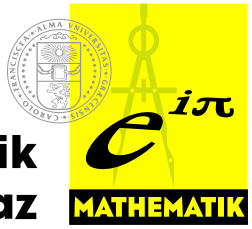

Institut für Mathematik
Karl-Franzens-Universität Graz

Workshop "Advances in Numerical Algorithms"
Program

Wednesday

8:00-9:00 Registration

9:00-9:30 K. Kunisch
- Welcome & Opening

9:40-10:10 S.G. Nash
- Model problems for the multigrid optimization of systems governed by differential equations

10:20-10:40 Coffee Break

10:40-11:10 F. Rendl
- Computational experience with large-scale semidefinite programming problems

11:20-11:50 S.I. Petrova
- Mesh adaptivity methods for shape optimization problems

12:00-12:30 B. Vexler
- A posteriori error estimation for finite element discretization of parameter identification problems

12:40-14:30 Lunch Break

14:30-15:00 A. Kunoth
- Adaptive wavelets methods for semilinear-quadratic control problems

15:10-15:40 M. Hinze
- A new discretization concept in control constrained pde control and its numerical realization

15:50-16:10 Coffee Break

16:10-16:40 G. Stadler
- Semi-smooth Newton and augmented Lagrangian methods for friction and contact problems

16:50-17:20 B. Kaltenbacher
- Material parameter identification of piezoelectricity and magnetics

Thursday

9:00-9:30 C. Pflaum
- Advances in the numerical simulation of lasers

9:40-10:10 M. Wabro
- Coupled algebraic multigrid methods for the Navier-Stokes equations

10:20-10:40 Coffee Break

10:40-11:10 K. Mikula
-Finite volume methods in image smoothing and segmentation

11:20-11:50 S. Keeling
- Image registration and interpolation by optical flow with maximal rigidity

12:00-12:30 I. Yavneh
- Multi-level algorithms for some image-processing problems

12:40-14:30 Lunch Break

14:30-15:00 C.C. Douglas
-Virtual telemetry for dynamic data-driven application simulations

15:10-15:40 S. Ta'asan
-Multiscale modeling of biological networks

15:50-16:10 Coffee Break

16:10-16:40 G. Haase
-A two level recursive calculation of coarse matrices in AMG

16:50-17:20 U. Ruede
-Adaptive PDE solvers for supercomputers

18:30 Guided Graz Tour

Friday

9:00-9:30 B. Basara
-Turbulence modelling from the perspective of the commercial CFD

9:40-10:10 A. Valli
-Mixed and 'hybrid' finite element approximation of eddy-current problems

10:20-10:40 Coffee Break

10:40-11:10 W. Hackbusch
- The efficient numerical treatment of the matrix equation

11:20-11:50 C. Gaspar
-Fast interpolation techniques and meshless methods

12:00-12:30 B. Wohlmuth
-Domain decomposition techniques based on fictious domains

12:40-14:30 Lunch Break

14:30-15:00 C. Schmeiser
-Models for the chemosensory movement of leucocytes

15:10-15:40 E. Weinmueller
-Numerical solution of singular boundary value problems in ODEs.

15:50-16:10 Coffee Break

16:10-16:40 V. Schulz
- Simultaneous optimization in applications

16:50-17:20 J. Schoeberl
-Multigrid preconditioning for parameter dependent problems

19:00 Dinner

Saturday

9:00-9:30 G. Wittum
-Large scale numerical simulations of processes
from science and technology

9:40-10:10 A. Arnold
-Transparent boundary conditions for quantum-waveguides
and in underwater acoustics

10:20-10:40 Coffee Break

10:40-11:10 L. Blank
-Wavelet and Schur complement based preconditioning with
an application in state estimation

11:20-11:50 C. Burstedde
-Numerical results for a wavelet discretization of a linear-quadratic
elliptic control problem

12:00-12:30 F. Lenzen
- Automatic detection of gravitational arcs in astronomical data
using anisotropic diffusion and segmentation