

Preface	IX
Scientific Programme	1
Author Listing	411

KEYNOTE

Scheduling Problems with Precedence Constraints: Models and Algorithms Roberto Montemanni	5
---	----------

SIMULATION TOOLS

A Survey on Multi-Formalism Performance Evaluation Tools Simonetta Balsamo, Gian-Luca Dei Rossi and Andrea Marin.....	15
---	-----------

Automatic Parallelization of a Gap Model using Java and OpenCL Jonathan Passerat-Palmbach, Arthur Forest, Julien Pal, Bruno Corbara and D.R.C. Hill	24
--	-----------

Hybrid Systems Modelling and Simulation in DESTTECS: a Co-Simulation Approach Yunyun Ni and Jan F. Broenink	32
---	-----------

From Sequence Diagrams UML 2 x TO FD DEVS Roberto Pasqua, Damien Foures, Vincent Albert and Alexandre Nketsa	37
--	-----------

Computer Simulation of Photonic Crystal Fibers Using FDTD Method Raed. K. Ibrahim and Oras. A. Shareef	44
--	-----------

FUZZY SIMULATION AND AI

Simulation of the Delphi Method with a Fuzzy Expert System Richard Pohl and Christina Klüver	51
--	-----------

Heuristic Based Model Selection for a New Least Squares SVM Solution Jingjing Zhang and Kang Li.....	56
--	-----------

Failures Localization within Water Networks by Means of Neuronal Nets Jan Studzinski and Izabela Rojek	64
--	-----------

CONTENTS

BIOLOGICAL SIMULATION

Study of Different Patient Controlled Analgesia Modes using Hybrid Simulation Technique

Henrikas Pranevicius, Tadas Kraujalis, Vytautas Pilkauskas, Mindaugas Pranevicius and Osvaldas Pranevicius.....71

Simulations in Genome Mapping

David Mester, Yefim Ronin, Zeev Frenkel, Dina Mitkov and Abraham Korol78

Markov Chain Monte Carlo Methods to Analyze the Steady-State Flux Solution Space of Metabolic Network Models

Thomas Latzko, Wolfgang Wiechert, Katharina Nöh and Uwe Jaekel84

Nonparametric Estimation of a Survival Function using Refined Descriptive Sampling

Megdouda Ourbih-Tari and Mahdia Azzal.....91

COASTGEN: A New Agent Based Modelling Tool for Invasive Spartina Species

James T. Murphy, Mark Johnson and Ray Walshe.....94

Vine Model Design using a Domain Specific Modeling Language : Prototype & Proof of Concept

Guillaume Barbier, Jérémy Flusin, Véronique Cucchi, François Pinet and David Hill.....100

SIMULATION IN THE NUCLEAR INDUSTRY

A Distributed Simulation Tool on Windows Phone 7

Manuel Díaz, Daniel Garrido, Luis Llopis and Enrique Soler109

Team_K: A New Kernel for Soft Real Time Simulations

Manuel Díaz, Daniel Garrido, Luis Llopis, Enrique Soler and Sergio Romero ..114

A CFD Approach for CANDU6 Fuel Bundle Subcooled Boiling Flow

I. Prisecaru, S. Nicolici, R. Bilegan and D. Dupleac.....119

Development of CANDU 6 moderator models for simulating the flow circulation and predicting temperature distribution inside the Calandria vessel

I. Prisecaru, R. Arsene, D. Dupleac and S. Nicolici.....124

ELECTRONIC NETWORKS

Providing a Graphical User Interface for the Modelling of Network Simulator 3 Scenarios
 Eduardo M.D. Marques, Jorge J.F. Sousa and Paulo N.M. Sampaio131

Influence of Relative Traffic Distribution in Nodes with Blocking: An analytical Model
 Herwig Bruneel, Willem Mélangé, Bart Steyaert, Dieter Claeys and Joris Walraevens136

RECSIM - A Simulator for reconfigurable Network on Chip Topologies
 Alexander Logvinenko and Dietmar Tutsch144

Towards the Modelling of the Fault Tolerance Mechanism of the PIM SM Multicast Routing protocol in an IPTV Environment
 Gábor Lencse and István Derka152

HUMAN MACHINE SIMULATION

Using Guided Simulation to Improve a Model-Based Design Process of Complex Human Machine Systems
 Stefan Puch, Martin Fränzle, Bertram Wortelen and Thomas Peikenkamp159

Design and Optimisation of a Motion Cueing Algorithm for a Truck Simulator
 E. Thöndel.....165

Analysis of the Electro Hydraulic Speed Control Systems by Real Time Simulation with Hardware-in-the-Loop
 Marius Alexandru Mitroi, Radu Puhalschi, Georgiana Claudia Vasiliu, Daniela Vasiliu and Nicolae Vasiliu.....171

Simultaneous Simulation of one Dimensional Flexible Objects in 3-D Graphical Simulation Environments
 Frank Heinze, Juergen Rossmann and Bartholomaeus Rudak176

RISK MANAGEMENT

SimReg: System Dynamics Simulation of Interregional Risk Management
 Viveca Asproth, Stig C.Holmberg and Anita Håkansson.....185

CONTENTS

Modeling and Simulation of Selected Operational IT Risks in the Banking Sector
Christoph Brandt, Francesco Santini, Natallia Kokash and Farhad Arbab192

POLICY AND BUSINESS PROCESS SIMULATION

Provenance and Traceability in Agent Based Policy Simulation
Ulf Lotzmann and Maria A. Wimmer203

