

# FINAL PROGRAM



22-24 October 2012



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Universidade do Minho



# Contents

# Contents

<b>Badges</b> .....	5
<b>Best Paper Award</b> .....	7
<b>Conference Location</b> .....	4
<b>Conference Proceedings</b> .....	5
<b>General Information</b> .....	4
<b>Meeting Rooms</b> .....	6
<b>Need Help?</b> .....	6
<b>Notes</b> .....	11
<b>Registration</b> .....	5
<b>Room Legend</b> .....	6
<b>Session Chairs Information</b> .....	7
<b>Social Event and Lunches</b> .....	6
<b>Tickets</b> .....	5
Quick Program Overview .....	8
Scientific Program .....	12
<b>Monday, October 22</b> .....	12
<b>Tuesday, October 23</b> .....	18
<b>Wednesday, October 24</b> .....	24
Conference Dinner .....	23
Conference Location .....	28
<b>ESM'2013</b> .....	27
EUROSIS Info .....	30

## General Information

### 1. Conference Location

The **ESM'2012 Conference** is being held at FOM, Essen, Germany



The conference venue will be the [FOM University of Applied Sciences](#)  
 Herkulesstrasse 32  
 45127 Essen, Germany  
 ☎ Tel: +49.201 8100.4444  
 📠 Fax: +49.201.8100.4990  
 ✉ Email: [hella.abidi@fom-ild.de](mailto:hella.abidi@fom-ild.de)

The registration desk will be placed in the hallway on the ground floor from Monday morning October the 22<sup>nd</sup> onwards, where registration will start at 08.00 and will end at 5.00 p.m. on Tuesday October 23<sup>rd</sup> registration will be from 8.30 a.m. - 5.00 p.m. with Wednesday registration only from 8.30 a.m.- 9.00. a.m. The way to the conference and desk will be signposted.

### ALL MAJOR MAPS ARE AT THE BACK OF THIS PROGRAMME

#### How to reach the conference location in Essen:

Situated centrally in the Rhine/Ruhr region, Essen is connected to an extensive traffic network. From all over Germany and from abroad Essen is easy to reach from all directions by car, train, plane, and even by water. Within the Verkehrsverbund Rhein-Ruhr Essen provides a comprehensive local passenger transport service within the city and beyond, via its extensive links with the region.

#### By Plane

Connection to [Düsseldorf Airport](#):

Direct connection Düsseldorf Flughafen/Airport Station to Essen Main-Station  
 By S1, RE 1, RE 2, RE 6 (VRR ticket price level C)

Connection to [Dortmund Airport](#):

From Dortmund airport to Dortmund Main Station with airport express shuttle bus (6,50 €). From Dortmund Main Station to Essen Main Station by S1, RE 1, RE 6, RE 11 (VRR price ticket level C).

Connection to [Cologne/Bonn Airport](#):

From the Airport Cologne/Bonn you take train S13 to Cologne main station from where there are several connections to Essen by Deutsche Bahn

Connection to [Münster/Osnabrück Airport](#):

From Münster/Osnabrück Airport take shuttle bus lines D 50, S 50 or R 51 to Münster main station from where you take the Regionalbahn RE 2, RB42 to Essen or several connections by Deutsche Bahn.

# General Information

## By Train

[Essen Main Station Deutsche Bahn](#) provides several connections from all over Germany by IC, EC or ICE trains. For further information visit [www.bahn.de](http://www.bahn.de)

## By Tram and Bus

Essen Main Station - Hollestraße - Nr 145/ 146/ 154/ 155/ 166/ 196/ SB 16 - Hollestraße Rathaus Essen - Hollestraße - Nr 109/ 103 - Hollestraße

## By Car

You can reach Essen easily by car because several motorways are located in and around Essen. Take the A 40, Exit 24 Essen-Huttrop in Direction Centre, after some 500 m turn right into Herkulesstraße. Follow the signs „FOM-Hochschule - SHZ I”.

## 2. Badges

Each registrant will receive a name badge upon registration. **The badge must be worn, in order to be admitted to the technical sessions, lunches and social event.**

## 3. Tickets

Extra tickets for the social event and lunches are available from the registration desk. Price: (or equivalent in another currency) for extra tickets

Extra conference dinner	€ 60 plus 19% VAT
Extra lunch ticket	€ 25 plus 19% VAT

## 4. Registration

The ESM'2012 Registration Desk will be open for information and registration:

Monday, October 22 ..... 8.00 a.m. to 5.00 p. m.

