



International Conference
Applications of Mathematics 2022

in honor of the 70th birthday of Michal Křížek

March 31–April 1, 2022

*Institute of Mathematics, Czech Academy of Sciences,
Žitná 25, Prague, CZ-115 67, Czech Republic*

CONFERENCE PROGRAM

Thursday, March 31

8.00 – 9.00 Registration

Chairman: Tomáš Vejchodský

9.00 – 9.10 Opening

9.10 – 9.40 JAN BRANDTS

Ten more years of Michal Krizek: from simplices to simplicial cones and spherical simplices

9.40 – 10.10 ISTVÁN FARAGÓ

Order and efficiency investigation for operator splitting methods

10.10 – 10.40 JÁNOS KARÁTSON

Quasi-Newton methods: anisotropic Stefann-Boltzmann heat radiation and other applications

10.40 – 11.00 Coffee Break

Chairman: Jan Chleboun

11.00 – 11.30 SERGEY KOROTOV

Bisection-type algorithms for FEM meshing (online)

11.30 – 12.00 JON EIVIND VATNE

Dihedral angle sums for some classes of polyhedra

12.00 – 13.30 Lunch Break

Chairman: Jan Brandts

13.30 – 14.00 HANS-GÖRG ROOS

Layer-adapted meshes for weak boundary layers

14.00 – 14.30 PEKKA NEITTAANMÄKI

t.b.a.

14.30 – 15.00 ANTTI HANNUKAINEN

Compound Krylov subspace method for solution of parametric linear system

15.00 – 15.20 Coffee Break

Chairman: István Faragó

- 15.20 – 15.50 ZHIMIN ZHANG
C1-conforming Petrov-Galerkin methods for 2nd-order elliptic problems and superconvergence (online)
- 15.50 – 16.20 TORSTEN LINSS
Maximum-norm a posteriori error bounds for parabolic problems
- 16.20 – 16.40 ZDENĚK DOSTÁL
Hybrid TFETI domain decomposition for solving huge elliptic problems
- 17.00 – 23.00 Party at the Institute

Friday, April 1

Chairman: Antti Hannukainen

- 9.00 – 9.30 MARTIN STYNES
Time-fractional initial-boundary value problems and their numerical solution (online)
- 9.30 – 10.00 HEHU XIE
Augmented subspace method for eigenvalue problem (online)
- 10.00 – 10.30 SHUHUA ZHANG
Error estimates for Lagrange-Galerkin approximation of American options valuation (online)
- 10.30 – 10.50 Coffee Break

Chairman: Jakub Šístek

- 10.50 – 11.20 MILOSLAV FEISTAUER
Discontinuous Galerkin method for the solution of problems in time-dependent domains
- 11.20 – 11.50 VÍT DOLEJŠÍ
Anisotropic error estimates including the geometry of mesh elements
- 11.50 – 12.20 VÁCLAV KUČERA
Can a finite-element-like method converge on arbitrary meshes?
- 12.20 – 13.40 Lunch Break

Chairman: Miloslav Feistauer

- 13.40 – 14.00 AIHUI ZHOU
Unitary algorithm (online)
- 14.00 – 14.20 JIŘÍ VALA
Computational modelling of contact/impact of deformable bodies respecting various forms of energy dissipation
- 14.20 – 14.40 JAN FRANČŮ
On problems of weak convergence in application
- 14.40 – 15.00 TOMÁŠ ROUBÍČEK
Magnetism in the planet Earth and its mathematical modelling
- 15.00 – 15.20 TOMÁŠ VEJCHODSKÝ
Fully computable a posteriori error bounds for eigenfunctions
- 15.20 – 15.40 JAKUB ŠÍSTEK
Towards a parallel domain decomposition method for immersed boundary FEM
- 15.40 – 15.45 Closing the conference
- 15.45 – 16.00 Coffee Break