



EUROSIM 2010

7th EUROSIM Congress on Modelling and Simulation



September 6 - 10, 2010, Prague, Czech Republic



Congress Programme

Monday, September 6, 2010				
15:00 – 19:00	EUROSIM 2010 Registration			
15:45	Meeting Point by Registration Desk			
16:00 – 19:00	Walking Tour of Prague			
Tuesday, September 7, 2010				
09:00 – 10:00	EUROSIM 2010 Registration			
10:00 – 10:15	EUROSIM 2010 Opening			
10:15 – 11:15	Invited Plenary Talk 1: <i>Agostino G. Bruzzone</i>			
11:15 – 12:15	Invited Plenary Talk 2: <i>Antonín Kavička, Norbert Adamko</i>			
12:15 – 14:00	Lunch Break			
14:00 – 16:00	Application of Modelling and Simulation I	Modelling Methods, Tools and Techniques I	Inductive Modelling and Artificial Neural Networks in Simulation I	Parallel and Distributed Architectures and Systems / Performance Engineering of Computer Systems
16:00 – 16:30	Coffee Break			
16:30 – 17:50	Simulation to Support Sustainable Power Plant Engineering and Operation	Discrete Event and Real-Time Systems	Web-Based Simulation	Agent-Based Modelling and Simulation
19:00	Meeting Point by Hotel Diplomat Reception			
19:30	Welcome Reception at the Mayor of City of Prague Residence			
Wednesday, September 8, 2010				
09:00 – 10:00	Invited Plenary Talk 3: <i>Borut Zupančič</i>			
10:00 – 10:30	Coffee Break			
10:30 – 12:30	Simulation of Transportation and Logistic Systems I	Modelling and Simulation for Control, Coordination and Supervision I	Human Factors and Social Issues / Supply Chain Management	Modelling Methods, Tools and Techniques II
12:30 – 14:00	Lunch Break			
14:00 – 16:00	Simulation of Transportation and Logistic Systems II	Simulation in Education / Education in Simulation I	Application of Modelling and Simulation II	Advanced and Comparative Approaches in Modelling and Simulation I
16:00 – 16:30	Coffee Break			

Wednesday, September 8, 2010					
16:30 – 18:30	Simulation of Transportation and Logistic Systems III	Engineering, Manufacturing and Control	Application of Modelling and Simulation III	Virtual Reality, Visualisation and Computer Games	Modelling and Simulation in Medicine and Pharmacy I
18:30 – 19:30	Poster Session				
Thursday, September 9, 2010					
09:00 – 10:00	Invited Plenary Talk 4: <i>Peter Fritzson</i>				
10:00 – 10:30	Coffee Break				
10:30 – 12:30	Circuits, Sensors and Devices / Image, Speech and Signal Processing	Modelling and Simulation in Environmental Informatics	Advanced and Comparative Approaches in Modelling and Simulation II	Modelling and Simulation of Water Treatment	
12:30 – 14:00		Lunch Break			
14:00 – 16:00	Modelling and Simulation in Medicine and Pharmacy II	Energy, Power Generation and Distribution	Physical Modelling and Control	Modelling and Simulation for Control, Coordination and Supervision II	
16:00 – 16:30	Coffee Break				
16:30 – 17:30	Felix Breitenecker and the LAURA Group				
19:00	Meeting Point by Hotel Diplomat Reception				
19:30	Congress Dinner in Restaurant Vikárka				
Friday, September 10, 2010					
09:00 – 10:00	Invited Plenary Talk 5: <i>Felix Breitenecker</i>				
10:00 – 10:30	Coffee Break				
10:30 – 12:50	Scenarios and Models for Future Transportation	Inductive Modelling and Artificial Neural Networks in Simulation II / Intelligent Systems	Simulation in Education / Education in Simulation II	Modelling and Simulation for Control, Coordination and Supervision III	
12:50 – 13:10	EUROSIM 2010 Closing				
Session Halls	Hall Prague A	Hall Prague B	Hall Prague C	Hall Prague D	Hall Vienna I+II
Invited Plenary Talk	Hall Prague A+B+C+D				

Monday, September 6, 2010

EUROSIM 2010 Registration 15:00 – 19:00

Meeting Point by Registration Desk **15:45**

Walking Tour of Prague 16:00 – 19:00

Tuesday, September 7, 2010

EUROSIM 2010 Registration 9:00 – 10:00

EUROSIM 2010 Opening 10:00 – 10:15
Hall Prague A+B+C+D

Invited Plenary Talk 10:15 – 11:15
**Human Behaviour Modelling as a Challenge for Future Simulation R&D:
Methodologies and Case Studies**
Agostino G. Bruzzone
Chair: **Miroslav Šnorek** Hall Prague A+B+C+D

Invited Plenary Talk 11:15 – 12:15
Agent-Based Simulations of Transportation Terminals
Antonín Kavička, Norbert Adamko
Chair: **Miroslav Šnorek** Hall Prague A+B+C+D

Lunch Break 12:15 – 14:00

Application of Modelling and Simulation I 14:00 – 16:00
Chair: **Mikuláš Alexík** Hall Prague A

- [14:00] Development of the Simulation Software Package Test POERF RAW
Vladimír Čech, Jiří Jevický
- [14:20] Identification of Longitudinal and Lateral Dynamics of an Ultralight Aircraft
Roberto Guidorzi, Roberto Diversi
- [14:40] General Description of WRF-Fire Model Applicable to Bulgarian Forest Fire Data
Nina Dobrinkova, Mariana Vassileva
- [15:00] Evidence-Based Mathematical Maintenance Model for Medical Equipment
Abdelbaset Khalaf, Karim Djouani, Yskandar Hamam, Yasser Alayli

- [15:20] Performance of Iterative Equation Solvers for Convection-Diffusion-Adsorption Problems in Three-Dimensional Sphere Packings in COMSOL
Birgit Stute, Wolfgang Joppich, Wolfgang Wiechert, Eric von Lieres
- [15:40] Fuzzy-Based Modelling of an MR Damper
Javier Ruiz-Cabrera, Ruben Morales-Menendez

