Section 17: Control Theory and Optimization

Invited Lectures

Wednesday, 19 August — H 2032

16:15 – 17:00 **Jorge Nocedal,** Northwestern University, Evanston, USA
Nonlinear Optimization: The Interplay Between Mathematical Characterizations and Algorithms *(I: p.193)*
Chair: Margaret H. Wright

17:15 – 18:00 **Jochem Zowe,** Universität Erlangen, Erlangen, Germany
What is the Best Material? — The Answer of a Mathematician *(I: p.196)*
Chair: Josef Stoer

Thursday, 20 August — H 2032

14:00 – 14:45 **Alexander Schrijver,** CWI and University of Amsterdam, Amsterdam, Netherlands
Routing and timetabling by topological search *(I: p.194)*
Chair: Günter M. Ziegler

15:00 – 15:45 **Michel X. Goemans,** CORE, Louvain-La-Neuve, Belgium and MIT, Cambridge, USA
Semidefinite programming and combinatorial optimization *(I: p.193)*
Chair: András Frank

Friday, 21 August — H 2032

16:15 – 17:00 **William J. Cook (also Section 16),** Rice University, Houston, USA
The Traveling Salesman Problem *(I: p.186)*
Chair: Günter M. Ziegler

17:15 – 18:00 **Jan C. Willems,** University of Groningen, Groningen, The Netherlands
Open Dynamical Systems and their Control *(I: p.195)*
Chair: Fritz Colonius

Saturday, 22 August — H 2032

16:15 – 17:00 **William R. Pulleyblank,** IBM T. J. Watson Research Center, Yorktown Heights, USA
Advances in Solving Airline Crew Pairing Optimization Problems *(I: p.194)*
Chair: Rolf H. Möhring

Short Communications and Poster Sessions

Short Communications — Wednesday, 19 August

Applied Optimal Control — **H 2033**
Chair: Fredi Tröltzsch

14:00 – 14:15 **Hans Josef Pesch,** Technische Universität Clausthal, Clausthal, Germany
Optimal Control of Large Scale DAE Systems in Chemical Engineering *(p.347)*

14:15 – 14:30 **Fabian Flores-Bazan,** Universitdad de Concepción, Concepcion, Chile
Optimal solutions to some variational problems arising in Economics *(p.341)*

14:30 – 14:45 **Bernd Kugelmann,** Universität Greifswald, Greifswald, Deutschland
Robust and Optimal Feedback-Control in Flight Dynamics *(p.344)*

Distributed Parameter Systems I		H 2033
Chair: Dan Tiba		
15:00 – 15:15	**Pierre, F. Aubert,** INSA-Lyon, Vileurbanne, France *Shape optimisation of geometrically nonlinear 3d beams and shells*	*(p.336)*
15:15 – 15:30	**Raja Dziri,** Faculté des Sciences de Tuni, Tunisi, Tunisia *Dynamical shape optimazation in Navier-Stokes equations*	*(p.339)*
15:30 – 15:45	**Michael Hinze,** Technische Universität, Berlin, Germany *On the construction of feedback controllers for parabolic equations with an application to the control of fluid flow*	*(p.343)*

Short Communications — Thursday, 20 August

Nonlinear Optimization I		H 2033
Chair: Jürgen Guddat		
16:15 – 16:30	**Leonid Faybusovich,** University of Notre Dame, Notre Dame, IN, USA *Interior-point algorithms and Euclidean Jordan algebras*	*(p.341)*
16:30 – 16:45	**Bernd Kummer,** Humboldt–Universität, Berlin, Germany *Metric Regularity in Optimization: Trivial and Nontrivial Situations*	*(p.344)*
16:45 – 17:00	**Ider Tsevendorj,** Mongolian State University, Ulaanbaatar, Mongolia *Sufficient Global Optimality Conditions for Nonconvex Nonsmooth Problems*	*(p.353)*

