Conference on

Preconditioned Robust Iterative Solution Methods

for Problems with Singularities

(PRISM2001)

University of Nijmegen, May 21–23, 2001

Program

Monday, May 21, CZN4 (N0013)

9:00-9:10	Owe Axelsson	Opening, general information
9:10- 9:55	Raytcho Lazarov	Adaptive multilevel method for convection-diffusion-reaction problems
9:55-10:40	Yvan Notay	Algebraic multilevel preconditioning of singularly perturbed convection-diffusion equations
10:40-11:00	Coffee/tea break	
11:00-12:30	**Chairman: Yvan Notay**	
11:00-11:30	Frank Kiefer	AMG-based wavelet-like multiscale solvers for convection-diffusion problems
11:30-12:00	Stephan Dahlke	Adaptive wavelet schemes for elliptic operator equations - theoretical analysis and practical realization
12:00-12:30	Stefan Reitzinger	A general approach to algebraic multigrid methods and application to $H^1(\Omega)$- and $H(curl, \Omega)$-based equations
12:30-14:00	Lunch break	
14:00-15:45	**Chairman: Svetozar Margenov**	
14:00-14:45	Walter Zulehner	Additive Schwarz-type smoothers for saddle point problems
14:45-15:15	Asghar Kerayechian	An additive Schwarz method for a stationary convection-diffusion problem
15:15-15:45	E.H. Ayachour	The fast implementation for GMRES method
15:45-16:05	Coffee/tea break	
16:05-18:25	**Chairwoman: Maya Neytcheva**	
16:05-16:45	Freddy Wubs	Towards bifurcation analysis of ocean circulations on the TERAS
16:45-17:25	Janos Karatson	Sobolev space preconditioning and Newton's method
17:25-17:55	Andrey Kucherov	On the Augmented Subspace Preconditioning (ASP) and Symmetric ASP Methods for Solving Large Sparse SPD Systems
17:55-18:25	David Kincaid	Some Variants of the GMRES Iterative Methods and Other Krylov Subspace Iterative Methods
18:30-19:30	Reception	

Tuesday, May 22, CZN5 (N0011)		
9:00-10:30	**Chairman: Radim Blaheta**	
9:00- 9:45	Evgeni Glushkov	A semi-analytical method of 3D singular basis functions construction
9:45-10:30	Zhiqiang Cai	Numerical Methods for the Computation of Singular Solutions and Stress Intensity Factors: Corner Singularities
10:30-11:00	Coffee/tea break	
11:00-12:30	**Chairwoman: Natalia Glushkova**	
11:00-11:30	Stefan Funken	Averaging technique for FE-a posteriori error control in elasticity
11:30-12:00	Atanas Dimitrov	Numerical computation of corner singularities in 3d-elasticity
12:00-12:30	Slobodan Mijalković	A component decomposition preconditioning for 3D stress analysis problems
12:30-13:30	Lunch break	
13:30-15:45	**Chairman: Raytcho Lazarov**	
13:30-14:15	Andrey Knyazev	Uniform Finite Element Error Estimates for Differential Equations with Jumps in the Coefficients
14:15-14:45	Martin Petzoldt	Regularity and error estimators for elliptic problems with discontinuous coefficients
14:45-15:15	Boris Khoromskij	Preconditioning in h- and hp-version of FEM on Generalized Geometric Meshes
15:15-15:45	Lahcen Laayouni	An additive version of the AMLI method for isotropic linear elasticity problems
15:45-16:00	Coffee/tea break	
16:00-17:55	**Chairman: Panayot Vassilevski**	
16:00-16:40	Svetozar Margenov	AMLI Preconditioning of Pure Displacement Nonconforming FEM Systems
16:40-17:25	Yousef Saad	Variants of Algebraic Recursive Multilevel Solvers and their parallel implementations
17:25-17:55	Reinhard Nabben	Algebraic Theory of Multiplicative and Additive Schwarz Methods
19:00-21:30	Conference dinner	

Wednesday, May 23, CZN4 (N0013)		
9:00-10:30	**Chairman: David Kincaid**	
9:00- 9:45	Dietrich Braess	A cascadic multigrid algorithm for mortar elements
9:45-10:30	Panayot Vassilevski	Sparse matrix element topology with application to algebraic multigrid
10:30-10:50	Coffee/tea break	
10:50-12:50	**Chairman: Janos Karatson**	
10:50-11:20	Vladimir Garanzha	Nonlinear solver for max-norm optimization of spatial mappings
11:20-11:50	Larissa Branets	Global condition number of local FE mappings in 3-D: estimates and applications to optimal grid generation
11:50-12:20	Ilghiz Ibraghimov	Application of Multi-Way Decomposition for Matrix Compression
12:20-12:50	Gergana Bentcheva	On a preconditioning strategy for rotated linear FEM elliptic systems
12:50-13:45	Lunch break	
13:45-16:30	**Chairman: Ben Polman**	
13:45-14:25	Radim Blaheta	GPCG: CG with general preconditioning and its applications
14:25-15:05	Igor Kaporin	Using the modified 2nd order IC decomposition as the conjugate gradient preconditioning
15:05-15:45	Georgij Kobelkov	Symmetric parabolic approximations of the Navier-Stokes equations
15:45-16:25	Arnold Reusken	Convergence analysis of a multigrid method for convection–diffusion equations
16:25-16:30	Owe Axelsson	Concluding remarks