Tuesday, October 23 ..... 8.30 a.m. to 5.00 p. m.

Wednesday, October 24 ..... 8.30 a.m. to 9.00 a.m.

**The location of the registration desk will be signposted**

## 5. Conference Proceedings

Each fully paid registrant will be provided with a copy of the Conference Proceedings (printed format). **This is NOT applicable to students who are not authors and who have not fully registered.**

(Extra copies are available on a cash and carry basis at special rates during **ESM'2012**)

## General Information

Price: (or equivalent in another currency) for an extra copy

ESM'2012 Proceedings CASH AND CARRY
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€ 50 plus 19% VAT
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### 6. Meeting Rooms

The ESM'2012 conference will be held in ROOM H2 and three meeting rooms on the first floor of the FOM Building (1.03A-1.03B-1.02B). **They are designated A, B and C** in this programme. The way to the rooms will be signposted. WIFI-Internet and electrical connections are available in every room.

### 7. Need Help?

Please see the conference desk for your questions

### 8. Social Events and Lunches

**All registrants are invited to**

All **Coffee Breaks** are served in the hallway in front of the meeting rooms.

The lunches are served in **on the ground floor on the reception level.**

#### The Conference Dinner

All participants are invited to the conference dinner on **TUESDAY** the 23<sup>rd</sup> of October. As we need to give an exact number of participants we would appreciate **your confirmation at the desk before Monday evening.**

The dinner will be held at:



**[Restaurant Wahlberg](#)**  
**in der Philharmonie Essen**  
**Huyssenallee 53**  
**D-45128 Essen**

### 9. Room Legend

The parallel meeting rooms will be designated **ROOM A (1.03A), B (1.03B) and C (1.02B)**. Signposts will indicate the room number and programme above each door.

## General Information

### 10. Best Paper Award

During the conference the papers, which were accepted as **extended** papers will be judged by the committee in order to choose the best paper of the ESM'2012 conference.

Session Chairs information

**ALL SESSION CHAIRPERSONS IN THIS PROGRAM ARE PROVISIONAL**

**Session Chairs** are chosen on a voluntary basis by proposals by either authors or local committee members or are appointed by the Track Chairs, General Program Chair or General Conference Chair. They are responsible for their assigned session. They make sure their speakers are available, take care of the timing within the session, chair the discussion after each presentation and introduce each speaker based on the CV's given to them by the authors. **If a session chair is not available then the first author takes on the responsibility to chair** In case they chair a session featuring **extended papers**, then they are required to distribute and collect the reviews of that or those papers at the beginning and end of the session. If they have time they should also indicate in their papers the number of session participants.

**THE NUMBERS NEXT TO THE PRESENTATIONS DENOTE THE PAGE-NUMBERS IN THE PROCEEDINGS. IF NO NUMBERS ARE MENTIONED THEN THIS PAPER IS NOT PUBLISHED IN THE PROCEEDINGS**

**THE AUTHORS WHO ARE UNDERLINED ARE NORMALLY THE PRESENTERS**

**PAPERS IN GREY BOXES ARE THE EXTENDED PAPERS ELIGIBLE FOR THE BEST PAPER AWARD**

**CHECK OUT THE OTHER EUROSIS EVENTS ON OUR WEBSITE:**

<http://www.eurosis.org>

**MONDAY, 22<sup>nd</sup> OCTOBER 2012**

08.00-17.00	<b>REGISTRATION</b>		
09.00-09.15	<b>WELCOME BY PROF MATTHIAS KLUMPP – ESM'2012 CONFERENCE CHAIR - ROOM H2</b>		
09.15-10.00	<b>KEYNOTE ADDRESS BY PROFESSOR UWE CLAUSEN, FRAUNHOFER INSTITUTE - ROOM H2</b>		
10.00-10.30	<b>COFFEE BREAK</b>		
10.30-12.30	<b>PARALLEL SESSIONS</b>		
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>	<b>ROOM C 1.02B</b>
	<b>SIMULATION TOOLS</b>	<b>PRODUCT DEVELOPMENT</b>	<b>POLICY AND BUSINESS SIMULATION I</b>
12.30-14.00	<b>LUNCH BREAK</b>		
14.00-15.00	<b>PARALLEL SESSIONS</b>		
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>	<b>ROOM C 1.02B</b>
	<b>FUZZY SIMULATION AND AI</b>	<b>AI AND HUMAN MACHINE SIMULATION I</b>	<b>RISK MANAGEMENT</b>
15.00-15.30	<b>COFFEE BREAK</b>		
15.30-17.30	<b>PARALLEL SESSIONS</b>		
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>	<b>ROOM C 1.02B</b>
	<b>AI AND HUMAN MACHINE SIMULATION II</b>	<b>HOSPITAL MANAGEMENT LOGISTICS</b>	<b>POLICY AND BUSINESS SIMULATION II</b>
18.00-20.00	<b>FREE EVENING –POSSIBILITY TO VISIT THE ZOLLVEREIN</b>		



