PROGRAM

March 7 (Sat.)

8:50-9:00 Opening

Linear Algebra 9:00-10:30 [Chair: Gerhard Heindl]

9:00-9:45 Götz Alefeld
"Error Bounds for Complementarity Problems Using Feasible Vectors"

9:45-10:30 Andreas Frommer
"Computing enclosures for the matrix square root"

10:30-11:00 Coffee Break

Linear Algebra 11:00-12:30 [Chair: Shin'ichi Oishi]

11:00-11:45 Günter Mayer
"The solution sets of some structured matrices"

11:45-12:30 Walter Krämer
"Solving Large Linear Interval Systems"

LUNCH

PDE Analysis 14:30-16:00 [Chair: Piotr Zgliczyński]

14:30-15:15 Filomena Pacella
"Computer assisted proofs for semilinear elliptic equations"

15:15-16:00 P. Joseph McKenna
"Some conjectures on semilinear elliptic equations: theorems, computations and verification"

16:00-16:30 Coffee Break

PDE Analysis 16:30-18:00 [Chair: Arnold Neumaier]

16:30-17:15 Yasuhide Fukumoto
"Linear and weakly nonlinear stability of an elliptic flow from the viewpoint of Hamiltonian spectra"

17:15-18:00 Wolfgang Reichel
"A-priori bounds for discretized nonlinear elliptic boundary value problems"

18:00- Welcome Party (Room 133)

PROGRAM

March 8 (Sun.)

PDE Eigenvalue 9:00-10:30 [Chair: P. Joseph McKenna]

9:00-9:45 B. Malcolm Brown
"Eigenvalue enclosures and exclosures for non-self-adjoint problems in hydrodynamics"

9:45-10:30 Yoshitaka Watanabe
"A computer-assisted stability proof for the Orr-Sommerfeld problem with Poiseuille flow"

10:30-11:00 Coffee Break

PDE Eigenvalue 11:00-12:30 [Chair: Filomena Pacella]

11:00-11:30 Michael Plum
" Band-gaps for 3D Photonic Crystals:
A Computer-Assisted Approach (Part I)"

11:30-12:00 Henning Behnke
"Band-gaps for 3D Photonic Crystals:
A Computer-Assisted Approach (Part II)"

12:00-12:30 Kaori Nagatou
"Spectral Problem on 3-D Maxwell's Equations"

LUNCH

Interval Arithmetic 14:30-16:00 [Chair: Walter Krämer]

14:30-15:15 Ulrich Kulisch
"Practical Interval Arithmetic"

15:15-16:00 Gerhard Heindl
"On Verification Problems in Digital Filter Design"

16:00-16:30 Coffee Break

Interval Arithmetic 16:30-18:00 [Chair: Günter Mayer]

16:30-17:15 Siegfried M. Rump
"Error-Free Transformations and ill-conditioned problems"

17:15-18:00 Shin'ichi Oishi
“Some Applications of Verified Numerical Computations and Error Free Transformations”

PROGRAM

March 9 (Mon.)

PDE Verification [Chair: Nobito Yamamoto]

9:00-9:45 Vu Hoang
"Enclosures for Single-Shock Solutions of Burgers' Equation"

9:45-10:30 Mitsuhiro T. Nakao
"On the numerical verification method of solutions
for evolutional equations"

10:30-11:00 Coffee Break

PDE Verification 11:00-11:45 [Chair: Gianni Arioli]

11:00-11:45 Piotr Zgliczyński
"Rigorous numerics for dissipative PDEs"

11:45-12:30 Arnold Neumaier
"Towards optimization-based error bounds for PDEs"

LUNCH

Algebra 14:30-15:15 [Chair: Siegfried M. Rump]

14:30-15:15 Masanobu Kaneko
"On the "values" of the elliptic modular j-function at real quadratics"

15:15-16:00 Frank Herrlich
"Origamis and Dessins d'Enfants"

16:00-16:30 Coffee Break

Algebra 16:30-17:15 [Chair: Andreas Frommer]

16:30-17:15 Gabriela Schmithüsen
"A side trip of origamis into Outer Space"

17:15-18:00 Masato Wakayama
"Arithmetics on non-commutative harmonic oscillators"

19:00- Banquet

PROGRAM

March 10 (Tue.)

ODE, Dynamical system etc. 9:00-10:30 [Chair: Henning Behnke]

9:00-9:45 Markus Neher
"Taylor model methods for the verified integration of ODEs"

9:45-10:30 Nobito Yamamoto
"Verified Computatuion of Closed Orbits of Dynamical Systems"

10:30-11:00 Coffee Break

ODE, Dynamical system etc. 11:00-13:15 [Chair: B. Malcolm Brown]

11:00-11:45 Setsuo Taniguchi
"Eigenvalues in stochastic oscillatory integrals"

11:45-12:30 Andreas Rauh
"Applications of Verified DAE Solvers in Engineering"

12:30-13:15 Gianni Arioli
"A functional analytic approach to computer assisted proofs"

13:15-13:25 Closing