Modelling Methods, Tools and Techniques I

Chair: **Jiří Kunovský**

14:00 – 15:40

Hall Prague B

- [14:00] Adequate Mathematical Description of Dynamic System: Statement Problem, Synthesis Methods
Yuri Menshikov
- [14:20] Development Process for Multi Disciplinary Embedded Control Systems
Sune Wolff, Peter Gorm Larsen, Tammy Noergaard
- [14:40] Heterogeneous Model Integration and Virtual Experimentation Using xMOD: Application to Hybrid Powertrain Design and Validation
Mongi Ben Gaid, Gilles Corde, Alexandre Chasse, Bruno Léty, Rodolphe De La Rubia, Mohamed Ould Abdellahi
- [15:00] Application of the Modern Taylor Series Method to a Multi-Torsion Chain
Georg Fuchs, Jan Kopřiva, Michal Kraus, Martin Kozek
- [15:20] Efficient Event Driven Proxel Simulation of a Subclass of Hidden Non Markovian Models
Robert Buchholz, Claudia Krull, Graham Horton

Inductive Modelling and Artificial Neural Networks in Simulation I

Chair: **Pavel Kordík**

14:00 – 16:00

Hall Prague C

- [14:00] Modelling of Age from the Teeth Development
Miroslav Čeppek, Aleš Pilný, Radka Kubelková, Jana Velemínská, Miroslav Šnorek
- [14:20] Simulation of Ant Colonies with Hints Generated by Parallel Heuristics
Oleg Kovářík, Miroslav Skrbek
- [14:40] Continuous Optimization Algorithms: Performance on Benchmarking Functions and Model Parameters
Pavel Kordík, Vladimír Bičík
- [15:00] Road Mesh Modelling Using the Spatiotemporal Clusterization
Rudolf Marek, Miroslav Skrbek
- [15:20] GAME Model Utilization for Feature Ranking and Feature Selection
Aleš Pilný, Pavel Kordík, Miroslav Šnorek
- [15:40] Fast Supervised Feature Extraction From Structured Representation of Text Data
Ondřej Háva, Pavel Kordík, Miroslav Skrbek

Parallel and Distributed Architectures and Systems / Performance Engineering of Computer Systems

14:00 – 15:40

Chair: **František Zbořil**

Hall Prague D

- [14:00] Accelerated Learning of Gaussian Process Models
Bojan Musizza, Dejan Petelin, Juvš Kocijan
- [14:20] Computational Speed on the Multiprocessor Architecture and GPU
Peter Kvasnica, Igor Kvasnica
- [14:40] Building Parallel Raytracing Simulation Model with Petri Nets and B-Method
Štefan Korečko, Branislav Sobota
- [15:00] Developing Deep Simulation Systems to Study Wireless Network Performance
Paolo Pileggi, Giuseppe Iazeolla, Pieter Kritzing
- [15:20] Stochastic Markov Model for TCP Throughput
Asmir Gogić, Nermin Suljanović, Aljo Mujčić, Amer Hasanović, Matej Zajc

Coffee Break

16:00 – 16:30

Simulation to Support Sustainable Power Plant Engineering and Operation

16:30 – 17:50

Chair: **Kaj Juslin**

Hall Prague A

- [16:30] Temperature Dynamic of Heat Exchangers in Boilers
Lukáš Hubka
- [16:50] Dynamic Simulation of a Solar Power Plant Steam Generation System
Thibault Henrion, René Schimon, Karl Ponweiser, Vitali Tregubow
- [17:10] Extended Material Properties in Apros for Dependable Evaluation of New Combustion Power Plant Concepts
Reijo Lilja, Markku Hänninen, Jari Lappalainen, Kaj Juslin
- [17:30] Reliability Assessment of Southern Croatian Transmission Network
Krešimir Fekete, Srete Nikolovski, Goran Knežević

Discrete Event and Real-Time Systems

16:30 – 17:30

Chair: **Roy Crosbie**

Hall Prague B

- [16:30] FPGA-Based Real-Time Simulation of Power Electronic Systems
Roy Crosbie, John Zenor, Dale Word, Richard Bednar, Narain Hingorani
- [16:50] Simulation for Multiprocessor Real-Time Scheduling Evaluation
Richard Urunuela, Anne-Marie Déplanche, Yvon Trinquet
- [17:10] Numerical Methods of Structure Optimization of Homogeneous Queuing Networks
Boris Sokolov, Sergey Kokorin

Web-Based SimulationChair: **Oleg Kovářík**

16:30 – 17:50

Hall Prague C

- [16:30] Iterative System for Simulation of E2E Transport Protocols in Heterogeneous Networks
Biljana Stojcevska, Oliver Popov, Aleksandar Milenkoski
- [16:50] Web Simulation for the Management of the Operations at an International Airport
Miguel Poyatos, José Manuel Pastor, Javier Otamendi, Andrés García, Pablo García
- [17:10] Service Workflows and Distributed Computing Methods for 13C Metabolic Flux Analysis
Tolga Dalman, Ernst Juhnke, Tim Dörnemann, Michael Weitzel, Katharina Nöh, Wolfgang Wiechert, Bernd Freisleben
- [17:30] Performance Optimization for Enterprise Web Applications Through Remote Client Simulation
Tomáš Černý, Michael J. Donahoo

Agent-Based Modelling and SimulationChair: **Aleš Belič**

16:30 – 17:50

Hall Prague D

- [16:30] Algorithmic Evaluation of Trust in Multilevel Model
Jan Samek, František Zbořil
- [16:50] Connecting JADE with PN Agent
Jakub Žák, Vladimír Janoušek, Radek Kočí, František Zbořil
- [17:10] Increasing Profit in Agent Business Model with Trust
Ondřej Malačka, Jan Samek, František Zbořil
- [17:30] Ensembles in Fetal Weight Prediction Modeling
Tomáš Siegl, Jan Hrnčíř, Miroslav Šnorek

Meeting Point by Hotel Diplomat Reception at 19:00

Welcome Reception at the Mayor of City of Prague Residence at 19:30

Wednesday, September 8, 2010

Invited Plenary Talk 9:00 – 10:00
Physical Modelling: Some Experiences from Education and Applications
Borut Zupančič
Chair: **Esko Juuso** Hall Prague A+B+C+D

Coffee Break 10:00 – 10:30

Simulation of Transportation and Logistic Systems I 10:30 – 12:10
Chair: **Antonín Kavička** Hall Prague A