**TUESDAY, 23<sup>rd</sup> OCTOBER 2012**

08.30-17.00	<b>REGISTRATION</b>		
09.00-09.30	<b>WELCOME BY PROFESSOR HERMEIER, FOM – ROOM H2</b>		
09.30-10.30	<b>KEYNOTE ADDRESS BY DR. ROBERTO MONTEMANNI, IDSIA - ROOM H2</b>		
10.30-11.00	<b>COFFEE BREAK</b>		
11.00-13.00	<b>PARALLEL SESSIONS</b>		
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>	<b>ROOM C 1.02B</b>
	<b>SIMULATION IN THE NUCLEAR INDUSTRY</b>	<b>BIOLOGICAL SIMULATION I</b>	<b>VEHICLE ROUTING AND TRAFFIC</b>
13.00-14.00	<b>LUNCH BREAK</b>		
14.00-15.00	<b>PARALLEL SESSIONS</b>		
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>	<b>ROOM C 1.02B</b>
	<b>MAPLESIM TUTORIAL</b>	<b>BIOLOGICAL SIMULATION II</b>	<b>FACILITY PLANNING</b>
15.00-15.30	<b>COFFEE BREAK</b>		
15.30-18.00	<b>PARALLEL SESSIONS</b>		
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>	<b>ROOM C 1.02B</b>
	<b>EUROSIS ESM'2013 PREPARATORY MEETING</b>	<b>SIMULATION IN GENETICS AND QTL MAPPING</b>	<b>LOGISTICS ANALYSIS AND PROGNOSIS</b>
19.30 – 23.00	<b>CONFERENCE DINNER</b>		

**WEDNESDAY, 24<sup>th</sup> OCTOBER 2012**

<b>08.30-09.00</b>	<b>REGISTRATION</b>	
<b>09.00 10.00</b>	<b>PARALLEL SESSIONS</b>	
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>
	<b>MAPLESIM TUTORIAL</b>	<b>SUPPLY CHAIN SIMULATION</b>
<b>10.00-10.30</b>	<b>COFFEE BREAK</b>	
<b>10.30 12.30</b>	<b>PARALLEL SESSIONS</b>	
	<b>ROOM A 1.03A</b>	<b>ROOM B 1.03B</b>
	<b>ELECTRONIC NETWORKS</b>	<b>TRANSPORT SIMULATION</b>
<b>12.30-12.45</b>	<b>CLOSING SESSION AND BEST PAPER AWARD ROOM A</b>	

## NOTES

Notes

Welcome

**Monday, 22<sup>nd</sup> October 2012**

**HALLWAY**

**Registration**

**08.00 - 17.00**

**ROOM A**

**09.00 – 09.15**

**Opening ESM'2012 and Welcome**

**Welcome Address**

**Professor Matthias Klumpp  
FOM University of Applied Sciences  
ESM'2012 General Conference Chair**

**ROOM H2- 09.15-10.00**

**KEYNOTE SPEECH**

**Chair: Prof. Matthias Klumpp, FOM, Essen, Germany**

**KEYNOTE**



**Simulation and Modelling of Transport Networks and Logistic Nodes**  
Prof. Uwe Clausen, Fraunhofer Institute of Technology, Dortmund, Germany

# Monday, 22<sup>nd</sup> October 2012

**10.00 - 10.30**  
**COFFEE BREAK**

**10.30 – 12.30**

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**ROOM A – 1.03a - 10.30-12.30** **METH**  
**SIMULATION TOOLS**  
**Chair:** Prof. Matthias Klumpp, FOM, Essen, Germany

**TOOLS\_07**  
**A Survey on Multi-Formalism Performance Evaluation Tools**  
Simonetta Balsamo, Gian-Luca Dei Rossi and Andrea Marin ..... 15

