applications to Non-linear Mechanics</i>
14:25 - 14:50	K. Adolfsson, M. Enelund, S. Larsson, <u>M. Racheva</u> , <i>Discretization of Integro-Differential Equations Modelling Dynamic Fractional Order Viscoelasticity</i>
14:50 - 15:15	N. Popović, <u>D. Praetorius</u> , <i>\mathcal{H}-Matrix Techniques for Stray-Field Computations in Computational Micromagnetics</i>
15:15 - 15:40	M. Jensen, <i>hp-Discontinuous Galerkin Methods for Friedrichs Systems</i>
15:40 - 16:05	S. Funken, <i>Can Averaging Techniques be Reliable for Oscillating Data?</i>
16:05 - 16:30	S. Bartels, <i>Approximation of Harmonic Maps – Gradient Flow Approaches vs. Iterative Minimization</i>
Coffee break	
16:55 - 18:35	<i>Special Session on "Multi Scale and Multi Physics Computations"</i>
Chairman	R. Lazarov
16:55 - 17:45	M. Gunzburger, <i>Reduced-Order Modeling for Complex Systems</i>
17:45 - 18:10	<u>P. Bochev</u> , T. Hughes, G. Scovazzi, <i>A Multiscale Discontinuous Galerkin Method</i>
18:10 - 18:35	A. Abdulle, <i>Numerical Methods for Multiscale Transport Problems in Micro-Array</i>
Dinner break	

Tuesday, June 7, After Dinner Session	
Lecture Hall C	
20:00 - 21:30	<i>"Bulgarian Involvement in European Grid Initiatives" - presentation & discussion</i>
Wednesday, June 8, Plenary Talks	
Lecture Hall A	
Chairman	C. Carstensen
09:00 - 09:35	O. Axelsson, <i>Eigenvalue estimates for preconditioned saddle point matrices</i>
09:35 - 10:10	S. Heinrich, <i>Numerical Analysis on a Quantum Computer</i>
Coffee break	
Chairman	O. Axelsson
10:40 - 11:15	R. Lazarov, <i>Discontinuous Galerkin method as stabilization technique for nonconforming finite element approximations of PDEs</i>
11:15 - 11:50	U. Langer, <i>Inexact Date-Sparse Boundary and Finite Element Domain Decomposition Methods</i>
11:50 - 12:25	R. Blaheta, <i>Algebraic Multilevel Methods with Aggregations</i>
Lunch break	
14:00 - 19:00	EXCURSION
Thursday, June 9, Parallel Sessions	
Lecture Hall B	
08:30 - 10:35	<i>Special Session on "Environmental Modelling"</i>
Chairman	Z. Zlatev
08:30 - 08:55	<u>A. Ebel</u> , M. Memmesheimer, E. Friese, H. Jakobs, <i>Long-term Atmospheric Aerosol Simulations Computational and Theoretical Challenges</i>
08:55 - 09:20	F. Deutsch, F. Lefebvre, L. Janssen, J. Vankerkom, <u>C. Mensink</u> , <i>Modelling Changes of Aerosol Compositions over Belgium and Europe</i>
09:20 - 09:45	<u>R. San José</u> , J. Pérez, R. González, <i>The Use of MM5-CMAQ for an Incinerator Air Quality Impact Assessment for Metals, PAH, Dioxins and Furans:Spain Case Study</i>
09:45 - 10:10	<u>A. Doroshenko</u> , V. Prusov, Y. Tyrchak, <i>High Performance Methods for Regional Weather Forecasting</i>
10:10 - 10:35	<u>H. Chervenkov</u> , D. Syrakov, M. Prodanova, <i>On the Sulphur Pollution over Balkan Region</i>
Coffee break	
10:35 - 12:40	<i>Special Session on "Control/Uncertain Systems and Validated Numerics"</i>
Chairman	I. Chrysosoverghi
10:35 - 11:00	<u>Ts. Tsachev</u> , D. Vasilev, <i>An Infinite Horizon Optimal Control Problem with Mixed Constraints and an Application</i>
11:00 - 11:25	<u>N. Dimitrova</u> , M. Krastanov, <i>Stabilization of a Nonlinear Wastewater Treatment Plants Model</i>
