

Final Program



24-26, October 2005



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General Information

1. Conference Location

The **ESM®2005** conference is held at the entrance building of the University of Porto. **Faculdade de Engenharia da Universidade do Porto Rua Dr. Roberto Frias, s/n 4200-465 Porto PORTUGAL, Tel: +351 22 508 14 00, Fax: +351 22 508 14 40** The registration desk will be placed near the main entrance on Monday morning onwards, where registration will start from 7.30 a.m. till 5.00 p.m. On Tuesday registration will be from 8.00 a.m. - 5.00 p.m. with Wednesday registration only from 8.30 a.m.-09.00. a.m

ALL MAPS ARE AT THE BACK OF THIS PROGRAMME

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

lunch	€20
conference dinner:	€50

4. Registration

The **ESM®'2005-MESM2005** Registration Desk will be open for information and registration:

Monday, October 24.....7.30 a.m. to 5.00 p. m. in the hallway.

Tuesday, October 25.....8.00 a.m. to 5.00 p. m. in the hallway

Wednesday, October 268.30 a.m. to 9.00 a. m. in the hallway

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.** (Extra copies, are available on a **cash and carry basis ONLY** at special rates during **ESM®'2005-MESM'2005**)

General Information

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

ESM'2005 Proceedings	€50
MESM'2005 Proceedings	€35

6. Meeting Rooms

The four meeting rooms and Main Hall will be indicated by EUROSIS signs at the event. Hereafter designated in the final programme as ROOM A, B, C and D. A special section of the registration area will be envisaged for informal meetings of EUROSIS at 3.30 p.m. on Monday the 24th of October and on Tuesday the 25th of October.

7. Need Help?

Please see the conference desk for your questions

8. Social Events and Lunches

All registrants are invited to

All **buffet lunches** on Monday and Tuesday served at the University of Porto faculty grill.

The **Get-Together Party** will be held on Monday evening at the University of Porto

The Conference Dinner

All participants are invited to the conference dinner on Tuesday the 25th of October. The conference dinner will be held

As we need to give an exact number of participants for the dinner event, we would appreciate **your confirmation at the desk before Monday evening.**

9. How to reach the University

- **The Faculty of Engineering of University of Porto's** (FEUP) is around 4 kilometres from the city centre and can be reached in several ways:

By: car: The easiest way is to get the circle around the town (via de cintura interna) and follow the way to **HOSPITAL DE SÃO JOÃO**, in the direction BRAGA. Hospital de São João is very near FEUP, anyone can inform you if you ask. The problem is usually space to park.

By Metro: This would be the most interesting way for reaching the conference, but unfortunately the FEUP station is not yet ready. Anyhow, if you like to walk 300 m, take the Metro **YELLOW** line (**Line D**) in the centre of

General Information

the town in the direction of "**P. Universitário**" and get out in this **last stop**. Once there, ask to anyone for Faculdade de Engenharia (or Hospital de São João).

By bus: Use bus number 6.

By taxi: Within the city, the rates charged are those shown in the meter at the end of the ride. But the average fare is calculated at €0.35 per Km after leaving the city limits. Any tolls (round trip) are paid by the client. On Saturdays, Sundays and national holidays, and Monday to Friday between 10 p.m. and 6 a.m., a 20% rate applies to normal fares.

10. Other

Best Paper Award and Paper Legend

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'2005-MESM2005** conference.

ALL SESSION CHAIRPERSONS IN THIS PROGRAM ARE PROVISIONAL

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://biomath.ugent.be/~eurosis> and <http://www.eurosis.org>**

