

**"PDE Methods in Applied Mathematics and Image Processing"
SCIENTIFIC PROGRAM**

Tuesday, September 7	
08:00 - 09:00	Registration
09:00 - 09:10	Opening
Chairman	B-W. Schulze
09:10 - 09:50	W. Haussmann <i>Canonical point sets in approximation by solutions of PDEs</i>
09:50 - 10:10	Coffee Break
10:10 - 10:40	H. Render <i>PDE-methods in multivariate spline analysis</i>
10:40 - 11:10	K. Alexiev, <u>O. Kounchev</u> , H. Render <i>Polyspline surfaces - a new tool in CAGD</i>
12:30 - 13:30	Lunch
Chairman	W. Madych
15:00 - 15:30	J. Klinkhammer <i>Canonical point sets for best one-sided L^1-approximation</i>
15:30 - 16:00	<u>N. Teofanov</u> , S. Pilipovic <i>Multiresolution expansions of tempered distributions</i>
16:00 - 16:30	O. Kounchev <i>Radial basis functions with fast multipole method versus polysplines for structured data</i>
16:30 - 17:00	Coffee Break
Chairman	Y. Notay
17:00 - 17:30	K. Steiner <i>Lattice-Boltzmann methods for complex fluids in complex structures</i>
17:30 - 18:00	H. Wendland <i>On the convergence of a general class of finite volume methods</i>
18:00 - 18:30	<u>O. Iliev</u> , M. Moog, D. Niedziela, V. Starikovicius <i>On the performance of certain iterative solvers for saddle point problems arising in discretization of non-Newtonian flow equations</i>
18:30 - 19:00	T. Zlatanovski <i>On the general solutions of the Brinkman and the Stokes stream function equation in spheroidal coordinates</i>
19:30 - 21:30	Dinner & RECEPTION

Wednesday, September 8	
Chairman	O. Kounchev
09:00 - 09:40	B-W. Schulze <i>Corner Sobolev spaces and asymptotics</i>
09:40 - 10:10	Coffee Break
10:10 - 10:40	S. Nicaise <i>A posteriori error estimations of some cell centered finite volume methods</i>
10:40 - 11:10	N. Tarkhanov <i>Small parameter in Bose systems</i>
12:30 - 13:30	Lunch
Chairman	W. Haussmann
15:00 - 15:30	M. Johnson <i>A symmetric colocation method with fast evaluation</i>
15:30 - 16:00	<u>M.J. Wilson</u> , M.I.G. Bloor <i>The use in various applications of an analytic solution method for the solution of the biharmonic problem</i>
16:00 - 16:30	<u>O. Kounchev</u> , D. Kalaglarski <i>Polysplines - a nonadaptive algorithm in image processing. Applications to astronomical images.</i>
16:30 - 17:00	Coffee Break
Chairman	H. Render
17:00 - 17:30	<u>H-J. Flad</u> , W. Hackbusch, H. Luo, D. Kolb <i>Wavelets in quantum chemistry</i>
17:30 - 18:00	N. Petkov <i>Non-classical receptive field inhibition and contour detection</i>
18:00 - 18:30	G. Dimitriu <i>Comparative numerical study to using TV regularization in image reconstruction</i>
18:30 - 19:00	D.T. Dimov <i>Harmonic and wavelet transform combination for fast content based image retrieval</i>
19:30 - 20:30	Dinner

Thursday, September 9	
Chairman	I. Dimov
09:00 - 09:40	V. Korneev <i>Schur complement preconditioning for highly orthotropic finite element problems</i>
09:40 - 10:10	Coffee Break
10:10 - 10:40	W. R. Madych <i>Second order elliptic boundary value problems: two variations</i>
10:40 - 11:10	<u>I. Anoufriev</u> , V. Korneev <i>Fast domain decomposition solver for internal problems of 3D hierarchical hp-FEM</i>
11:10 - 11:40	J. Stary <i>Schwarz-type methods and their application in geomechanics</i>
12:30 - 13:30	Lunch
15:00 - 18:00	Open Discussions
19:30 - 20:30	Dinner

Friday, September 10	
Chairman	S. Margenov
09:00 - 09:40	Z. Zlatev <i>Partitioning the chemical part of large air pollution models</i>
09:40 - 10:10	Coffee Break
10:10 - 10:40	<u>I. Dimov</u> , T. Ostromski, Z. Zlatev <i>Challenges in using splitting techniques for large-scale environmental modelling</i>
10:40 - 11:10	<u>K. Georgiev</u> , Z. Zlatev <i>On the domain decomposition approach in some convection-diffusion-reaction problems</i>
12:30 - 13:30	Lunch
Chairman	P. Arbenz
15:00 - 15:30	Y. Notay <i>Algebraic multilevel preconditioning and aggregation</i>
15:30 - 16:00	S. Margenov <i>Aggregation-based multilevel preconditioning of non-conforming FEM elasticity problems</i>
16:00 - 16:30	S. Beuchler <i>Multi-level preconditioners for the p-version of the finite element method</i>
16:30 - 17:00	Coffee Break
Chairman	Y. Notay
17:00 - 17:30	<u>P. Arbenz</u> , M. Bečka <i>On a parallel Maxwell eigensolver</i>
17:30 - 18:00	O. Axelsson, <u>J. Karatson</u> <i>A preconditioned iterative solution method for nonlinear elasticity systems</i>
18:00 - 18:30	<u>I. Lirkov</u> , S. Margenov <i>Finite strip method for biharmonic equation</i>
18:30 - 19:00	V. Perminov <i>Mathematical modeling of large forest fires</i>
20:00 - 23:00	CONFERENCE DINNER

Saturday, September 11	
Chairman	T. Zlatanovski
09:00 - 09:20	F. Izsak <i>Numerical approximation of output functionals for Maxwell equations</i>
09:20 - 09:40	Z. Markov <i>Numerical approach in solving the PDE for particular fluid dynamics cases</i>
09:40 - 10:00	A. Lazarevska <i>Comparative analysis of parameters obtained while simulating an air-pollution episode</i>
10:00 - 10:30	Coffee Break
Chairman	G. Dimitriu
10:30 - 10:50	<u>G. Bencheva</u> , S. Margenov <i>Parallel PCG solver for non-conforming FEM elasticity problems</i>
10:50 - 11:10	I. Georgiev, S. Margenov <i>MIC(0) preconditioning of rotated bilinear FEM elliptic systems</i>
11:10 - 11:30	K. Gummerov <i>Stochastic optimization in finance</i>
11:30 - 11:50	<u>C. Varlan</u> , G. Dimitriu <i>Image denoising using PDE based algorithms</i>
11:50 - 12:00	Closing
12:30 - 13:30	Lunch
14:00	DEPARTURE