Convex Optimization		H 2033
Chair: Bernd Kummer		
17:15 – 17:30	**Anatoly Antipin,** Russian Academy of Sciences, Moscow, Russia *To Solving of Equilibrium Programming Problems*	*(p.335)*
17:30 – 17:45	**Evgeny G. Belousov,** Moscow State University, Moscow, Russia *On Hausdorff continuity of convex polynomial mappings*	*(p.336)*
17:45 – 18:00	**Patrick L. Combettes,** City University, New York, NY, USA *Some convergence principles in convex optimization*	*(p.338)*

Short Communications — Friday, 21 August

Optimality Conditions I		H 2033
Chair: Bernd Kugelmann		
14:00 – 14:15	**Vassili Dikoussar,** Computing Centre RAS, Moscow, Russia *Optimal Control with Control-State Constraints*	*(p.339)*
14:30 – 14:45	**Olga O. Vasilieva,** Universidad del Valle, Cali, Colombia *Optimality Conditions of Singular Controls*	*(p.354)*

Variational Inequalities/Fractal Graphs		H 2013
Chair: Walter Gomez Bofill		
14:00 – 14:15	**Walter Gomez Bofill,** Humboldt–Universität, Berlin, Germany *On the regularity of one-parametric variational inequalities*	*(p.341)*
14:15 – 14:30	**Olga A. Zinchenko,** Karachai-Cherkes Technological Institute, Cherkessk, Russia *The extreme graphs problems*	*(p.356)*
14:30 – 14:45	**Anatolii Ivanovich Perov,** Voronezh State University, Voronezh, Russia *Discrete matrix Lur'e equation (singular case)*	*(p.347)*

Controllability and Nonlinear Systems **H 2033**
Chair: Shanjian Tang

15:00 – 15:15	**Serikbai A. Aisagaliev,** Kazakh State University, Almaty, Kazakhstan *Theory and constructive methods of solving the boundary problems of controllability processes (p.335)*
15:15 – 15:30	**Zbigniew J. Bartosiewicz,** Technical University of Bialystok, Bialystok, Poland *Local observability, ideals, and finiteness conditions (p.336)*
15:30 – 15:45	**Shanjian Tang,** Fudan University, Shanghai, China *Brockett's problem of classification of finite-dimensional estimation algebras for Nonlinear Filtering Systems (p.352)*

Multiobjective Optimization **H 2013**
Chair: Jan-J. Ruckmann

15:00 – 15:15	**Jürgen Guddat,** Humboldt–Universität, Berlin, Germany *New Embeddings for Nonlinear Multiobjective Optimization Problems I (p.342)*
15:15 – 15:30	**Stefan M. Mititelu,** Technical University of Civil, Bucharest, Romania *Optimality and duality in nonsmooth vector programming (p.345)*

Short Communications — Saturday, 22 August

Optimization in Function Spaces **H 2013**
Chair: Valeri V. Obukhovskii

14:00 – 14:15	**Andres, M. Encinas,** UPC, Barcelona, Spain *Existence and Approximation of Gauss Variational Problem in Potential Theory (p.340)*
14:15 – 14:30	**Stanisław Migórski,** Jagiellonian University, Cracow, Poland *Optimal control of hemivariational inequalities (p.345)*
14:30 – 14:45	**Valeri V. Obukhovskii,** Voronezh State Pedagogical, Voronezh, Russia *On some methods in a periodic problem for a functional differential inclusion in a Banach space (p.346)*

Stochastic Control/Controllability **H 2013**
Chair: Galina A. Timofeeva

15:00 – 15:15	**Yuri L. Sachkov,** Program Systems Institute, Pereslavl-Zalessky, Russia *Controllability of right-invariant systems on solvable Lie groups (p.349)*
15:15 – 15:30	**Leonid E. Shaikhet,** Donetsk State University, Donetsk, Ukraine *Stability of stochastic difference equations with varying delays (p.350)*
15:30 – 15:45	**Galina A. Timofeeva,** Ural State Academy of Railway Transport, Ekaterinburg, Russia *Effective control and observation in the multistage stochastic optimization problem (p.352)*