**PAR\_01**  
**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

**TOOLS\_06**  
**Hybrid Systems Modelling and Simulation in DESTECs: a Co-Simulation Approach**  
Yunyun Ni and Jan F. Broenink..... 32

**PAR\_02**  
**From Sequence Diagrams UML 2 x TO FD DEVS**  
Roberto Pasqua, Damien Foures, Vincent Albert and Alexandre Nketsa ..... 37

**METH\_06**  
**Computer Simulation of Photonic Crystal Fibers Using FDTD Method**  
Raed K. Ibrahim and Oras A. Shareef ..... 44

**ROOM B- 1.03B - 10.30-12.00** **INDUSTRY**  
**PRODUCT DEVELOPMENT**  
**Chair:** Thomas Keuschen, FOM, Essen, Germany

**OPT\_03**  
**Graphical Modelling and Simulation of Product Development Projects**  
Sebastian Schneider, Ralf Laue, Arian Storch  
and Susanne Mütze-Niewöhner ..... 285

## Monday, 22<sup>nd</sup> October 2012

### METH\_01

#### Model-Based Design of Paper Handling in Printers

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

### N\_02

#### 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 Ahmed ..... 301

**ROOM C- 1.02B - 10.30-12.30**

**BUS**

### POLICY AND BUSINESS SIMULATION

Chair: Hella Abidi, FOM, Essen, Germany

### AGENT\_03

#### Provenance and Traceability in Agent Based Policy Simulation

Ulf Lotzmann and Maria A. Wimmer ..... 203

### AGENT\_01

#### An Agent-Based Simulation of Viral Marketing Effects in Social Networks

Axel Hummel, Heiko Kern, Stefan Kühne and Arndt Döhler ..... 212

### TOOLS\_05

#### A Business Language for a Distributed Simulation Framework

Carlos Bragança de Oliveira and António Carvalho Brito ..... 220

### WEB\_01

#### Analysis of Business Process Dynamic Models for Development of Simulation Modeling Service

Konstantin Aksyonov, Eugene Bykov, V. Kamelsky and Olga Aksyonova ..... 227

**12.30 - 14.00**

**LUNCH BREAK**

# Monday, 22<sup>nd</sup> October 2012

14.00 – 15.00

**ROOM A- 1.03A - 14.00-15.00** **AI**  
**FUZZY SIMULATION AND AI**  
**Chair:** Hella Abidi, FOM, Essen, Germany

**AI\_01**  
**Simulation of the Delphi Method with a Fuzzy Expert System**  
Richard Pohl and Christina Klüver..... 51

**AI\_02**  
**Heuristic Based Model Selection for a New Least Squares SVM Solution**  
Jingjing Zhang and Kang Li ..... 56

**ROOM B- 1.03B - 14.00-15.00** **AI & ENG**  
**AI AND HUMAN MACHINE SIMULATION I**  
**Chair:** Prof. Gregor Sandhaus, FOM, Essen, Germany

**FLUID\_02**  
**Failures Localization within Water Networks by Means of Neuronal Nets**  
Jan Studzinski and Izabela Rojek..... 64

**METH\_05\_RAND**  
**Using Guided Simulation to Improve a Model-Based Design Process of Complex Human Machine Systems**  
Stefan Puch, Martin Fränzle, Bertram Wortelen and Thomas Peikenkamp..... 159

**ROOM C- 1.02B -14.00-15.00** **MGMT**  
**RISK MANAGEMENT**  
**Chair:** Prof. Matthias Klumpp, FOM, Essen, Germany

**EMERG\_01**  
**SimReg: System Dynamics Simulation of Interregional Risk Management**  
Viveca Asproth, Stig C.Holmberg and Anita Håkansson ..... 185

**EMERG\_03**  
**Modeling and Simulation of Selected Operational IT Risks in the Banking Sector**  
Christoph Brandt, Francesco Santini, Natallia Kokash and Farhad Arbab..... 192

## Monday, 22<sup>nd</sup> October 2012

**15.00 - 15.30**  
**COFFEE BREAK**

**15.30 - 18.00**

**ROOM A- 1.03A - 15.30-17.00** **AI & IND**  
**AI AND HUMAN MACHINE SIMULATION II**  
**Chair: Sascha Bioly, FOM, Essen, Germany**

**OPT\_05**  
**Design and Optimisation of a Motion Cueing Algorithm for a Truck Simulator**  
E. Thöndel ..... 165

**METH\_08**  
**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

**GRAPH\_04**  
**Simultaneous Simulation of one Dimensional Flexible Objects in 3-D Graphical Simulation Environments**  
Frank Heinze, Juergen Rossmann and Bartholomaeus Rudak ..... 176