MONDAY, 24th OCTOBER 2005

07.30-17.00	REGISTRATION			
08.30-09.30	OPENING SESSION AND INVITED SPEECH BY MICHAEL PIDD			
09.30-10.00	COFFEE BREAK			
09.45-12.15	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
	SIMULATION METHODOLOGY	ELECTRONICS SIMULATION	PARALLEL SIMULATION	WELCOME BY MARWAN AL-AKAIDI
				LOGISTICS SIMULATION
12.00-13.30	LUNCH BREAK			
13.30-15.15	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
	INVITED SPEECH EUGENE KINDLER	FLUID FLOW SIMULATION	ANALYTICAL AND NUMERICAL SIMULATION I	NEURAL NETWORKS IN INDUSTRIAL APPLICATIONS
	SIMULATION TOOLS I			
15.00-15.30	COFFEE BREAK			
15.30-17.30	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
	SIMULATION TOOLS II	ENERGY SIMULATION	ANALYTICAL AND NUMERICAL SIMULATION II	COMPLEX SYSTEMS SIMULATION
17.30 – 18.30 GET-TOGETHER-PARTY				

TUESDAY, 25th OCTOBER 2005

08.00-17.00	REGISTRATION			
08.30-09.30	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
	AI BASED DECISION SUPPORT	INVITED SPEECH PIET KOMMERS	PETRI NETS SIMULATION I	IMAGE AND DATA MODELLING I
09.30-10.00	COFFEE BREAK			
10.00-12.00	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
	AI BASED MANUFACTURING WITH AGENTS	SIMULATION AND TRAINING	PETRI NETS SIMULATION II	IMAGE AND DATA MODELLING II
12.00-13.30	LUNCH BREAK			
13.30-15.15	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
	AI BASED TRANSPORT CONTROL	INVITED SPEECH RENATE SITTE	PETRI NETS SIMULATION III	PHONE NETWORK SIMULATION
		SIMULATION USING UML		
15.00-15.30	COFFEE BREAK			
15.15-17.45	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
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			TRAFFIC ANALYSIS SIMULATION	
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WEDNESDAY 26th OCTOBER 2005

08.30-09.00	REGISTRATION			
09.00 10.00	PARALLEL SESSIONS			
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	HOSPITAL LOGISTICS SIMULATION	SIMULATION VALIDATION AND ANALYSIS I	MACHINE SIMULATION	ENVIRONMENTAL MODELLING
10.00-10.30	COFFEE BREAK			
10.30 12.30	PARALLEL SESSIONS			
	ROOM A	ROOM B	ROOM C	ROOM D
	GENETIC ALGORITHM SIMULATION	SIMULATION VALIDATION AND ANALYSIS II	OBJECT ORIENTED SIMULATION AND VIRTUAL ENVIRONMENTS	BIOLOGICAL MODELLING
12.30-12.45	CLOSING SESSION AND BEST PAPER AWARD ROOM A			

NOTES

Monday, 24th October 2005

HALLWAY

Registration

07.30 - 17.00

MAIN HALL

08.30 - 09.30

Opening ESM[®]2005 and Welcome

Welcome Address

Dr. J. Manuel Feliz Teixeira and Prof. A.E Carvalho Brito

University of Porto

ESM'2005, General Conference Chairs

Welcome by

Philippe Geril

EUROSIS, Ghent University

EUROSIS Coordinator

Welcome

Monday, 24th October 2005

ROOM A

08.45 - 09.30

KEYNOTE SPEECH

Chair: J. Manuel Feliz Teixeira, University of Porto, Porto, Portugal
Modelling & simulation to support public policy: performance measurement & improvement

Michael Pidd

09.30 - 10.00

COFFEE BREAK

Monday, 24th October 2005

09.45 – 12.15



ROOM A- 09.45-12.15

SIMULATION METHODOLOGY

Chair: Antonio E.S.Carvalho Brito, University of Porto, Porto, Portugal

METH-10-ANALYSIS

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Maria João M. Vasconcelos and João Manuel R. S. Tavares7

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Giordana Bonini and Massimo Garuti 13

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Valerie Demers, Pierre L'Ecuyer and Bruno Tuffin 25

AI-03

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Alexander Ostanin 587



ROOM B- 10.00-12.00

ELECTRONICS SIMULATION

Chair: Renate Sitte, Griffith University, Gold Coast, Australia

METH-03

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Jacob Engel, Daniel Lacks and Taskin Kocak..... 413

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A. Nentchev, R. Sabelka, W. Wessner and S. Selberherr 420

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METH-08

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Rene Heinzl, Philipp Schwaha, Michael Spevak and Tibor Grasser 425