11:25 - 11:50	A. Stefański, J. Wojewoda, <u>T. Kapitaniak</u> , <i>Synchronization of Chaotic Systems with Diagonal Coupling</i>
11:50 - 12:15	M. Krastanov, <i>On the Synthesis of a Stabilizing Feedback Control</i>
12:15 - 12:40	E. Goncharova, <u>A. Ovseevich</u> , <i>Limit Shapes of Reachable Sets for Linear Control Systems</i>
Lunch break	

Thursday, June 9, Parallel Sessions	
Lecture Hall C	
08:30 - 12:40	<i>Special Session on "Distributed Numerical Methods and Algorithms for Grid Computing"</i>
Chairman	T. Sakurai
08:30 - 08:55	<u>D. Takahashi</u> , M. Sato, and T. Boku, <i>Computation of High-Precision Mathematical Constants in a Combined Cluster and Grid Environment</i>
08:55 - 09:20	S. Petiton, <u>L. Aouad</u> , L. Choy, <i>Peer to Peer Large Scale Linear Algebra Programming and Experimentations</i>
09:20 - 09:45	Y. Yamamoto, <i>An Efficient and Easily Parallelizable Algorithm for Pricing Weather Derivatives</i>
09:45 - 10:10	<u>S. Fidanova</u> , M. Durchova, <i>Ant Algorithm for Grid Scheduling Problem</i>
Coffee break	
Chairman	Y. Yamamoto
10:35 - 11:00	<u>T. Sakurai</u> , Y. Kodaki, H. Umeda, Y. Inadomi, T. Watanabe, U. Nagashima, <i>A Hybrid Parallel Method for Large Sparse Eigenvalue Problems on Grid Computing Environment using Ninf-G/MPI</i>
11:00 - 11:25	<u>S. Shahzadeh-Fazeli</u> , N. Emad, J. Dongarra, <i>Eigenvalue Computation with NetSolve Global Computing System</i>
11:25 - 11:50	<u>K. Naono</u> , T. Imamura, <i>An Evaluation towards Automatically Tuned Eigensolvers</i>
11:50 - 12:15	<u>T. Imamura</u> , K. Naono, <i>Automatic Tuning Technique Exploring within the Hardware-specific Constrained Parameters</i>
12:15 - 12:40	<u>I. Muni Toke</u> , J. Girard, <i>Monte Carlo Valuation of Multidimensional American Options through Grid Computing</i>
Lunch break	
Thursday, June 9, Parallel Sessions	
Lecture Hall B	
14:00 - 18:10	<i>Special Session on "Large Scale Computation of Engineering Problems"</i>
Chairman	R. Lehoucq
14:00 - 14:25	P. Binev, <i>Mathematical Learning of Large Point Clouds</i>
14:25 - 14:50	C. Veeramani, <u>P. Minev</u> , K. Nandakumar, <i>A Fictitious Domain Method for Particle Sedimentation</i>
14:50 - 15:15	J. Fröhlich, <u>J. Denev</u> , C. Hinterberger, H. Bockhorn, <i>On the Impact of Tangential Grid Refinement on Subgrid-scale Modelling in Large Eddy Simulation</i>
15:15 - 15:40	U. Hetmaniuk, <u>R. Lehoucq</u> , <i>Multilevel Methods for Eigenspace Computations in Structural Dynamics</i>
15:40 - 16:05	M. Koleva, <i>Numerical Solution of Parabolic Problems with Nonlinear Boundary Conditions on Unbounded Domains</i>
Coffee break	
Chairman	P. Minev
16:30 - 16:55	S. Ozalp, <i>A Genetic Algorithm for Scheduling of Jobs on Lines of Press Machines</i>
16:55 - 17:20	B. Ozalp, <u>A. Ozalp</u> , <i>A Computational Approach on the Multitask Optimization of Inclined Slider Bearing Performance with Upper-Surface-Waviness (USW)</i>
17:20 - 17:45	<u>F. Lowu</u> , V. Baryamureeba, <i>On Efficient Distribution of Data in Multicast Networks: QoS in Scalable Networks</i>
17:45 - 18:10	O. Iliev, A. Latz, <u>D. Niedziela</u> , V. Starikovicius, <i>Numerical Study of Preconditioners for Discretized Non-Newtonian Flow Equations</i>