**ROOM B- 1.03B - 15.30-17.00** **MEDI LOGIS**  
**HOSPITAL MANAGEMENT LOGISTICS**  
**Chair: Thomas Keuschen, FOM, Essen, Germany**

**HEALTH\_04**  
**Step towards Simulation and Monitoring of Hospital Waiting Lists**  
 Marta Viana, Olivía Oliveira, António Abelha and José Machado..... 251

**HEALTH\_01**  
**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 Singh ..... 255



# Monday, 22<sup>nd</sup> October 2012

## INTEL\_01

### 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

## ROOM C- 1.02B - 15.30-17.30

**BUS**

### POLICY AND BUSINESS SIMULATION II

Chair: Hella Abidi, FOM, Essen, Germany

## METH\_13

### University Production Function Simulation

Matthias Klumpp..... 405

## EDU\_01

### Higher Education Productivity and Quality Modelling with Data Envelopment Analysis Methods

Golnaz Maleki, Matthias Klumpp and Marc Cuypers ..... 231

## TOOLS\_02

### Using Protocol State Machines to Support Simulation-Based Emulation Projects

Torben Meyer and Steffen Strassburger..... 234

## PETRI\_01

### Colored Petri Nets in the Simulation of ETL Standard Tasks: The Surrogate Key Pipelining Case

Diogo Silva, Orlando Belo and João M. Fernandes..... 242

**18.00 - 20.00**

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## FREE EVENING AND OPTIONAL VISIT TO THE “ZOLLVEREIN”

For those wishing to visit the “Zollverein” a shuttlebus will be available to take you on a tour of the industrial monument. The tour takes 2 hours.

## Tuesday, 23<sup>rd</sup> October 2012

HALLWAY

Registration

08.30 - 17.00

09.00 – 10.30

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ROOM H2- 09.00-09.30

**WELCOME**

**WELCOME PRESENTATION**

Chair: Prof. Matthias Klumpp, FOM, Essen, Germany

Professor Hermeier, FOM University of Applied Sciences, Essen, Germany

ROOM H2- 09.30-10.30

**KEYNOTE**

**KEYNOTE PRESENTATION**

Chair: Prof. Matthias Klumpp, FOM, Essen, Germany



**Scheduling Problems with Precedence Constraints: Models and Algorithms**

Roberto Montemanni ..... 5

10.30 - 11.00

**COFFEE BREAK**

11.00 - 13.00

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ROOM A- 1.03A - 11.00-13.00

**NUCLEAR**

**SIMULATION IN THE NUCLEAR INDUSTRY**

Chair: Prof. Torsten Marner, FOM, Essen, Germany

# Tuesday, 23<sup>rd</sup> October 2012

## PAR\_04

### A Distributed Simulation Tool on Windows Phone 7

Manuel Díaz, Daniel Garrido, Luis Llopis and Enrique Soler ..... 109

## TOOLS\_09

### Team\_K: A New Kernel for Soft Real Time Simulations

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

## FLUID\_01

### A CFD Approach for CANDU6 Fuel Bundle Subcooled Boiling Flow

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

## FLUID\_03

### 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

**ROOM B- 1.03B - 11.00-13.00**

**BIO**

## **BIOLOGICAL SIMULATION I**

**Chair:** Prof. Gurdev Singh, State Univ. of New York, Buffalo, USA

## HEALTH\_02

### Study of Different Patient Controlled Analgesia Modes using Hybrid Simulation Technique

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

## ECO\_03

### Simulations in Genome Mapping

David Mester, Yefim Ronin, Zeev Frenkel, Dina Mitkov and Abraham Korol..... 78

## METH\_10

### 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 Jaekel..... 84

## METH\_15

### Nonparametric Estimation of a Survival Function using Refined Descriptive Sampling

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

## Tuesday, 23<sup>rd</sup> October 2012

**ROOM C- 1.02B - 11.00-12.30** **TRAF**  
**VEHICLE ROUTING AND TRAFFIC**  
Chair: Prof. Dilay Celebi, ITU, Istanbul, Turkey

**TOOLS\_01**  
**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

**OPT\_06**  
**Vehicle Routing Planning and Simulation – A Hybrid Model for Observing Supply Chain System Performance**  
Sultan Ceren Salkın and Mahir Öner ..... 358

**OPT\_07**  
**Modelling and Simulation of Train Positioning within the Railway Network**  
Jan Fikejz and Antonín Kavička ..... 366

**13.00 - 14.00**  
**LUNCH BREAK**

**14.00 - 15.00**

**ROOM A- 1.03A 14.00-15.00** **TUT**  
**MAPLESIM 6 TUTORIAL**  
Chair: Thomas Richard, Maplesim



In this tutorial, Thomas Richard will demonstrate the latest version MapleSim 6, by explaining structure, fundamental concepts, capabilities, basic usage and hands-on examples (built-in and from scratch).

