Summer School
of the International Doctorate Program

Identification, Optimization and Control
with Applications in Modern Technologies

and

Meeting of the Elite Programs

Identification, Optimization and Control
with Applications in Modern Technologies

Bavarian Graduate School
of Computational Engineering

TopMath

Bildungszentrum Freising
July 27-29, 2009
Invited Speakers

Dipl. Math. Christian Hartwanger  
EADS ASTRIUM GmbH  
Telecommunications Satellites,  
ATS54 Antenna, 81663 Munich

Dr. Andreas Bergmann  
EPCOS AG  
SAW RD BT DT  
anzinger Strasse 13, 81671 Munich

Venue

Kardinal Döpfner Haus  
Bildungszentrum Freising  
Domberg 27  
85354 Freising  
www.bildungszentrum-freising.de

Excursion

Leibniz Rechenzentrum  
der Bayerischen Akademie der Wissenschaften  
Boltzmannstraße 1  
Garching bei München

Siemens AG  
Building 33, Room 644  
Munich Perlach
Program

Monday, July 27

10:00   Welcome
       G. Leugering, Erlangen
10:15-11:15 Towards node-based shape optimization: a fictitious energy constraint
           P. Steinmann, Erlangen
11:15-12:15 Challenges in multiscale modelling of particle systems
           W. Peukert, Erlangen
12:15-13:30 Lunch
13:30-14:15 Fields of optimization application in the development of satellite
           antennas
           C. Hartwanger, EADS ASTRIUM GmbH
14:15-15:00 Modeling, optimization and application of SAW components
           A. Bergmann, EPCOS AG
15:00-15:30 Coffee Break
15:30-16:00 Model predictive control of hyperbolic and parabolic PDEs
           N. Altmüller, Bayreuth
16:00-16:30 Controllability aspects of open quantum systems: a Lie-theoretical
           approach
           I. Kurniawan, Würzburg
16:30-17:00 Bilateral teleoperation of a planetary rover under communication
           constraints
           Zhihao Xu, Würzburg
17:00-17:30 On the global convergence of a primal-dual interior point algorithm for
           MPECs with an augmented Lagrangian merit function
           Thorsten Spickenreuther, Bayreuth
18:00   Dinner
Tuesday, July 28

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Leibniz Rechenzentrum
der Bayerischen Akademie der Wissenschaften
Boltzmannstraße 1
Garching bei München

10:00-11:30  Leibniz-Rechenzentrum

Workshop

Modeling, Simulation and Optimization — Key Competences for Design, Management and Operation of Technical Systems

Siemens AG
Munich Perlach, Building 33, Room 644

13:30-13:45  Modeling, Simulation and Optimization at Siemens
             M. Hofmeister, Siemens AG
13:45-14:15  Optimizing placement programs for SIPLACE placement systems
             A. Pfaffinger, Siemens AG
14:15-15:00  Pedestrian Streams – Modeling, Simulation and Optimization
             M. Davidich, D. Hartmann, Siemens AG
15:00-15:15  Break
15:15-15:45  Robust Design: The Mathematical Treatment of Uncertainties
             U. Wever, Siemens AG
15:45-17:00  Neural Networks in System Identification and Forecasting
             H.G. Zimmermann, Siemens AG
17:00-17:30  Discussion
19:00  Dinner
Wednesday, July 29

09:00-09:10  International Doctorate Program “Identification, Optimization and Control with Applications in Modern Technologies”
G. Leugering, Erlangen

09:10-09:30  Bavarian Graduate School of Computational Engineering
H.-J. Bungartz, Munich

09:30-10:00  The mortar method for non-matching grids
S. Sicklinger, T. Both, Munich

10:00-10:30  Theta fitter: The financial fitting toolbox
J. Benk, Munich

10:30-11:00  Coffee Break

11:00-11:30  Homogenization and variational 2D to 1D dimension reduction in finite elasticity
S. Neukamm, Munich

11:30-12:00  Numerical methods for the computation of generalized Nash equilibria
A. von Heusinger, Würzburg

12:00-13:30  Lunch

13:30-14:00  Well-posedness theory and optimal boundary controllability in context of equations of nonlinear acoustics
Slobodan Veljovic, Erlangen

14:00-14:30  Trajectory planning and optimal control for formations of autonomous robots
M. Saska, Prague

14:30-15:00  Motion coordination and control in systems of nonholonomic autonomous vehicles
M. Hess, Würzburg