Thursday, June 9, Parallel Sessions	
Lecture Hall C	
<u>14:00 - 16:10</u>	<i>Special Session on "Monte Carlo: Tools, Applications, Distributed Computing"</i>
Chairman	M. Nedjalkov
14:00 - 14:35	<u>P. Whitlock</u> , S. Vitiello, <i>Investigations of the solid phase of helium-4 using quantum Monte Carlo simulations</i>
14:35 - 15:10	<u>C. Jungemann</u> , B. Meinerzhagen, <i>Noise Calculation in the Semiclassical Framework: A Critical Analysis of the Monte Carlo Method and a Numerical Alternative</i>
15:10 - 15:30	<u>A. Karaivanova</u> , N. Simonov, <i>Quasi-Monte Carlo Methods for Investigating Electrostatic Properties of Organic Pollutant Molecules in Solvent</i>
15:30 - 15:50	<u>D. Yoshino</u> , H. Sagawa, <i>Monte Carlo Simulation of Spiral Galaxy Formation</i>
15:50 - 16:10	R. Papancheva, <i>Parallel Grid-Free Monte Carlo Algorithms for Boundary Value Problems</i>
Coffee break	
<u>16:30 - 19:00</u>	<i>Contributed Talks</i>
Chairman	J. Waśniewski
16:30 - 16:55	<u>D. Becker</u> , Ch. Thompson, <i>A Novel, Parallel PDE Solver for Unstructured Grids</i>
16:55 - 17:20	<u>G. Bencheva</u> , S. Margenov, J. Starý, <i>Parallel PCG Solver for Nonconforming FEM Problems: Overlapping of Communications and Computations</i>
17:20 - 17:45	<u>R. Kohut</u> , J. Starý, R. Blaheta, K. Krečmer, <i>Parallel Computing of Thermoelasticity Problems</i>
17:45 - 18:10	<u>I. Garvanov</u> , Ch. Kabakchiev, P. Daskalov, <i>Systolic Architecture for Adaptive Censoring CFAR PI Detector</i>
18:10 - 18:35	<u>J. Digalakis</u> , K. Margaritis, <i>Real Coded Parallel Memetic Algorithms on Messages Passing Clusters</i>
18:35 - 19:00	<u>V. Lazarov</u> , R. Iliev, <i>Supporting Dynamic Allocation of Concurrent Computations to Processing Nodes</i>
Lecture Hall D	
<u>16:30 - 18:00</u>	<i>Grid Help Desk and Demos</i>
20:00	CONFERENCE DINNER

Friday, June 10, Parallel Sessions	
Lecture Hall B	
08:30 - 10:35	<i>Special Session on "Control/Uncertain Systems and Validated Numerics"</i>
Chairman	F. Chernousko
08:30 - 08:55	G. Grammel, <i>On the Time-Discretization of Singularly Perturbed Uncertain Systems</i>
08:55 - 09:20	T. Donchev, <i>Approximation of the Solution Set of Optimal Control Problem</i>
09:20 - 09:45	T. Filippova, <i>Trajectory Tubes to Impulsive Control Systems</i>
09:45 - 10:10	<u>N. Pulova</u> , V. Pulov, <i>The Implicit Midpoint Rule for a Class of Convex Differential Inclusions</i>
10:10 - 10:35	V. Veliov, <i>On the Accuracy of Discretization of Bang-Bang Optimal Control Problems</i>
Lecture Hall C	
08:30 - 10:10	<i>Contributed Talks</i>
Chairman	G. Dimitriu
08:30 - 08:55	B. Kiss, <i>On the non Hierarchical Matrix Representation of the Negative, non Integer Order Sobolev Norms</i>
08:55 - 09:20	V. Makarov, <u>L. Demkiv</u> , <i>Considering of the Third Kind Conditions in Weight a Priori Estimates for Difference Schemes</i>
09:20 - 09:45	N. Atanasova, <u>I. Brayonov</u> , <i>Computation of Some Unsteady Flows Over Porous Semi-Infinite Flat Surface</i>
09:45 - 10:10	B. Jovanovic, <u>J. Kandilarov</u> , L. Vulkov, <i>On the Numerical Solution of Elliptic Equations in Arbitrary Two-Dimensional Domains</i>
Lunch break	
14:00	<i>DEPARTURE</i>