METH-23

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Elaf Al-Ani, Rene Heinzl, Philipp Schwaha, Tibor Grasser and Siegfried Selberherr..... 430

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PARALLEL SIMULATION

Chair: Dimosthenis Anagnostopoulos, University of Athens, Greece



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David Versmisse and Eric Ramat 520

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Chair: Marwan Al-Akaidi, De Montfort University, Leicester, UK



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Gabriella Maria Acaccia, Rinaldo Carlo Michelini and Nicola Qualich..... 41

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D. Ben Halima and M. Chtourou 49

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LUNCH BREAK

13.30 – 15.15

ROOM A- 13.30-15.15

INVITED SPEECH AND SIMULATION TOOLS I

Chair: J. Manuel Feliz Teixeira, University of Porto, Porto, Portugal

INV-01

Reflective Simulation: Simulation of Systems that Simulate
Eugene Kindler

SIMULA-01

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Jaroslav Sklenar 35

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Jan Klír and Jiří Šafařík 38

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Diganta Bhusan Das and Mark Lewis 448

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ANALYTICAL AND NUMERICAL SIMULATION I

Chair: Gerhard Hasslinger, Deutsche Telekom, Darmstadt, Germany



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Louis-Marie Le Ny 465

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M. Spevak and T. Grasser 474

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Chair: Kasim al-Aubidy, Philadelphia University, Amman, Jordan



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COFFEE BREAK

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Chair: Pierre L'Ecuyer, Universite de Montreal, Montreal, Canada



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Herminia I. Calvete, Carmen Galé, María-José Oliveros
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Chair: Vahid Nassehi, Loughborough University, Loughborough, UK



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SOCIAL

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Tuesday, 25th October 2005

HALLWAY

Registration

08.00 - 17.00

08.30 – 09.30

ROOM A- 08.30-09.30

AI BASED DECISION SUPPORT WITH AGENTS

Chair: Paulo Cortez, University do Minho, Guimareas, Portugal



METH-38-AI

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INVITED SPEAKER

Chair: J. Manuel Feliz Teixeira, University of Porto, Porto, Portugal



INV-02

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Piet Kommers

ROOM C- 08.30-09.30

PETRI NETS SIMULATION I

Chair: Carmen Bobeanu, Ghent University, Ghent, Belgium



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Yet another Smart Process EditoR

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Chair: Marwan Al-Akaidi, De Montfort University, Leicester, UK

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Chair: Jose Machado, University of Minho, Braga, Portugal



AGENT-01

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SIMULATION AND TRAINING

Chair: J. Manuel Feliz Teixeira, University of Porto, Porto, Portugal



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PETRI NETS SIMULATION II

Chair: Carmen Bobeanu, Ghent University, Ghent, Belgium



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AI BASED TRANSPORT CONTROL

Chair: Antonio E.S.Carvalho Brito, University of Porto, Porto, Portugal



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Norbert Adamko and Valent Klima 123

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Ruy L. Milidiu, Frederico dos S. Liporace and Roberto P. Cavalcante 136

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Chair: J. Manuel Feliz Teixeira, University of Porto, Porto, Portugal



INV-03

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Renate Sitte

METH-36

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Stefan Sarstedt, Dominik Gessenharter, Jens Kohlmeyer, Alexander Raschke and Matthias Schneiderhan 66

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Stefan Sarstedt 61

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Chair: Alexandre Nketsa, LAAS, Toulouse, France

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Franco Cicirelli, Angelo Furfaro and Liberio Nigro 564

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Carmen Veronica Bobeanu and Hendrik Van Landeghem 579



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Chair: Kasim Al-Aubidy, Philadelphia University, Amman, Jordan

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Parallel Sessions - Tuesday

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Chair: Isabel Praca, 1st Superior de Porto, Porto, Portugal



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Chair: Joao Tavares, FEUP, University of Porto, Porto, Portugal



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Chair: Louis Mary Le Ny, IRISA, Rennes cedex, France

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SIMULATION OF PID CONTROLLERS

Chair: Nabil Derbel, University of Sfax, Sfax, Tunisia

ELEC-05

On the Particularities of Hysteresis Band Widths in Takahashi DTC Strategy: the So-called Focal Speeds

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NEUR-03

PID Neural Tuning for Integrating Processes

R. Chibani and M. Chtourou 95

CONFERENCE DINNER 8.30 p.m. – 11.30 p.m.

