Workshop on scientific computing

Programme

Thursday 12. 6.

13:55 – 14:00   *Opening*

Chairman: Daniel Ševčovič

14:00 – 14:30	Kenji Tomoeda	Repeated support splitting and merging phenomena in the initial-boundary value problem for a porous media equation
14:30 – 15:00	Michal Sněhota	Experimental investigation of the entrapped air redistribution in near-saturated soil
15:00 – 15:30	Robert Straka	Lattice Boltzmann Method - An Introduction for JM

15:30 – 15:50   *Coffee break*

Chairman: Kenji Tomoeda

15:50 – 16:10	Simon Praetorius	A continuous theory for active polar liquid crystals
16:10 – 16:30	Wieland Marth	A mechanism for cell motility by active polar gels
16:30 – 16:50	Marco Salvalaglio	Phase Field Modeling of Pillar-like Crystal Surface Morphology

16:50 – 17:10   *Coffee Break*

Chairman: Robert Straka

17:10 – 17:30	Jan Šácha	Temporal and spatial distribution of water and air during ponded infiltration on a sand sample recorded by neutron imaging
17:30 – 17:50	Tomáš Princ	TOUGH2 Simulation of water and air flow in heterogenous porous media
17:50 – 18:10	Francesco Alaimo	Passive Transport in Neurons

Friday 13. 6.

07:30 − 09:00   *Breakfast (Hotel Faust)*

Chairman: Michal Beneš
09:00 − 09:30	Jaromír Kukal	Small Details of Fractal Dimension Estimation
09:30 − 10:00	Hynek Lavička	Sand in the Wheels or Wheels in the Sand? Tobin Taxes and Market Crashes
10:00 − 10:30	Pavel Strachota	A Quasi-1D Model of Biomass Co-Firing in a Circulating Fluidized Bed Boiler

10:30 − 11:00   *Coffee break*

Chairman: Jaromír Kukal
11:00 − 11:20	Michal Kollár	Creation of Digital Terrain Models using surface evolution
11:20 − 11:40	Marek Macák	Up-wind principle in geodetic computations
11:40 − 12:00	Róbert Špír	Nonlinear PDE based numerical methods for cell tracking in 4D biomedical images
12:00 − 12:20	Viera Kleinová	Velocity Field Extraction from Image Sequences

12:20 − 14:00   *Lunch*

Chairman: Jiři Mikyška
14:00 − 14:20	Roman Kukumberg	Two approaches for solving optimal topology design problems
14:20 − 14:40	Miroslav Kolář	Computational Analysis of the Conserved Mean-Curvature Flow for Open and Closed Curves in the Plane
14:40 − 15:00	Siqi Ling	Parallel multi-mesh method on AMDiS
15:00 − 15:20	Vít Hanousek	Introduction to the hardware and software architecture of the Hyperion cluster at FNSPE CTU Prague

15:20 − 15:50   *Coffee break*

Chairman: Radek Fučík
15:50 − 16:10	Jakub Solovský	Mixed-Hybrid Finite Element Method for Modeling Two-phase Compositional Flow in Unsaturated Porous Media
16:10 − 16:30	Jakub Jánský	Interval Arithmetics for Global Optimization
16:30 − 16:50	Barbora Planková	Mathematical modeling of spherical phase interfaces using density gradient theory and capillary waves

16:50 − 19:30   *Free time*

19:30 − 23:59   *Conference dinner (Zlatá Koruna)*

Saturday 14. 6.

07:30 – 09:00   *Breakfast (Hotel Faust)*

Chairman: Pavel Strachota
09:00 – 09:30   Hynek Lavička   Fluctuation analysis of high frequency electricity power load in the Czech Republic

09:30 – 19:00   *Hiking excursion*

Sunday 15. 6.

07:30 – 09:00   *Breakfast (Hotel Faust)*

Chairman: Petr Pauš
09:00 – 09:30   Michal Beneš   TBA
09:30 – 10:00   Vítězslav Žabka   GPU implementation of the finite element method
10:00 – 10:20   Vladimír Klement   Multigrid method for linear complementarity problem on GPU

10:20 – 10:40   *Coffee break*

Chairman: Hynek Lavička
10:40 – 11:00   Hung Hoang Dieu   Anisotropic Surface Diffusion in Relative Geometry
11:00 – 11:20   Ondřej Polívka   Compositional Simulation of Two-Phase Flow in Porous Media Using VT-Flash
11:20 – 11:40   Ondřej Pártl   Numerical Simulation of Gas Flow and NAPL Vapor Transport in Soil
11:40 – 12:00   Alexandr Žák   Modeling of Structural Behavior of Saturated Soil Induced by Freezing