Please find all information to register on the homepage:

http://www.pe-imprs.mpg.de/summerschool2011

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How to reach the MPI:

- With the Deutsche Bahn (DB) AG to station Magdeburg-Hauptbahnhof (www.bahn.de)
- From Magdeburg City Carré/Hauptbahnhof take tram number 1 into direction Lerchenwuhne or tram number 8 into direction Neustädter See
- Please get off at station Alter Markt and change into tram number 5 into direction Messegelände
- Please get off at station Askanischer Platz
- From there you walk towards Sandtorstrasse where you will find the Max Planck Institute on the right side
- Current timetables: Magdeburger Verkehrsbetriebe www.mvbnet.de

MAX-PLANCK-GESELLSCHAFT

OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG

Large Scale Networks in Engineering and Life Sciences

2nd Summer School of the
IMPRS for Analysis, Design, and Optimization
in Chemical and Biochemical Process Engineering
Magdeburg

September 26–30, 2011

The modeling, analysis, and control of complex large scale systems are becoming increasingly important. Large scale systems are often the result of networked interactions between an ample number of sub systems. Examples of large scale networked systems span from biochemical reaction networks, communication networks such as mobile phone networks and the internet, complex chemical production processes, neural networks, fish and bird swarms, up to circuit networks in microprocessors. The objective of the 2011 IMPRS summer school is to provide insights and tools for the modeling, analysis, optimization, and control of large scale networks in life sciences and engineering.

The lectures during this summer school will lay out basic concepts and theoretical foundations of network theory and discuss applications in different scientific areas. The aim is to identify common concepts, to understand the underlying mathematical ideas, and hopefully some inspiring discussions will evolve across the borders of the various disciplines.

We are inviting PhD students and advanced Master students to apply for participation. Please check the program in this flyer and apply via the online form on the summer schools homepage:

http://www.pe-imprs.mpg.de/summerschool2011

IMPRS Magdeburg
International Max Planck Research School for Analysis, Design, and Optimization in Chemical and Biochemical Process Engineering

MAX-PLANCK-INSTITUT FÜR DYNAMIK KOMPLEXER TECHNISCHER SYSTEME MAGDEBURG

Scientific Program

Monday, Sept. 26

9:00h Opening of the Summer School	Prof. Udo Reichl
9:15h – 12:30h Modeling Concepts for Chemical and Biochemical Processes	Prof. Kai Sundmacher Dr. Richard Hanke-Rauschenbach
14:00h – 17:30h Optimization and Large Networks	Prof. Stephen Wright
Evening: Get-together	

Tuesday, Sept. 27

9:00h – 12:30h Circuit Modelling with Differential-Algebraic Equations	Prof. Timo Reis
14:00h – 17:30h Control of Networked Systems with Applications to Multiagent Robotics	Prof. Magnus Egerstedt
Evening: Music / Theatre (tba)	

Wednesday, Sept. 28

9:00h – 12:30h Techniques for multi-time-scale analysis of chemical reaction networks	Prof. Hans Othmer
13:30h Excursion	

Thursday, Sept. 29

9:00h – 12:30h Metabolic and Stoichiometric Network Analysis: Foundations and Introduction to CellNetAnalyzer	Dr. Steffen Klamt
14:00h- 17:30h Hybrid Modeling for Systems Biology: Theory and Practice	Prof. Rui Oliveira
Evening: Farewell Party	

Friday, Sept. 30

9:00h – 12:30h Neuronal Model Reduction: Cells, Synapses and Circuits	Prof. Steven Cox