- [10:30] Detector Settings for Real-Time Traffic Signals
Yaser Hawas, Faisal Ahmed, Nada Al Bakry
- [10:50] Acquisition of Input Data for Transportation Models
Petr Cenek, Peter Tarábek
- [11:10] Studies of Effects Influencing the Transmission of UDP Datagrams Between Railway Vehicles and Infrastructure
Zuzana Kleprlíková, David Žák
- [11:30] The Need of Combining Different Traffic Modelling Levels for Effectively Tackling Complex Project
Alexandre Torday, Jordi Casas, Alex Gerodimos, Josep Maria Aymamí
- [11:50] Division of Traffic Network for Distributed Microscopic Traffic Simulation Based on Macroscopic Simulation
Tomas Potuzak

Modelling and Simulation for Control, Coordination and Supervision I 10:30 – 12:30
Chair: **Rihard Karba** Hall Prague B

- [10:30] Control of Discrete Event Systems Modelled by Petri Nets
Juan Ignacio Latorre, Emilio Jiménez, Mercedes Pérez
- [10:50] Control Solutions, Simulation and Experimental Results for a Magnetic Levitation Laboratory System
Claudia-Adina Dragoş, Radu-Emil Precup, Stefan Preitl, Emil M. Petriu, Mircea-Bogdan Rădac
- [11:10] Application of Neural Networks for Dynamic Modeling of Robotic Mechanisms
Tadej Petrič, Leon Žlajpah
- [11:30] Modelling, Simulation and Control of Gas Metal Arc Welding
Marjan Golob, Boris Tovornik
- [11:50] Process History Based Multivariate Statistical Model of Heat Treatment Furnace for Control Optimization
Božidar Bratina, Nenad Muškinja, Boris Tovornik
- [12:10] Modelling and Fuzzy Control of Biomass Steam Boiler System
Nenad Muškinja, Božidar Bratina, Boris Tovornik

Human Factors and Social Issues / Supply Chain ManagementChair: **Miroslav Skrbek**

10:30 – 11:50

Hall Prague C

- [10:30] Phenomenal Trust Intervention Model
Arnoštka Netrvalová, Jiří Šafařík
- [10:50] A Simulation Study of the Organization for Employment of Workforce in Greece
Aikaterini Spyropoulou, Lefteris Angelis
- [11:10] Multimodal Optimization for Simulated Systems
Ahlem Baccouche, Anne-lise Huyet, Henri Pierreval, Besma Feyeche
- [11:30] On the Use of RFID for Supply Chain Scheduling and Execution Control
Dmitry Ivanov, Boris Sokolov, Alexey Vinel, Viacheslav Zelentsov

Modelling Methods, Tools, and Techniques IIChair: **Miroslav Čepěk**

10:30 – 12:30

Hall Prague D

- [10:30] Global Exploration of Optimization Landscapes for Nonlinear Ill Posed Parameter Estimation Problems
Oliver Schweissgut, Wolfgang Wiechert
- [10:50] A New Scheduling Method Based on Dispatching Rules and Applicable by Simulation Models
Ali Razzazi
- [11:10] Stability and Convergence of the Modern Taylor Series Method
Jiří Kunovský, Václav Šátek, Pavla Sehnalová
- [11:30] One Approach to Verification and Validation of Simulation Model
Alexander Mikov, Elena Zamyatina
- [11:50] From Tracefile Analysis to Understanding the Message of Simulation Results
Gaby Neumann, Juri Tolujew
- [12:10] Third Party Optimization Tools – A Survey
Florian Judex

Lunch Break

12:30 – 14:00

Simulation of Transportation and Logistic Systems IIChair: **Norbert Adamko**

14:00 – 16:00

Hall Prague A

- [14:00] Scenario-Based Approach to Agent's Evaluation
Richard Lipka, Pavel Herout
- [14:20] Analysis of Warehouse Order Picking Systems Using Simulation Technology
Rainer Frick
- [14:40] The Position Detection System of the Autonomous Model Car GT-Car
Frank Tränkle, Andreas Kaluza
- [15:00] The Flow Modelization by Petri Net and Urban Taffic
Marc Bourcerie, Frédéric Guegnard, Frédéric Bousseau

[15:20] Extensive Transportation Service Systems and Their Flexible Simulation Modeling
Michal Lekýr, Valent Klima

[15:40] Rule-Based Interval Valued Fuzzy Logic System
Tomáš Brandejský

Simulation in Education/Education in Simulation I

14:00 – 16:00

Chair: **Maja Atanasijević-Kunc**

Hall Prague B

[14:00] LABI – Modelling and Analysis through Examples
Maja Atanasijević-Kunc, Rihard Karba, Borut Zupančič

[14:20] Analysis and Composition of Discrete Event Oriented Simulations Using Distributed Web Technologies
Aman Atri, Nicole Nagele, Nikolas Popper

[14:40] Towards a Tutoring System for Biology Students Learning Modeling and Simulation
Géraldine Ruddeck, Alke Martens

[15:00] Simulation Education and Its Collaborations Within University Curricula
Toni Ruohonen, Edward Williams

[15:20] Modeling and Simulation Training for Undergraduate Students
Iskra Popova, Oliver Popov, Lisa Brouwers

[15:40] Teaching GPSS in E-Learning Environment
Marijana Despotović, Božidar Radenković, Aleksandar Marković, Zorica Bogdanović, Dušan Barać

Application of Modelling and Simulation II

14:00 – 16:00

Chair: **David Murray-Smith**

Hall Prague C

[14:00] High Order Gaussian Process Models for Prediction of Ozone Concentration in the Air
Alexandra Grancharova, Juš Kocijan, Alexander Krastev, Hristina Hristova

[14:20] A Hybrid Approach to Model and Simulate the Double Gimbaled MEMS-Based Micromirror
Ivan Plander, Michal Štepanovský

[14:40] Development of a Thermally and Pressure Controlled Valve Application by Using FEM-Simulation
Uwe Risto, René Uhlig, Lena Zentner

[15:00] The Pseudo Output Error Identification Algorithm: Effect of the Stationary Filter
Elie Tohme, Antoine Abche, Regis Ouvrard, Thierry Poinot

