

***“NUMERICAL METHODS FOR
SCIENTIFIC COMPUTATIONS AND
ADVANCED APPLICATIONS”
(NMSCAA’16)***

The Scientific Program

May 29–June 2, 2016, Hissarya, Bulgaria

Sunday, May 29

20:00 – 21:00 **Welcome to glass of wine**

Monday, May 30

09:00 – 10:00 **Registration**

10:00 – 10:15 **Opening ceremony**

Chairperson: **Svetozar Margenov**

10:15 – 11:00 **Raytcho Lazarov**, *Preconditioning of flows in heterogeneous porous media with high contrast permeability*

11:00 – 11:30 **Coffee break**

11:30 – 12:15 **Owe Axelsson**, *Arbitrarily accurate preconditioners by low rank approximations of inverse Schur complement matrices*

12:15 – 14:00 **Lunch time**

Chairperson: **Nevena Ilieva**

14:00 – 14:30 **Stefka Fidanova**, *InterCriteria analysis of different metaheuristics applied to E.coli cultivation process*

14:30 – 15:00 **Angelos Liolios**, *Optimal system of strengthening ties for the seismic upgrading of RC structures environmentally degraded: A computational approach*

15:00 – 15:30 **Ivan Georgiev**, *Numerical characterization of composite materials*

15:30 – 16:00 **Coffee break**

16:00 – 16:30 **Miglana Koleva**, *Numerical penalization algorithms for pricing American options*

16:30 – 17:00 **Walter Mudzimbabwe**, *Newton methods for option pricing with liquidity switching*

17:00 – 17:30 **Poster Session**

Tuesday, May 31

Chairperson: **Stefka Dimova**

- 09:30 – 10:15 **Zahari Zlatev**, *Stability properties of Runge-Kutta methods combined with Marchuk-Strang splitting and Richardson extrapolation*
- 10:15 – 10:45 **Clemens Hofreiter**, *A robust geometric multigrid method for isogeometric analysis*
- 10:45 – 11:15 **Coffee break**
- 11:15 – 11:45 **Konstantinos Liolios**, *Selection of the optimal adsorption model concerning TP removal in horizontal subsurface flow constructed wetlands: A computational investigation*
- 11:45 – 12:15 **Emanouil Atanassov**, *On improving the QRN generation performance on Intel MIC architectures*
- 12:15 – 14:00 **Lunch time**
- 14:00 – 16:30 **Guided tour in Hissarya**
- 19:30 – 23:00 **Official diner**

Wednesday, June 1

Chairperson: **Ivan Lirkov**

- 09:30 – 10:00 **Gabriel Dimitriu**, *Reduced order modelling of a coupled Chemotaxis–Haptotaxis model for cancer invasion*
- 10:00 – 10:30 **Krassimira Vlachkova**, *Interpolation of convex scattered data in \mathbf{R}^3 using piecewise quadratic minimum norm networks*
- 10:30 – 11:00 **Coffee break**
- 11:00 – 11:30 **Venelin Tododrov**, *Analysis and realization of compact difference schemes for semilinear parabolic system*
- 11:30 – 12:00 **Mihail Galabov**, *Some numerical experiments about advection-diffusion problems using finite differences*
- 12:00 – 12:30 **Todor Balabanov**, *Image approximation with geometric shapes optimized by genetic algorithms*
- 12:30 – 14:00 **Lunch time**

Chairperson: Gabriel Dimitriu

- 14:00 – 14:30 **Nevena Ilieva**, *Multistage techniques for protein folding disentanglement and analysis*
- 14:30 – 15:00 **Elena Lilkova**, *Metadynamics of large proteins with collective variables preselection by a spatiotemporal multistage consensus clustering*
- 15:00 – 15:30 **Coffee break**
- 15:30 – 16:00 **Stanislav Harizanov**, *Volume-constrained 2-phase 3D hybrid segmentation*
- 16:00 – 16:30 **Ivan Lirkov**, *Denoising 2D CT radiographic images*
- 16:30 – 17:00 **Stanislav Stoykov**, *Comparative analysis of finite elements for shear locking problem*
- 17:00 – 17:30 **Lubin Vulkov**, *Analysis of numerical approximations to degenerate differential equations*
- 17:30 – 18:00 **Poster Session**

Thursday, June 2

12:00 DEPARTURE

POSTERS

- **I. Georgieva, C. Hofreiter**, *An Algorithm for Low-rank Approximation of Bivariate Functions using Splines*
- **I. Georgiev, K. Georgiev, S. Harizanov, I. Lirkov, M. Paprzycki**, *Real-time parallel Poissonian denoising of industrial CT data*
- **I. Georgiev, S. Harizanov, S. Margenov, Y. Vutov, L. Zikatanov**, *Volume Constraint Segmentation of Porous Media*
- **I. Georgiev, S. Harizanov, J. Stary**, *Structure and properties characterization of fiber-reinforced silicate composites by CT scanning and numerical simulations.*