All participants will meet at a designated point, in order to take the bus, which will be indicated at the conference desk.

Wednesday, 26th October 2005

ROOM A

Registration

08.30 - 09.00

09.00 – 10.00

ROOM A- 09.00-10.00

HOSPITAL LOGISTICS SIMULATION

Chair: J. Manuel Feliz Teixeira, University of Porto, Porto, Portugal



ENV-09-MED

Hospital Maxi-Emergency protocol testing by a Double Dynamics Simulation Model

Giorgio Romanin-Jacur 367

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Michel Gourgand, Fateh Mebrek and Alain Tanguy 372

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SIMULATION VALIDATION AND ANALYSIS I

Chair: Jaroslav Sklenar, University of Malta, Malta



VAL-01

An Integrated Decision Support System for Improving ATP Performances in S&ME

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Integrated Modeling and Simulation of Development Processes

Bernhard Kausch, Nicole Schneider, Torsten Licht, Peter Schmitz,

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Chair: Kasim Al-Aubidy, Philadelphia University, Amman, Jordan

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A Simple Double Hysteretic Cycle Spin Model

Paulo Pinto and A. Almeida 381

METH-41

Static Models of Load Induction Motor

Luis Aromataris, Marcos Galetto, Jorge Martinez, Gustavo Rodriguez
and Diego Moitre 384



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Chair: Alexandre Nketsa, LAAS, Toulouse, France

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Chair: Eric Gouarderes, UPPA, Pau, France

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A Genetic Algorithm for solving the P-Medium Problem

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AI-06

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SIMULATION VALIDATION AND ANALYSIS II

Chair: Jaroslav Sklenar, University of Malta, Malta



METH-33

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Chair: Pessoa Magalhaes, University of Porto, Porto, Portugal



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BIOLOGICAL MODELLING

Chair: Giorgio Romanin-Jacur, University of Padova, Padova, Italy



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Wednesday, 26th October 2005

ROOM A- 12.30-12.45



**CLOSING SESSION AND ESM2005-MESM2005 BEST PAPER
AWARD**

Chair: Philippe Geril, Ghent University, Ghent, Belgium

**Presenting Alexandre Nketsa, LAAS, Toulouse, France (ESM®2006 General
Conference Chair)**

**SEE YOU ALL
NEXT OCTOBER 23-25 AT ESM®'2006
AT LAAS, IN TOULOUSE, FRANCE**

OR AT THE OTHER EUROSIS EVENTS FOR 2006

**FUBUTEC 2006 AT INSEAD IN FONTAINEBLEAU,
FRANCE (MARCH 8-10)**

**EUROMEDIA-ECEC-2006 IN ATHENS,GREECE
(APRIL 17-19)**

**ISC'2006 AT THE UNIVERSITY OF PALERMO, IN
PALERMO, ITALY (JUNE 5-7)**

FOODSIM'2006 IN NAPLES, ITALY (JUNE 15-17)