[15:20] Multi-Domain Modeling and Distributed Real-Time Simulation of an Autonomous Vehicle
Tamas Juhasz, Ulrich Schmucker

[15:40] Study on High Effective Simulation of Complex Electromagnetic Environment
Yingnian Wu, Lin Zhang, Fei Tao, Dengkun Liu, Lan Mu

- [14:00] Simulation-Based Development and Operation of Controls on the Basis of the Devs Formalism
Tobias Schwatinski, Thorsten Pawletta, Sven Pawletta, Christian Kaiser
- [14:20] A Combined Cellular Automata - DEVS Simulation for Room Management with Vacation Times
Martin Bruckner, Shabnam Tauböck, Nikolas Popper, Dietmar Wiegand, Stefan Emrich, Sanja Zerlauth
- [14:40] Manufacturing Simulation Within a Rapid Control Prototyping a Comparative Study
Tobias Pingel, Sven Pawletta, Thorsten Pawletta, Gunnar Maletzki
- [15:00] Agent-Based Population Models for Household Simulation
Florian Miksch, Günther Zauner, Nikolas Popper, Felix Breitenecker
- [15:20] Simulation Study of Parallel Model Predictive Control
Stefan Behrendt, Peter Dünnow, Bernhard Lampe
- [15:40] Developing Simulation Models Using Statechart Methodology
Michael Gyimesi, Patrick Einzinger, Felix Breitenecker

Coffee Break

16:00 – 16:30

Simulation of Transportation and Logistic Systems IIIChair: **Antonín Kavička**

16:30 – 18:30

Hall Prague A

- [16:30] Simulation Study of Tatra Electric Railway Possible Reconstruction
Róbert Javorka, Peter Márton
- [16:50] Simulation Model for Estimating Effects of Forming Pick-Up Trains by Simultaneous Method
Miloš Ivić, Aleksandar Marković, Sanjin Milinković, Ivan Belošević, Milan Marković, Slavko Vesković, Norbert Pavlović, Milana Kosijer
- [17:10] A Fuzzy Petri Net Model for Estimation of Train Delays
Sanjin Milinković, Milan Marković, Slavko Vesković, Miloš Ivić, Norbert Pavlović
- [17:30] Blockage Prevention Mechanism for Traffic Management
Andreea Udrea, Cristian Flutur, Dumitru Popescu
- [17:50] Simulation-Based Fitness Landscape Analysis for Vehicle Scheduling Problem
Galina Merkuryeva, Yuri Merkuryev, Vitalijs Bolshakovs
- [18:10] Simulating an Autonomous Ship for Sea Demining
Fernando J. Pereda, Hector Garcia de Marina, Juan F. Jiménez, Jose M. Giron-Sierra

Engineering, Manufacturing and ControlChair: **Miroslav Čepěk**

16:30 – 18:30

Hall Prague B

- [16:30] The Individual Channel Analysis and Design Method Applied to Control of a Coupled Tanks System: Simulation and Experimental Results
David Murray-Smith
- [16:50] Self Tuning Decentralized Controller Design of Web Tension Control System
Kazuki Mizoguchi, Tetsuzo Sakamoto
- [17:10] Application of SVM for Evaluation of Wear State and Remaining Life Time
Mahmud-Sami Saadawia, Dirk Söffker
- [17:30] Hysteresis Modelling for a MR Damper
Jorge de-J. Lozoya-Santos, Sebastien Aubouet, Ruben Morales-Menendez, Olivier Sename, Ricardo A. Ramirez-Mendoza, Luc Dugard
- [17:50] Moon Orbiter Simulator for the ESA Project ESMO
Matevž Bošnjak, Sašo Blažič, Drago Matko
- [18:10] Heuristic Algorithms to Obtain Optimized Schedules of Manufacture TCPN Models
Miguel Mujica, Miquel Piera

Application of Modelling and Simulation IIIChair: **Aleš Pilný**

16:30 – 18:30

Hall Prague C

- [16:30] Client Relay Simulation Model for Centralized Wireless Networks
Alexander Pyattaev, Sergey Andreev, Alexey Vinel, Boris Sokolov
- [16:50] Modeling of Power and Heat Losses of Electrical Arc Furnaces
Eder Trejo, Fernando Martell, Alejandro Montesinos, Osvaldo Micheloud
- [17:10] One Modeling Technique Approach for Operational Risk Prediction
Ana Savić, Slobodan Čabarkapa, Nenad Kojić, Boško Živković
- [17:30] Hardware-in-the-Loop Real-Time Simulation with OpenModelica for Process Automation
V. Muralidharan, Prabir Purkayastha, Peter Fritzson, Rominus Valsalam, R. Prasad, Abhir Raj Metkar, C. P. Roshna
- [17:50] A Retargetable, High-Performance ISA Simulator in Java
Marco Kaufmann, Thomas B. Preußer, Rainer G. Spallek
- [18:10] The Research of Component Based Integrated Modeling and Simulation Environment
Duzheng Qing, Bo-hu Li, Lei Sun, Liang Zhang, Yi-Lei Wu, Min Zhou, Han Zhang, Zhiping Li

Virtual Reality, Visualisation and Computer GamesChair: **Michal Štepanovský**

16:30 – 18:30

Hall Prague D

- [16:30] An Exploration of Multivariate Time-Varying Volume Datasets Using Volumetric Parallel Coordinates
Siori Yasuoka, Teppei Tanaka, Naohisa Sakamoto, Koji Koyamada
- [16:50] Model of Game Industry
Šárka Květoňová, Michal Kacina

- [17:10] Modeling and Simulation of Light Propagation for Multistatic 3D PMD-Camera Illuminator Constellations
Valerij Peters, Simon Meckel, Otmar Loffeld, Oliver Lottner,
- [17:30] Virtual Reality Platform Design for Electric Wheelchair Simulation in an Enabled Environment
Nico Steyn, Yskandar Hamam, Eric Monacelli, Karim Djouani
- [17:50] A Combined Approach of Path Planning for Moving Objects in Virtual Environments
Gašper Mušič, Gregor Klančar
- [18:10] Filters Analysis for Speckle Reduction in Intravascular Ultrasound Images
Hassen Lazrag, Med Ali Hamdi, Med Saber Naceur

