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 son
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: H	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

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 Flu-
		idized 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 den-
		sity 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