
Student workshop on scientific computing 2015

Programme

Thursday 11.6.

13:55 – 14:00 *Opening*

Chairman: Michal Beneš

14:00 – 14:30 Robert Straka LBM simulation of industrial scale furnace

14:30 – 15:00 Tomáš Dytrych First-principle Modeling of Nuclear Structure and Reactions in the Era of Petaflop Supercomputers

15:00 – 15:30 Jaromír Kukul Radiality Order in Grid Design for Isotropic Diffusion Modeling

15:30 – 15:50 *Coffee Break*

Chairman: Jaromír Kukul

15:50 – 16:10 Jakub Solovský Investigation of Field Scale Vapor Intrusion Problems in Porous Media using Mixed Hybrid Finite Element Method

16:10 – 16:30 Martin Dlask Novel Approach of Fractal Dimension Estimation Based on Optimal Segmentation of Time Series

16:30 – 16:50 David Celný Mathematical modeling of planar and spherical phase interfaces of liquid mixtures

16:50 – 17:10 *Coffee Break*

Chairman: Robert Straka

17:10 – 17:30 Tomáš Princ Modeling of infiltration experiment done on soil sample by TOUGH2

17:30 – 17:50 Alexandr Žák Pore-Scale Modeling of Thermo-Mechanical Interaction within Freezing Saturated Soil

17:50 – 18:10 Jiří Minarčík Numerical solution of a curvature driven flow of plane and space curves and its applications

Friday 12.6.

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

Chairman: Daniel Ševčovič

09:00 – 09:30 Peter Frolkovič Semi-implicit numerical methods for advection equation
09:30 – 10:00 Radek Fučík Non-Equilibrium Mass Transfer Model for Complete Volatilization of Trapped Non-Aqueous Phase Fluids in Vadose Zone
10:00 – 10:30 Tomáš Oberhuber TNL: FDM on GPU in C++

10:30 – 11:00 *Coffee Break*

Chairman: Pavel Strachota

11:00 – 11:20 Milan Holec On nonlocal transport based closure relations for plasma hydrodynamics
11:20 – 11:40 Jakub Klinkovský A Massively Parallel Implementation of Mixed Hybrid Finite Element Method for Single-Phase Flow in Porous Media
11:40 – 12:00 Ondřej Pelech Comparison of Semi Implicit and Fully Implicit Mixed-Hybrid Finite Element Method for Two-Phase Flow in Porous Media
12:00 – 12:20 Miroslav Kolář Modelling of Interacting Dislocations in Persistent Slip Band

12:20 – 14:00 *Lunch*

Chairman: Peter Frolkovič

14:00 – 14:30 Francesco Alaimo A Phase Field Crystal Model for Active Particles
14:30 – 15:00 Sebastian Aland TBA
15:00 – 15:30 Simon Praetorius Spectral methods for time-dependent vector-valued problems on the two-sphere

15:30 – 16:00 *Coffe Break*

Chairman: Radek Fučík

16:00 – 16:30 Michal Beneš Modelling of Athermal Phase Transitions in Materials by Phase-Field Method
16:30 – 17:00 Pavel Hron TBA
17:00 – 17:30 Pavel Strachota Error Estimate vs. Experimental Convergence Measurement of the Finite Volume Scheme for the Allen-Cahn Equation
17:30 – 18:00 Milan Hokr Comparison of numerical methods on a benchmark problem of tracer transport in a combined 3D and 2D domain

18:00 – 19:30 *Free Time*

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

Saturday 13.6.

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

Chairman: Jiří Mikyška

09:00 – 09:30 Folke Post TBA

09:30 – 10:00 Michal Sněhota Neutron Imaging of Trapped Gas Behaviour in Near-Saturated Heterogeneous Soils

10:00 – 10:20 David Fabian Bosson Cluster – Building Cluster Solution on top of Open Source

10:20 – 19:00 *Excursion*

Sunday 14.6.

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

Chairman: Tomáš Oberhuber

09:00 – 09:20 Ondřej Pártl Modelling of Gas Flow and NAPL Vapor Transport in Porous Medium and above its Surface

09:20 – 09:40 Vladimír Klement Simulation of the 3D incompressible Navier-Stokes equations on the GPU

09:40 – 10:00 Radek Máca CMR Data Segmentation Using Level Set and Allen-Cahn Approach

10:00 – 10:30 *Coffee Break*

Chairman: Tomáš Dytrych

10:30 – 11:00 Róbert Špir Software for parameter tuning and postprocessing of segmentations obtained from automatic algorithms based on PDEs

11:00 – 11:30 Daniel Ševčovič Tangential redistribution for mean-curvature driven evolution of surfaces