Modelling and Simulation in Medicine and Pharmacy I

Chair: **Maja Atanasijević-Kunc**

16:30 – 18:30

Hall Vienna I+II

- [16:30] Examining Sources of Interindividual Pharmacokinetic Variability by Nonlinear Mixed Effects Modeling
Iztok Grabnar, Igor Locatelli
- [16:50] How Health Care Systems React on Epidemics
Patrick Einzinger, Michael Gyimesi, Günther Zauner
- [17:10] Analysis of the Steady-State Relations in Mathematical Model of Cholesterol Biosynthesis
Aleš Belič, Jure Ačimovič, Marko Goličnik
- [17:30] Compartment Modelling of Obesity in Inhomogeneous Populations: Problems and Alternative Approaches
Barbara Glock, Günther Zauner, Patrick Einzinger
- [17:50] The Optimization of Healthcare Administrative Processes
Robert Leskovic, Alenka Baggia, Zlatko Lazarevič
- [18:10] Evaluation of Different Modeling Techniques for Simulation of Epidemics
Günther Zauner, Nikolas Popper, Felix Breitenacker

Poster Session

18:30 – 19:30

Poster and Coffee Break Area

1. SIENNA: A Support for Autonomous Learning for Future Classroom
Lorenzo Moreno, Evelio J. González, Claudia L. O. Groenwald, Beatrice Popescu, Carina S. González
2. Multiphase Modelling in Porous Media
Sabine Klepsch, Andrea Watzinger, Tamara Čoja
3. Modelling and Simulating of an Ultrasonic Flow Measuring System
Manuel Haide, Wolfgang Schroer, Günter Gramlich, Klaus Ressel, Laurent Sollic, Michael Teufel
4. Modular PMD Simulator for Multistatic Camera Systems
Valerij Peters, Otmar Loffeld, Simon Meckel
5. Analysis of the Simulation Fidelity for Extended Target in MMWSS
Jing Ma, Qiuru He, Duzheng Qing, Xuguang Luo, Congjin Jin, Dong Chen

Invited Plenary Talk 9:00 – 10:00

Modelica
Peter Fritzson

Chair: **Rihard Karba**

Hall Prague A+B+C+D

Coffee Break 10:00 – 10:30

Circuits, Sensors and Devices / Image, Speech and Signal Processing

10:30 – 12:30

Chair: **Miroslav Skrbek**

Hall Prague A

- [10:30] Modelling of Flow and Pressure Patterns. Estimation of Blood Flow and Blood Pressure Manner in Different Sized Patients. New Challenge for Cardiology and Cardiac Surgery
David Macků, Filip Ježek, Petr Huňka
- [10:50] Compact VHDL-AMS System Level Model of Smart Power Switches for Control Concept Verification
Hans-Peter Kreuter, Vladimír Košel, Michael Glavanovics
- [11:10] Electro-Thermal Simulation of a Semiconductor Device Based on Simulatively Extracted Electrical Parameters from Measurements
Vladimír Košel, Christian Djelassi, Helmut Köck, Michael Glavanovics, Arno Zechmann
- [11:30] Communication Efficiency and Pattern Optimization in FPGA Accelerated RTL Simulation
Steffen Koehler, Jan Schirok, Rainer G. Spallek
- [11:50] 2D Position Identification of a Sound Source Using Phase Difference Spectrum Images
Ryuichi Shimoyama
- [12:10] Modeling and Simulation Results on a New Compton Scattering Tomography
Gél Rigaud, Mai Nguyen, Trong Tuong Truong

Modelling and Simulation in Environmental Informatics

10:30 – 11:50

Chair: **Jochen Wittmann**

Hall Prague B

- [10:30] Development and Implementation of a Domain Model for Persistence and Code Generation for Consistent Material Flow Simulations with Milan
Paul Jahr, Lars Schiemann, Volker Wohlgemuth
- [10:50] The Design of Self-Developmental Model of Atmospheric Pollutant Dispersion
Radim Dvořák, Jiří Krajiček, Jaroslav Zendulka, František Zbořil
- [11:10] Modelling the Flow Processes in Unsaturated Porous Media for Predicting the Water Content Distribution in Levees and Earth Dams
Rene Blankenburg, Peter-Wolfgang Graeber
- [11:30] Preliminary Study of Using Ellam Framework for Solution of Atmospheric Advection Diffusion Reaction Equation
Radim Dvořák, František Zbořil

Advanced and Comparative Approaches in Modelling and Simulation IIChair: **Nikolas Popper**

10:30 – 12:10

Hall Prague C

- [10:30] Speedup 512 ? – Using Graphic Processors for Simulation
Thomas Wiedemann
- [10:50] Implementing a Large-Scale Spatial Epidemic Model as Agent-Based System Using GPGPU and Databases
Günter Schneckenreither, Günther Zauner, Nikolas Popper, Felix Breitenecker
- [11:10] An Approach for Combined Simulation Based Parameter and Structure Optimization Using Evolutionary Algorithms
Olaf Hagendorf, Thorsten Pawletta, Christina Deatcu, Roland Larek
- [11:30] Application of Advanced-Search Methods for Automotive Data Bus System Signal Integrity Optimization
Harald Günther, Stephan Frei, Thomas Wenzel, Wolfgang Mickisch
- [11:50] Hybrid State Chart Modelling for Nonlinear Bouncing Ball Dynamics
Rouzbeh Karim, Pavol Bauer, Bernhard Heinzl, Matthias Rößler, Günter Schneckenreither, Andreas Körner, Katharina Breitenecker, Günther Zauner, Nikolas Popper

Modelling and Simulation in Water TreatmentChair: **Esko Juuso**

10:30 – 11:30

Hall Prague D

- [10:30] Evolutionary Optimisers in Calibration of Activated Sludge Models
Jukka Keskitalo, Kauko Leiviskä
- [10:50] Modelling of Residual Alumum in Water Treatment Process
Petri Juntunen, Mika Liukkonen, Marja Pelo, Markku Lehtola, Yrjö Hiltunen
- [11:10] Data Based Development of Hybrid Models for Biological Wastewater Treatment in Pulp and Paper Industry
Esko Juuso

