International Conference

Applications of Mathematics 2015

in honor of the birthday anniversaries of
Ivo Babuška (90), Milan Práger (85), and Emil Vitásek (85)

November 18–21, 2015

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

CONFERENCE PROGRAM

Wednesday, November 18

13.00 – 14.00 Registration

Chairman: Karel Segeth

14.00 – 15.00 Opening

Jiří Rákosník, Director of the Institute of Mathematics
Presentation of the Medal of the Czech Mathematical Society
  to Milan Práger and Emil Vitásek
Karel Segeth: Professor Ivo Babuška
Ivo Babuška: Courant element: before and after (video record)
Michal Křížek: Asteroid no. 36060. My wonderful numerical analysis
  teachers – Milan Práger and Emil Vitásek

15.00 – 15.30 JAN CHLEBOUN

On uncertain data in the modeling of magnetostrictive energy harvesting

15.30 – 16.00 Coffee Break

Chairman: Jan Brandts

16.00 – 16.30 JOHN WHITEMAN

Towards a proof-of-concept for acoustic localisation of coronary artery stenoses

16.30 – 17.00 ISTVÁN FARAGÓ

Qualitative properties in discrete space-time models of epidemic propagation

17.00 – 17.30 SERGEY KOROTOV

Conforming post-refinements of adjacent 3D meshes

Thursday, November 19

Chairman: John Whiteman

9.00 – 9.30 **MILOSLAV FEISTAUER**
Discontinuous Galerkin method for the solution of dynamic elasticity problems and applications to fluid-structure interaction

9.30 – 10.00 **VÍT DOLEJŠÍ**
hp-adaptive discontinuous Galerkin method for PDEs

10.00 – 10.30 **MICHAL KŘÍŽEK**
On angle conditions in the finite element method

10.30 – 11.00 Coffee Break

Chairman: Miloslav Feistauer

11.00 – 11.30 **MARTIN BIÁK**
Filippov systems with DAE

11.30 – 12.00 **VLADIMÍR JANOVSKÝ**
A numerical analysis of a lumped parameter friction model

12.00 – 14.00 Lunch Break

Chairman: Jakub Šístek

14.00 – 14.20 **KENTA KOBAYASHI**
On the interpolation constants over triangular elements

14.20 – 14.40 **MONIKA BALÁZSOVÁ**
Stability analysis of the space-time discontinuous Galerkin method in the ALE framework

14.40 – 15.00 **PAVEL KŮS**
Convergence and stability of higher-order finite element solution of diffusion-reaction equation with Turing instability

15.00 – 15.20 **LARISA BEILINA**
Iteratively regularized adaptive finite element method in the reconstruction of coefficients in Maxwell's equations

15.20 – 15.40 Coffee Break

Chairman: Karel Segeth

15.40 – 16.00 **TOMÁŠ VEJCHODSKÝ**
Robust error bounds for finite element approximation of reaction-diffusion problems

16.00 – 16.20 **ERDOĞAN ŞEN**
The regularized trace formula for differential operator equation with unbounded operator coefficient

16.20 – 16.40 **XIA JI**
C^0 IPG for transmission eigenvalue problems

16.40 – 17.00 **JAKUB ŠÍSTEK**
An application of the BDDC method to incompressible flows

18.00 – 23.00 Conference Dinner, U Seminaristy Restaurant, Spálená St. 45

Friday, November 20

9.00 – 9.30   ZDENĚK STRAKOŠ
Preconditioning and the conjugate gradient method in the context of solving PDEs

9.30 – 10.00   RADIM BLAHETA
Poroelasticity: LBB, locking phenomena, preconditioning

10.00 – 10.30   HEHU XIE
A full multigrid method for eigenvalue problems

10.30 – 11.00   Coffee Break

11.00 – 11.30   TAKUYA TSUCHIYA
Error estimates for Lagrange interpolations on triangles

11.30 – 12.00   TORSTEN LINSS
Maximum-norm a posteriori error estimates for parabolic problems

12.00 – 14.00   Lunch Break

14.00 – 14.20   JAN ZEMAN
Guaranteed a-posteriori error bounds in homogenization via Fourier-Galerkin methods

14.20 – 14.40   ROBERTO CASTELLI
Analytical enclosure of fundamental matrix solution with applications

14.40 – 15.00   LUCIE KÁRNÁ
How message doubling improve error detection in BSC model

15.00 – 15.20   INDERPREET KAUR
Wildland fire propagation modelling: A novel approach reconciling models based on moving interface methods and on reaction-diffusion equations

15.20 – 15.40   Coffee Break

15.40 – 16.00   YANA DI
Numerical simulations on adsorption of the surfactant

16.00 – 16.20   JAROSLAV MLÝNEK
Optimization of heat radiation intensity and use of evolutionary algorithm

16.20 – 16.40   JIŘÍ NEDOMA
Dynamic contact problems in bone neoplasm analyses and the primal-dual active set (PDAS) method

Saturday, November 21

10.00 – 12.00   A walk through the Old Town