# Tuesday, 23<sup>rd</sup> October 2012

**ROOM B- 1.03B - 14.00-15.00** **BIO**  
**BIOLOGICAL SIMULATION II**  
**Chair:** Henrikas Pranevicius, Kaunas Univ.of Techn., Kaunas, Lithuania

**ECO\_01**  
**COASTGEN: A New Agent Based Modelling Tool for Invasive Spartina Species**  
James T. Murphy, Mark Johnson and Ray Walshe ..... 94

**METH\_03**  
**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

**ROOM C- 1.02B - 14.00-15.00** **CIM**  
**FACILITY PLANNING**  
**Chair:** Prof. Matthias Klumpp, FOM, Essen, Germany

**N\_01**  
**Challenges of using Discrete Event Simulation for Facility Planning in SMEs: A Case Study**  
Ruby Wai Chung Hughes, Rab Scott and Keith Ridgway..... 269

**METH\_12**  
**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

**15.00 - 15.30**  
**COFFEE BREAK**

**15.30 – 18.00**

**ROOM A- ROOM 1.03A -15.30-16.00** **EUROSIS**  
**EUROSIS MEETING AND BACK-UP SESSION**  
**Chair:** Philippe Geril, EUROSIS-ETI, Ostend, Belgium

**EUROSIS presentation and ESM preparatory meeting plus BACK-UP session**

## Tuesday, 23<sup>rd</sup> October 2012

**ROOM B- 1.03B- 15.30-17.30**

**WORK**

### **SIMULATION IN GENETICS AND QTL MAPPING**

**Chair:** Dr. David Mester, University of Haifa, Haifa, Israel

In genetics and breeding of great interest to QTL-mapping methods that were developed in the application package MultiQTL. Currently, this package is not only an effective tool for research in the field, but also a useful tool in teaching students specializing in applied genetics. The package presented to the next MultiQTL set of tools which are based on modeling:

**ROOM C- 1.02B - 15.30-18.00**

**LOGIS**

### **LOGISTICS ANALYSIS AND PROGNOSIS**

**Chair:** Hella Abidi, FOM, Essen, Germany

#### **LOGIS\_01\_AI**

**Application of New Techniques of Artificial Intelligence in Logistics:  
An Ontology-Driven Case-Based Reasoning Approach**

Martin Kowalski, Stephan Zelewski, Daniel Bergenrodt and Hubert Klüpfel ..... 323

#### **LOGIS\_02\_AI**

**Dynamic Scheduling in Logistics with Agent Based Simulation**

Matthias Klumpp and Gregor Sandhaus..... 329

#### **LOGIS\_03**

**Logistics Performance Measurement with Data Envelopment Analysis (DEA)**

Andreas Berrisch, Matthias Klumpp and Dilay Celebi ..... 337

#### **LOGIS\_07**

**Transport Volume and Green Transport Modes Prognosis with GAMS**

Sascha Bioly and Matthias Klumpp ..... 340

#### **LOGIS\_12**

**Integrating Consolidation Options in a New Conceptual Freight Transportation Framework**

Tabitha Maes, Katrien Ramaekers, An Caris, Gerrit K. Janssens  
and Tom Bellemans..... 345

**Tuesday, 23<sup>rd</sup> October 2012**

**CONFERENCE DINNER – 19.30 -23.00**

All participants are invited to the conference dinner which will be held from 19.30 to 23.00 at



**[Restaurant Wahlberg](#)**

**in der Philharmonie Essen**

**Huysenallee 53**

**D-45128 Essen**

**Tel: +49.(0)201.8122.8610**



The participants will either be able to walk to the dinner location from FOM leaving at 19.00 hours or be taken by shuttle bus from FOM to the dinner location

**Shuttle Bus 1: departure 18.45 p.m.**

**Shuttle Bus 2: departure 19.15 p.m.**

Conference Dinner - Tuesday

# Wednesday, 24<sup>th</sup> October 2012

## HALLWAY

Registration

08.30 - 09.00

09.00 – 10.00

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**ROOM A- 1.03A - 09.00-10.00**

**TUT**

**MAPLESIM 6 TUTORIAL**

Chair: Thomas Richard, Maplesim



As some of the participants might have missed the tutorial on Tuesday, Thomas Richard will repeat the demonstration of the latest version Maplesim 6.