Nonlinear Optimization II **H 2033**
Chair: Leon A. Petrosjan

17:15 – 17:30	**Alexei V. Blinov,** Mari State University, Yoshkar-Ola, Russia *The combined methods of centers with using reduced gradient for solving nonlinear optimization problems (p.337)*
17:30 – 17:45	**R. Enkhbat,** Mongolian State University, Ulaanbaatar, Mongolia *Global Optimality Conditions for some class of Nonconvex Optimization Problems (p.340)*
17:45 – 18:00	**Leon A. Petrosjan,** St.-Petersburg State University, St.-Petersburg, Russia *Time-consistancy problem in differential games (p.348)*

Short Communications — Monday, 24 August

0/1 Problems — H 2033
Chair: Jannet A. Tambieva

16:15 – 16:30 **Friedrich Eisenbrand,** MPI Informatik, Saarbrücken, Germany
On the Chvátal rank of polytopes in the 0/1 cube *(p.339)*

16:30 – 16:45 **Anzor D. Kasaev,** Karachai-Cherkes Technological Institute, Cherkessk, Russia
Assigment Problem in Consideration of Discounting *(p.344)*

16:45 – 17:00 **Jannet A. Tambieva,** Karachai-Cherkes Technological Institute, Cherkessk, Russia
Research of 4-Cliques Problem *(p.351)*

Algorithms and Complexity Issues — H 2033
Chair: Naum Zuselevich Shor

17:15 – 17:30 **Vitaly A. Perepelitsa,** Karachai-Cherkes Technological Institute, Cherkessk, Russia
Fractal Graphs and their Properties *(p.347)*

17:30 – 17:45 **Elena V. Popova,** Karachai-Cherkes Technological Institute, Cherkessk, Russia
Estimates of Complexity of the Vector Ordering Problem *(p.348)*

17:45 – 18:00 **Naum Zuselevich Shor,** Institute of Cybernetics, Kiev, Ukraine
Methods of improving dual bounds with the use of functionally superfluous constraints in polynomial and boolean problems *(p.350)*

Short Communications — Tuesday, 25 August

Distributed Parameter Systems II — H 2033
Chair: Mikhail Zelikin

14:00 – 14:15 **Andrzej Just,** Technical University of Lodz, Lodz, Poland
A Non-linear Hyperbolic Control Problem with Dirichlet Boundary Condition — Convergence of Galerkin Approximation *(p.343)*

14:15 – 14:30 **Dan Tiba,** Romanian Academy, Bucharest, Romania
Recent Progress in the Analysis and Optimization of Plates *(p.352)*

14:30 – 14:45 **Mikhail Zelikin,** Department of Mathematics and Mechanics, Moscow, Russia
Riccati-type PDE and Multidimensional Calculus of Variations *(p.356)*

Stochastic Programming I — H 2033
Chair: Werner Römisch

15:00 – 15:15 **Vladimir Norkin,** Glushkov Institute of Cybernetics, Kiev, Ukraine
Stochastic optimization of discontinuous functions *(p.346)*

15:15 – 15:30 **Nicole Groewe-Kuska,** Humboldt–Universität, Berlin, Germany
Confidence intervals for optimal values of simple recourse models *(p.341)*

15:30 – 15:45 **Rüdiger Schultz,** Mathematical Institute, Leipzig, Germany
Mixed-Integer Linear Programming under Uncertainty *(p.350)*

Game Theory — H 2013
Chair: Hans Josef Pesch

16:15 – 16:30 **Arkadii A. Chikrii,** Cybernetics Institute, Kyiv, Ukraine
– to be announced – *(p.338)*