Lunch Break

12:30 – 14:00

Modelling and Simulation in Medicine and Pharmacy IIChair: **Jože Drinovec**

14:00 – 16:00

Hall Prague A

- [14:00] Simulation Analysis of Terapeutic Outcomes Regarding Chronic Heart Failure When Using Beta Blockers
Maja Atanasijević-Kunc, Jože Drinovec, Barbara Guštin, Aleš Mrhar
- [14:20] Pulse Wave Separation: A Comparison of Methods
Bernhard Hametner, Johannes Kropf, Christopher Mayer, Thomas Weber, Bernd Eber, Siegfried Wassertheurer
- [14:40] Representation of Competitive Serotypes in Dynamic Models
Christoph Urach, Florian Miksch, Günther Zauner, Nikolas Popper, Felix Breitenecker
- [15:00] Compton Scattering Emission Imaging Based on the V Line Radon Transform and Its Simulation
Rémi Régnier, Mai Nguyen, Trong Tuong Truong

- [15:20] A Kinetic Sorption Model for Citrate in Soil
Daniel Leitner, Eva Oburger, David Jones, Konstantinos Zygalkis, Tiina Roose, Andrea Schnepf
- [15:40] A Method to Improve Team Performance in the OR Through Intent Inferencing
Eugene Santos Jr., Keum Joo Kim, Fei Yu, Deqing Li, Elizabeth A. Jacob, Lindsay Katona, Joseph Rosen

Energy, Power Generation and Distribution

Chair: **Jan Drchal**

14:00 – 16:00

Hall Prague B

- [14:00] A Case Study: Performance Evaluation for a Computer Integrated Power Plant Network
Jozef Bohdan Lewoc, Antoni Izworski, Sławomir Skowronski, Antonina Kieleczawa, Tadeusz Czachórski, Georgi M. Dimirovski, Vesna Ojleska
- [14:20] New ANN Models for Short Term Forecasting of Electricity Loads
Jelena Milojković, Vančo Litovski
- [14:40] Multiphysical Simulation Improves Engineering of Electric Drives
Anton Haumer, Thomas Baeuml, Christian Kral
- [15:00] Theoretical Consideration of Large Dynamic Gas Distribution Systems, by Using Significant Coefficients to Evaluate the Energy Efficiency
Rene Schimon, Andreas Werner, Thibault Henrion, Markus Haider
- [15:20] Development of the Latvian Energy Sector System Dynamic Model
Valerijs Skribans
- [15:40] Modelling and Simulation of the Dynamics of Hydro-Energetic Systems
Dumitru Popescu, Silviu Cirstoiu

Physical Modelling and Control

Chair: **Thorsten Pawleta**

14:00 – 16:00

Hall Prague C

- [14:00] Moving Boundary Heat Exchanger Model and Validation Procedure
Manuel Gräber, Nils Christian Strupp, Wilhelm Tegethoff
- [14:20] Design of a Hybrid Control Model for Automatic Sample Changers at SGAS/IAEA
Katharina Breitenecker, Andrew P. Maddison, Herbert Siegmund
- [14:40] Creating a Simscape Hydraulic Library for Physical Modelling
Bernhard Heinzl, Günther Zauner, Felix Breitenecker, Matthias Röbler
- [15:00] BCP - A Benchmark for Hybrid Modelling and State Event Modelling
Andreas Körner, Bernhard Heinzl, Matthias Röbler, Stefanie Winkler, Irene Hafner, Günter Schneckenreither, Günther Zauner, Nikolas Popper
- [15:20] Exploiting Structural Dynamism in Functional Hybrid Modelling for Simulation of Ideal Diodes
Henrik Nilsson, George Giorgidze
- [15:40] Simulators for Physical Modelling - Classification and Comparison of Features / Revision 2010
Felix Breitenecker, Nikolas Popper, Günther Zauner, Michael Landsiedl, Matthias Röbler, Bernhard Heinzl, Andreas Körner

- [14:00] Modelling HP Steam Generator with Fuzzy Feedforward Control System
Tomáš Náhlavský
- [14:20] Measuring and Modelling the Dynamics of Reactions of Car Drivers
Mikulaš Alexík
- [14:40] Modeling and Simulation of the Electric Arc Furnace for the Control Design Purposes
Vito Logar, Dejan Dovžan, Igor Škrjanc
- [15:00] Discrete-Time Fuzzy Modelling and Parallel Distributed Compensation Control of Wheeled Mobile Robots
Sašo Blažič, El-Hadi Guechi, Jimmy Lauber, Michel Dambrine, Gregor Klančar
- [15:20] A Simulation-Based Approach for Control-Optimization of Lecture-Room Management
Stefan Emrich, Sanja Zerlauth, Martin Bruckner, Nikolas Popper, Shabnam Tauböck, Dietmar Wiegand, Felix Breitenecker
- [15:40] Modeling of Thick Walled Composite Structure Cure Process
Sergey Shevtsov, Ivan Samochenko, Victor Doubrov, Gennady Toiskin, Vladimir Axenov

Coffee Break

16:00 – 16:30

16:30 – 17:30

Behave Emotions like Transfer Functions? - The Laura-Petrarca Case*Felix Breitenecker and the LAURA Group*Chair: **Felix Breitenecker**

Hall Prague A+B+C+D

Meeting Point by Hotel Diplomat Reception at 19:00

Congress Dinner at Restaurant Vikárka – Prague Castle at 19:30

Friday, September 10, 2010

Invited Plenary Talk

9:00 – 10:00

Modelling and Simulation in Health Technology Assessment*Felix Breitenecker*Chair: **Borut Zupančič**

Hall Prague A+B+C+D

Coffee Break

10:00 – 10:30

Scenarios and Models for Future TransportationChair: **Jochen Wittmann**

10:30 – 12:30

Hall Prague A

- [10:30] Workflow Management of the Ground Handling at the Airport Through Modular System Optimizing
Marc Widemann, Yousef Farschtschi, Jochen Wittmann, Dietmar P. F. Möller
- [10:50] Global Optimization of Local Workflow Managers Using the Example of Airport Hamburg
Yousef Farschtschi, Marc Widemann, Jochen Wittmann, Dietmar P. F. Möller
- [11:10] Macroscopic Modeling of a Luggage Stream in an Airport Terminal
Marc Widemann, Jochen Wittmann, Kai Himstedt, Dietmar P. F. Möller
- [11:30] Modelling and Simulation of Vehicle Movements Using a SPPTW Algorithm and the Application to Airport Surface Movements Analysis
Niclas Dzikus, Volker Gollnick
- [11:50] Macroscopic Modelling of Passenger Streams on the Airport and Its Adaptation in Matlab Simulink
Yousef Farschtschi, Dominik Formella, Kai Himstedt, Jochen Wittmann, Dietmar P. F. Möller
- [12:10] Simulating the Impact of Various Quay Operational Protocols on Container Unloading and Loading Efficiency
Gregory A. Harris, Bernard J. Schroer, Dietmar P. F. Möller