**ROOM B - 1.03B - 09.00-10.00**

**LOGIS**

**SUPPLY CHAIN SIMULATION**

Chair: Prof. Matthias Klumpp, FOM, Essen, Germany

**GEO\_AGENT\_01**

**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 Castellanos ..... 309

**LOGIS\_10**

**Warehouse Design and Product Assignment and Allocation: a Mathematical Programming Model**

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

**10.00 - 10.30**

**COFFEE BREAK**



# Wednesday, 24<sup>th</sup> October 2012

10.30 - 12.30

**ROOM A- 1.03A - 10.30-12.30** **ELEC**  
**ELECTRONIC NETWORKS**  
Chair: Prof. Gregor Sandhaus, FOM, Essen, Germany

**GRAPH\_TOOL\_01**  
**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. Sampaio..... 131

**ANMT\_01**  
**Influence of Relative Traffic Distribution in Nodes with Blocking: An analytical Model**  
Herwig Bruneel, Willem Mélange, Bart Steyaert, Dieter Claeys and Joris Walraevens ..... 136

**TOOLS\_04**  
**RECSIM - A Simulator for reconfigurable Network on Chip Topologies**  
Alexander Logvinenko and Dietmar Tutsch ..... 144

**METH\_07**  
**Towards the Modelling of the Fault Tolerance Mechanism of the PIM SM Multicast Routing protocol in an IPTV Environment**  
Gábor Lencse and István Derka ..... 152

**ROOM B- 1.03B 10.30-12.30** **TRANS**  
**TERMINAL LOCATION SIMULATION**  
Chair: Prof. Matthias Klumpp, FOM, Essen, Germany

**LOGIS\_04**  
**The Transport of Palletized Goods via the Inland Waterway - An Optimal Location Analysis and Simulation**  
Koen Mommens and Cathy Macharis..... 377

**LOGIS\_05**  
**Optimizing LTL Terminal Performance by Simulation**  
Uwe Clausen, Peiman Dabidian, Daniel Diekmann, Ina Goedicke and Jan Kaffka..... 386

## Wednesday, 24<sup>th</sup> October 2012

### LOGIS\_06

#### Simulation of Transshipment Terminals in the Parcel Delivery Industry

Uwe Clausen and Daniel Diekmann ..... 394

### LOGIS\_11

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

Christina Westphal, Victor Kuchshaus, Philipp Düppe, Matthias Klumpp and Hella Abidi ..... 399

**ROOM A – 1.03A - 12.30 - 12.45**

**BEST PAPER**

**CLOSING SESSION AND BEST PAPER AWARD**

**Chair:** Prof. Matthias Klumpp, FOM, Essen, Germany

### EUROSIS

Philippe Geril, EUROSIS, Ostend, Belgium

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**At the University of Lancaster, October 23-25, 2013,  
Lancaster, United Kingdom  
Track proposals and tutorial proposals can be sent in by  
January 30<sup>th</sup>, 2013**

**Proposals for future event locations can be emailed to  
[philippe.geril@eurosis.org](mailto:philippe.geril@eurosis.org)**

**Information on all 2012-2013 EUROSIS  
Events can be found on  
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**ESM'2013 - Lancaster University-UK**