An Electrical Power Optimization Problem
William Conley208

An Agent-Based Simulation of Viral Marketing Effects in Social Networks
Axel Hummel, Heiko Kern, Stefan Kühne and Arndt Döhler212

A Business Language for a Distributed Simulation Framework
Carlos Bragança de Oliveira and António Carvalho Brito.....220

Analysis of Business Process Dynamic Models for Development of Simulation Modeling Service
Konstantin Aksyonov, Eugene Bykov, V. Kamelsky and Olga Aksyonova.....227

Higher Education Productivity and Quality Modelling with Data Envelopment Analysis Methods
Golnaz Maleki, Matthias Klumpp and Marc Cuypers231

Using Protocol State Machines to Support Simulation-Based Emulation Projects
Torben Meyer and Steffen Strassburger234

Tool for Collaborative Support in Pre-Project Phase
Michal Žák, Šárka Květoňová and Jiří Slabý239

Colored Petri Nets in the Simulation of ETL Standard Tasks: The Surrogate Key Pipelining Case
Diogo Silva, Orlando Belo and João M. Fernandes242

HOSPITAL MANAGEMENT LOGISTICS

Step towards Simulation and Monitoring of Hospital Waiting Lists
Marta Viana, Olivía Oliveira, António Abelha and José Machado251

Simulation training for Safer Transitions of Patients in Fragmented Health Care Systems
Ranjit Singh, Alan C. Roberts, Sonjoy Singh, Diana Anderson, Ashok Singh, Ron Brooks and Gurdev Singh255

Intelligent Decision Support in Intensive Care – Towards Technology Acceptance

Filipe Portela, Manuel Filipe Santos, José Machado, António Abelha, José Neves, Álvaro Silva and Fernando Rua.....260

FACILITY PLANNING

Challenges of using Discrete Event Simulation for Facility Planning in SMEs: A Case Study

Ruby Wai Chung Hughes, Rab Scott and Keith Ridgway269

Hybrid Modeling of Strategy and Production in The Manufacturing Industry – taking The Best from System Dynamics and Discrete Event Simulation

Bojan D. Jovanoski, Robert Minovski, Gerald Lichtenegger and Siegfried Vössner.....274

PRODUCT DEVELOPMENT

Graphical Modelling and Simulation of Product Development Projects

Sebastian Schneider, Ralf Laue, Arian Storch and Susanne Mütze-Niewöhner.....285

Model-Based Design of Paper Handling in Printers

Ralf Stamps, Joanna van de Mortel-Fronczak, Jos Baeten and Lou Somers ...293

Towards Performance Based Design: Scope of using Computer Based Lighting Simulation Tool for Designing Efficient Luminaire Layout of a Production Space in the Context of Dhaka Region, Bangladesh

Md Mohataz Hossain and Khandaker Shabbir Ahmed301

SUPPLY CHAIN SIMULATION

Supply Chain Building Blocks –Integration of Geographic Information in an Agent Based Model for Simulating Generic Supply Chain Designs

Wolfgang Kersten and Mayolo Alberto Lopez Castellanos309

Warehouse Design and Product Assignment and Allocation: a mathematical programming model

Carla A. S. Geraldés, Maria Sameiro Carvalho and Guilherme A. B. Pereira ...314

CONTENTS

LOGISTICS ANALYSIS AND PROGNOSIS

- Application of New Techniques of Artificial Intelligence in Logistics:
An Ontology-Driven Case-Based Reasoning Approach**
Martin Kowalski, Stephan Zelewski, Daniel Bergenrodt and Hubert Klüpfel323
- Dynamic Scheduling in Logistics with Agent Based Simulation**
Matthias Klumpp and Gregor Sandhaus329
- Logistics Performance Measurement with Data Envelopment Analysis (DEA)**
Andreas Berrisch, Matthias Klumpp and Dilay Celebi.....337
- Transport Volume and Green Transport Modes Prognosis with GAMS**
Sascha Bioly and Matthias Klumpp.....340
- Integrating Consolidation Options in a New Conceptual Freight Transportation
Framework**
Tabitha Maes, Katrien Ramaekers, An Caris, Gerrit K. Janssens
and Tom Bellemans345

VEHICLE ROUTING AND TRAFFIC

- A New Cellular Automaton Approach for Simulations of Probabilistic Features
of Vehicular Traffic**
Boris S. Kerner, Sergey L. Klenov, Gerhard Hermanns
and Michael Schreckenberg.....353
- Vehicle Routing Planning and Simulation – A Hybrid Model for Observing
Supply Chain System Performance**
Sultan Ceren Salkın and Mahir Öner358
- Modelling and Simulation of Train Positioning within the Railway Network**
Jan Fikejz and Antonín Kavička366

TERMINAL LOCATION SIMULATION

- The Transport of Palletized Goods via the Inland Waterway - An Optimal
Location Analysis and Simulation**
Koen Mommens and Cathy Macharis377
- Optimizing LTL Terminal Performance by Simulation**
Uwe Clausen, Peiman Dabidian, Daniel Diekmann, Ina Goedicke
and Jan Kaffka386
- Simulation of Transshipment Terminals in the Parcel Delivery Industry**
Uwe Clausen and Daniel Diekmann394

CONTENTS

DEA Simulation in Logistics Tour and Location Planning – Two German Business Applications

Christina Westphal, Victor Kuchshaus, Philipp Duppe, Matthias Klumpp
and Hella Abidi.....399

LATE PAPER

University Production Function Simulation

Matthias Klumpp405