16:30 – 16:45 **Greta Tsolakovna Chikrii,** Cybernetics Institute, Nat. Ac. Sci. Ukraine, Kyiv, Ukraine
Linear Differential Games with Variable Delay of Information *(p.337)*

16:45 – 17:00 **Victor V. Zakharov,** Saint-Petersburg University, Saint-Petersburg, Russia
Subcore and reduced cooperative games *(p.355)*

Optimality Conditions II **H 2013**
Chair: Henrikas Pragarauskas

17:15 – 17:30	**Oleg I. Nikonov,** Ural State Technical University, Ekaterinburg, Russia *Methods of Guaranteed Control Theory in Finance*	*(p.345)*
17:30 – 17:45	**Oleg Vladimirovich Vasiliev,** Irkutsk State University, Irkutsk, Russian Federation *High quality computational methods for optimal control problems*	*(p.353)*
17:45 – 18:00	**Henrikas Pragarauskas,** Institute of Mathematics and Informatics, Vilnius, Lithuania *Integrodifferential Bellman equations*	*(p.348)*

Short Communications — Wednesday, 26 August

Stochastic Programming II **H 2033**
Chair: Vladimir Norkin

14:00 – 14:15	**René Henrion,** WIAS Berlin, Berlin, Germany *Quantitative stability of convex stochastic programs with probabilistic constraints*	*(p.342)*
14:15 – 14:30	**Werner Römisch,** Humboldt–Universität, Berlin, Germany *Perturbation Analysis of Stochastic Programming Problems*	*(p.349)*
14:30 – 14:45	**Roger Fandom Noubiap,** Humboldt–Universität, Berlin, Germany *A Minimax Algorithm for Calculating Statistical Tests under Generalized Moment Conditions*	*(p.340)*

Miscellaneous I **H 2013**
Chair: Mohamed Ali Hammami

14:00 – 14:15	**Tomáš Roubíček,** Charles University, Prague, Czech Republic *Relaxation in optimization theory and variational calculus*	
14:15 – 14:30	**Mohamed Ali Hammami,** Faculté des Sciences de Sfax, Sfax-Tunisie, Tunisia *Stabilization of a certain class of nonlinear systems via an observer*	

Semi-infinite and Semi-definite Optimization **H 2033**
Chair: René Henrion

15:00 – 15:15	**Jan-J. Ruckmann,** Technische Universität München, München, Germany *On Generalized Semi-infinite Optimization Problems*	*(p.349)*
15:15 – 15:30	**Oliver Stein,** Aachen University of Technology, Aachen, Germany *On level sets of marginal functions*	*(p.351)*
15:30 – 15:45	**Ivo Nowak,** Humboldt–Universität, Berlin, Germany *Bézier-Semidefinite Relaxations of nonconvex quadratic programs over a simplex*	*(p.346)*

Miscellaneous II **H 2013**
Chair: Roland Wessäly

15:00 – 15:15	**Ingo Bremer,** WIAS, Berlin, Germany *Experiences with the Optimization of Batch Distillation Processes*	
15:15 – 15:30	**Rafail Gabasov,** Byelorussian State University, Minsk, Belarus *Synthesis of optimal dynamical systems*	
15:30 – 15:45	**Roland Wessäly,** Konrad-Zuse-Zentrum für Informationstechnik, Berlin, Germany *New inequalities for a capacitated survivable network design problem*	*(p.355)*

Poster Session — Wednesday, 26 August

16:15 – 18:00 **MA 144**

Shamsha A. Aipanov, Kazakh State University, Almaty, Kazakhstan
The solutions of some problems of optimal control of spacecraft *(p.335)*

Vladimir Borisov, Moscow State (Lomonosov) University, Cherkizovo, Russia
Bundles with chattering extremals *(p.337)*

Anna Debinska-Nagorska, Technical University of Lodz, Lodz, Poland
A Non-linear Hyperbolic Control Problem with Neumann Boundary Condition — Convergence of Galerkin Approximation *(p.338)*