Inductive Modelling and Artificial Neural Networks in Simulation II / Intelligent SystemsChair: **Pavel Kordík**

10:30 – 12:30

Hall Prague B

- [10:30] Simulation and Genetic Evolution of Spiking Neural Networks
Petr Podhorský, Miroslav Skrbek
- [10:50] Classification of Spatio-Temporal Data
Jakub Zahradník, Miroslav Skrbek
- [11:10] Hybrid Neighborhood Control Method of Adaptive Plan System with Genetic Algorithm
Hieu Pham, Hiroshi Hasegawa
- [11:30] A Concept of a Robot for the Robotour Competition
Jaroslav Rozman, František Zbořil
- [11:50] Cellular Automata in Thermodynamic and Cloud Dynamics Simulations
Alisson Rodrigo, Maury Gouvêa Jr.
- [12:10] Comparing Ability of Generalisation for Methods Solving Decision Making Processes within Simulation Models of Passenger Railway Stations
Michael Bažant, Jan Fikejz

Simulation in Education/Education in Simulation IIChair: **Felix Breitenecker**

10:30 – 12:50

Hall Prague C

- [10:30] An E-Learning Study: Using Maple T.A. to Improve the Mathematic Skills of Students
Peter Kristöfel, Andreas Körner, Felix Breitenecker, Vilma Urbonaite
- [10:50] Advanced Randomization and Grading in the E-Learning System Maple T.A.
Andreas Zimmermann, Vilma Urbonaite, Andreas Körner, Stefanie Winkler, Stefan Krause, Maximilian Kleinert
- [11:10] MMT - A Web Based E-Learning System for Mathematics, Modeling and Simulation Using Matlab
Stefanie Winkler, Andreas Körner, Irene Hafner
- [11:30] Radioactive Decay Models in a Matlab E-Learning Environment
Katharina Breitenecker, Felix Breitenecker, Andreas Körner, Peter Kristöfel, Nikolas Popper, Günter Schneckenreither, Günther Zauner
- [11:50] A.RIES - A Web Lecture and Online Exercise Management System for Applied Mathematics and Mathematical Modelling
Andreas Körner, Nicole Nagele, Günter Schneckenreither, Nikolas Popper, Michael Landsiedl
- [12:10] A Multimedia Interactive 3D Virtual Environment for Emergency Simulation, Teaching and Practice of Safety Procedures
Marco Vannucci, Valentina Colla, Alessandro Avigni, Andrea Avigni
- [12:30] Projectile Motion - Boundary Value Problem and Optimization in Education
Rüdiger Hohmann, Nico Hagemann, Nicolas Kaiser

Modelling and Simulation for Control, Coordination and Supervision IIIChair: **Rihard Karba**

10:30 – 12:50

Hall Prague D

- [10:30] Modelling of Mobile Robot Dynamics
Edouard Ivanjko, Toni Petrinić, Ivan Petrović
- [10:50] Identification of a Hybrid Fuzzy Model of a Batch Reactor for Simulation and Control
Gorazd Karer, Igor Škrjanc, Borut Zupančič
- [11:10] Modelling and Simulation of the Active Vibration Control by Means of PI Regulated Electro-Dynamic Actuator and Bond Graph Approach
Željko Lozina, Ivan Tomac, Damir Vučina
- [11:30] Modelling Deadlock Avoidance in AGV Systems via Coloured Petri Nets
Michal Žarnay, Ladislav Jančík, Petr Cenek
- [11:50] Higher Order Differential Delay Systems with Control Applications
Athanasios Pantelous, Athanasios Karageorgos, Leonidas Dritsas, Vasilis Tsoulkas
- [12:10] Modelling and Simulation of Semi-Batch Polymerization Reactor for Improved Reactants Dosing Control
Nadja Hvala, Dolores Kukanja
- [12:30] Modeling of Robot Learning in Matlab/Simulink Environment
Bojan Nemec, Leon Žlajpah

EUROSIM 2010 Closing

12:50 – 13:10

Hall Prague A+B+C+D

Presentation Instructions

Oral Presentation

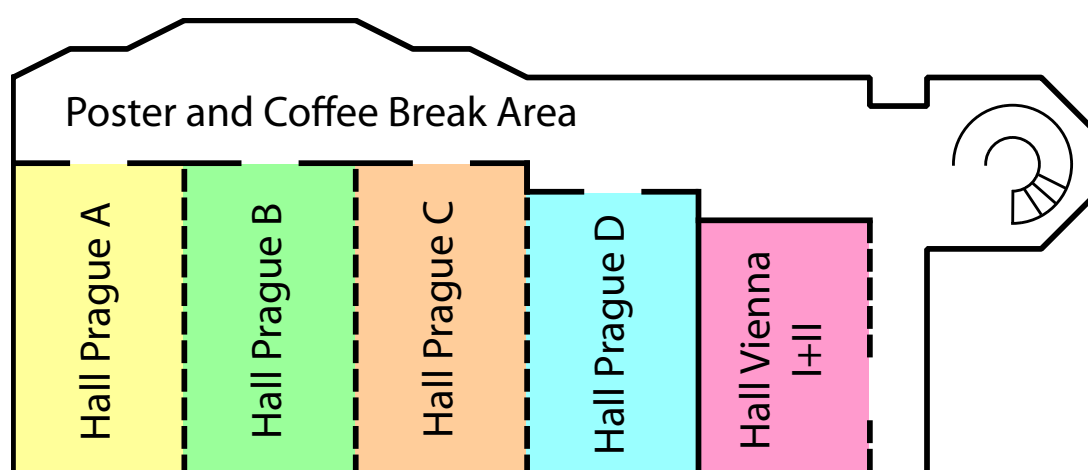
The length of a contributed talk is 20 minutes including a discussion. All session halls will be equipped with laptops with Windows XP, Powerpoint and Adobe Reader installed. Presenters are kindly asked to upload their presentations at least 10 minutes before the beginning of their session. Presentation from own notebooks is not recommended.