## Conference Site Maps

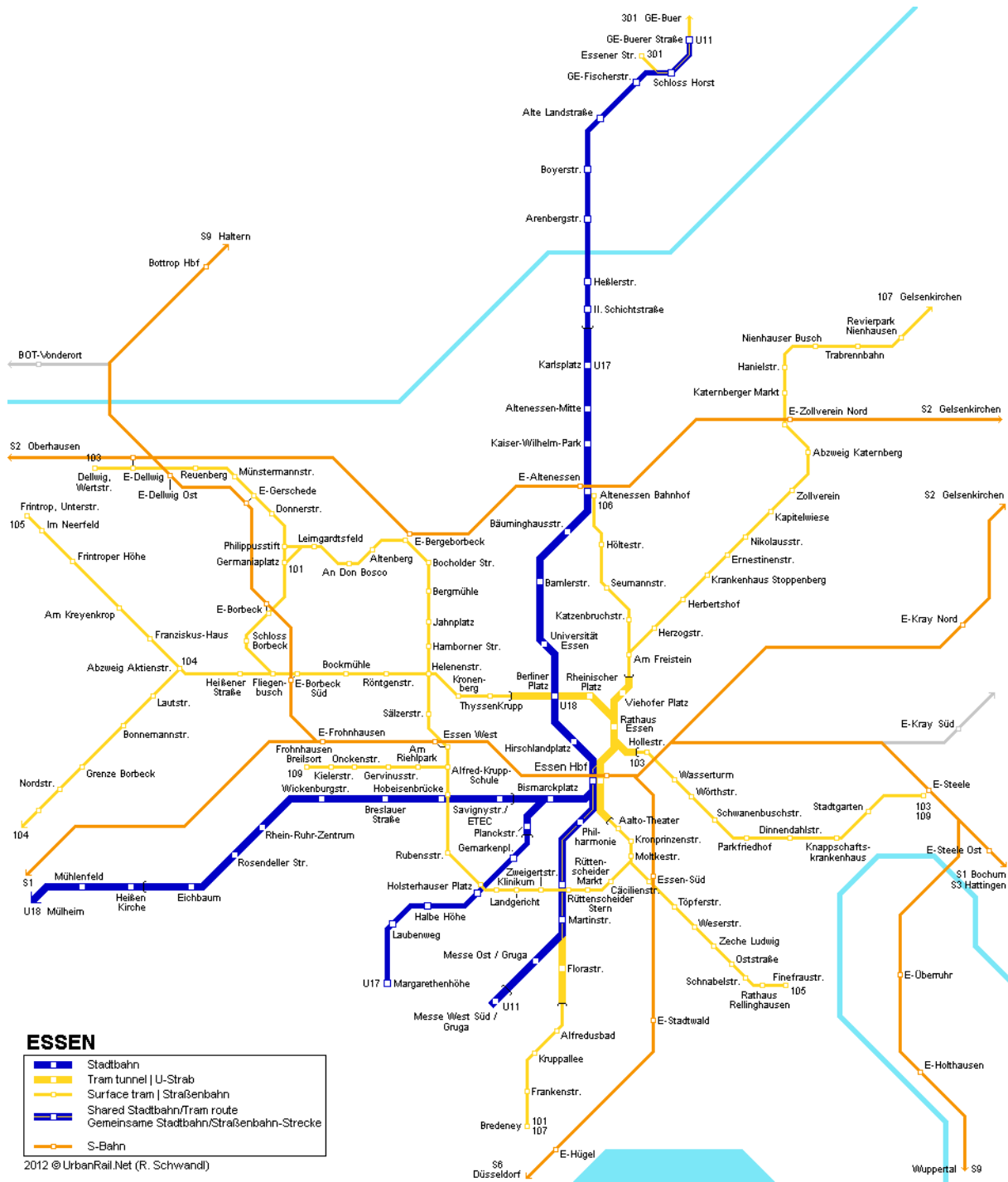
### FOM LOCATION MAP






<p><b>1 Studienberatung</b></p> <p><b>2 Info-Veranstaltungen</b></p> <p><b>3 Lehrveranstaltungen</b></p> <p>FOM Hochschule für Oekonomie &amp; Management gemeinnützige GmbH Essen Schulungs- und Hörsaalzentrum I (SHZ I) Herkulesstraße 32 45127 Essen</p>	<p><b>• Postanschrift</b></p> <p>FOM Hochschule für Oekonomie &amp; Management gemeinnützige GmbH Essen Schulungs- und Hörsaalzentrum I (SHZ I) Herkulesstraße 32 45127 Essen</p>
<p><b>3b Lehrveranstaltungen</b></p> <p>FOM Hochschule für Oekonomie &amp; Management gemeinnützige GmbH Essen Europa-Center Am Fernmeldeamt 29 45127 Essen</p>	

# Conference Site Maps



The Essen Public Transport Map

# eurosis

EUROSIS was borne out of discussions with the European Community to set up a new kind of Society, which would be project-driven instead of driven by pure membership and conferences.

The aim of the Society is to set up and manage topic related Technical Committees which will link directly to European Projects in the field of computer simulation and related areas and to act as a knowledge pool for future European Networks of Excellence, like MOSAIC.

If you would like to receive more information about EUROSIS, please contact

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