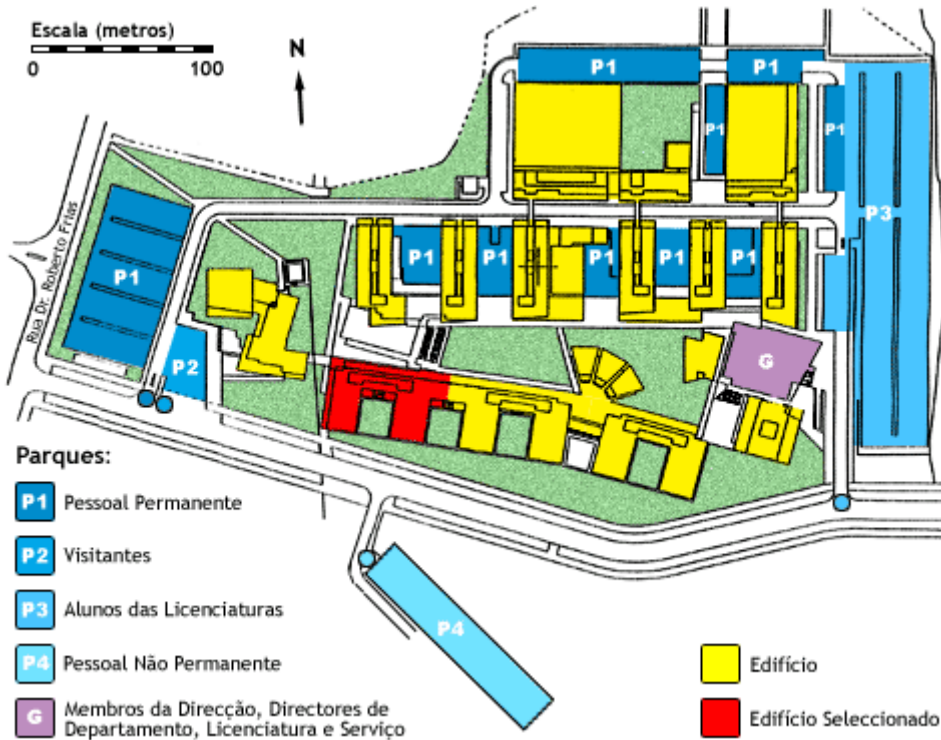
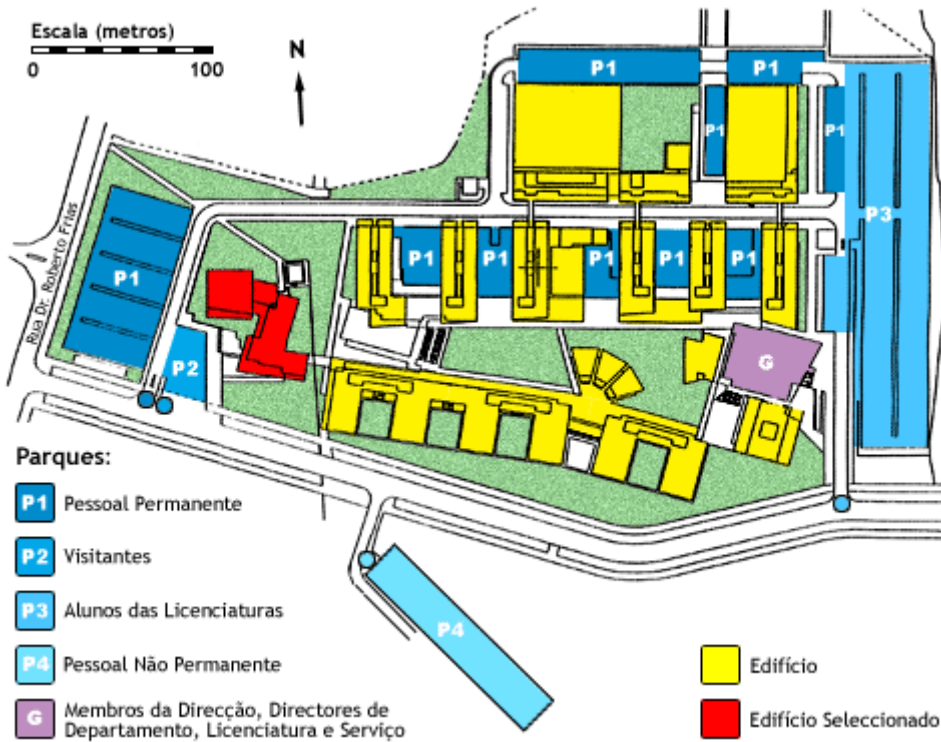
GAMEON-NA Summer 2006, Monterey, USA

**GAMEON 2006, Braunschweig, Germany, November-
December 2006)**

Parallel Sessions - Wednesday

Conference Site Maps

Plan of the Conference Area



The ESM[®]2005 will be held in the buildings designated in RED

Conference Site Maps



How to get to Porto University

NOTES



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 new Society will be to set up 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, etc...

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

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