Poster Presentation

The poster session will be held on Wednesday 18:30 -19:30. It will be possible to install posters from 9:00 on Wednesday. The posters are limited to maximum dimensions of 150 cm x 120 cm (height x width).

Venue Plan

The congress halls are situated on the first floor of the Diplomat Hotel.



Social Events

Welcome Reception

Tuesday, September 7, 2010 at 19.30

Meeting Point: Hotel Diplomat Reception at 19.00



Will be held in the Residence of the Mayor of City of Prague.

The address is:

Mariánské náměstí

Prague 1 – Staré Město (Old Town)

We will go from the Diplomat Hotel by underground (Metro), line A, Dejvická station to the Staroměstská station (third station from Dejvická). From the Staroměstská station there is short walk to the Residence.

Important notes:

- Welcome Reception starts at 19.30, late entrance is not allowed. Please meet us at the Hotel Diplomat Reception.
- The Welcome Reception is free for EUROSIM 2010 participants and registered accompanying person with a badge ONLY!
- Hosted and welcomed by a representative of Prague Municipality.

Congress Dinner



Thursday, September 9, 2010 at 19.30

Meeting Point: Hotel Diplomat Reception at 19.00

The Restaurant Vikárka is in the walking distance from the Diplomat Hotel (20 minute walk up the hill – Prague Castle).

Important notes:

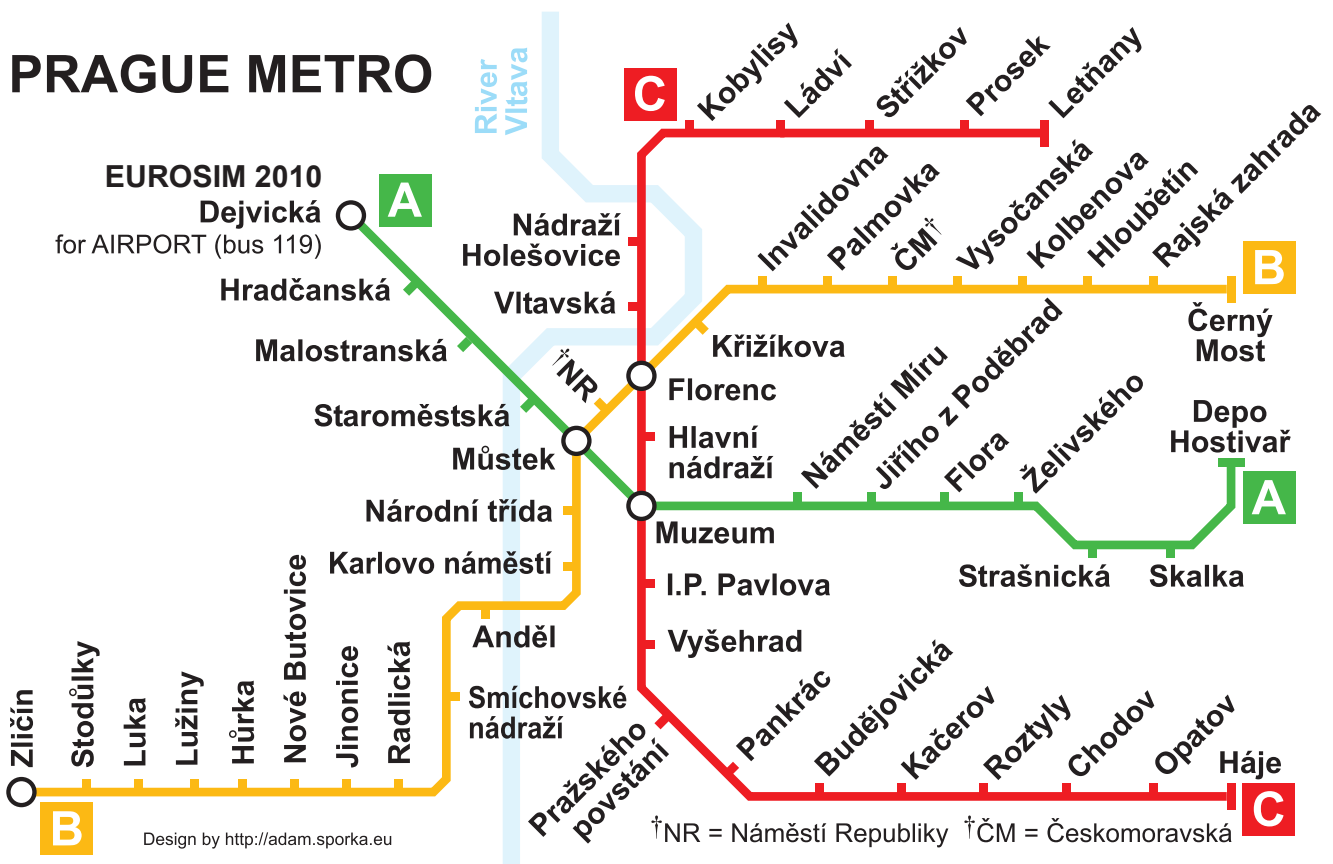
- **Entrance only with invitation.**
- The entrance to the restaurant is around the corner from the street U Prašného mostu. The safest way is to meet us at the Hotel Reception.



Prague Public Transportation System

Prague public transportation system includes an underground (Metro), trams and buses. Transfer ticket costs 26 CZK and allows to transfer between lines (underground to underground, tram to underground, etc.) It is valid for up to 75 min. from validation (90 min. on weekends/holidays and from 8 p.m. to 5 a.m. on weekdays).

For short rides not longer than 5 metro stops or 20 minutes in tram a single ticket can be used. The single ticket costs 18 CZK. It allows to transfer between metro lines for up to 30 minutes of total time of use.



Site Map

A Congress Venue – Diplomat Hotel – Evropská 15

B Welcome Reception – Residence of the Major of City of Prague – Mariánské Nám.

C Congress Dinner – Restaurant Vikárka – Vikářská 39 (Entrance is from the street **U Prašného mostu**)

