ANNUAL REPORT
2007

Institut für Statistik
und Decision Support Systems
Universität Wien

Department of Statistics
and Decision Support Systems
University of Vienna

Universitätsstraße 5/9, A-1010 Wien
Brünnerstraße 72, A-1210 Wien

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Vienna, March 2008
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Teaching and research activities

The main teaching duty of the Department of Statistics and Decision Support Systems comprises the education of students at the Faculty of Economics, Business Administration and Statistics as well as at the Faculty of Computer Science in the fields of Mathematics, Statistics, Operations Research, Econometrics, and several areas of Computer Science.


Research is conducted in the areas of Mathematical Statistics; Applied Statistics, Computational Statistics; Probability Theory; Stochastic Methods of Financial Mathematics; Game Theory; Econometrics; Time Series Analysis; Global, Nonlinear, Combinatorial and Stochastic Optimization; Scheduling and Project Management; Modeling and Simulation of Complex Systems; Software Engineering; Information Systems and Statistical Methods in Theoretical Computer Science.

Faculty

Senior faculty

Bomze, Immanuel Operations Research, Stochastic Modelling
Futschik, Andreas Asymptotic Statistics, Applied Statistics, Bioinformatics
Klein, Irene Stochastic Finance
Pflug, Georg Ch. Mathematical Statistics, Stochastic Optimization and Risk Management
Pötscher, Benedikt M. Econometrics, Statistics and Time Series Analysis
Reschenhofer, Erhard Time Series Analysis, Model Selection
Schachinger, Werner Optimization, Probabilistic Analysis of Algorithms

Junior faculty

Baierl, Andreas Statistical Methods in Quantitative Genetics
Frommlet, Florian Applied Mathematics and Statistics
Gach, Florian Mathematical Statistics
Mirkov, Radoslava Stochastic Optimization
Nickl, Richard Probability and Statistics in Infinite Dimensions
Schneider, Ulrike Statistics and Combinatorial Optimization
Wozabal, Nancy Statistics and Optimization
Externally funded faculty

Boitard, Simon  Statistical Genetics
Broussev, Nikola  Electricity Markets, Electricity Derivatives, Stochastic Programming, Game Theory
Ha Quang, Minh  Machine Learning, Statistical Genetics
Hochreiter, Ronald  Optimization under Uncertainty, Stochastic Programming, Financial Risk Management, Service Oriented Computing
Katzensteiner, Stefan  Combinatorial and Stochastic Optimization, Multiobjective Optimization
Kiesling, Elmar  Interactive Multicriteria Decision Analysis
Kilianová, Soňa  Operations Research, Financial Mathematics
Ljubic, Ivana  Algorithmic Operations Research, Algorithm Engineering
Putz, Peter  Combinatorial Optimization, Network Design
Rath, Stefan  Operations Research
Reiter, Peter  Operations Research (Algorithms for Deterministic and Stochastic Combinatorial Optimization Problems)
Tomazic, Alessandro  Combinatorial Optimization (Graph Algorithms)
Wiesinger, Clemens  Stochastic Programming, Workflow Engineering/Application Integration, Web Services/Software Components, Financial Data Structures
Wozabal, David  Stochastic Optimization, Non-Convex Optimization, Robust Optimization
Zelle, Hildegard  Stochastic Optimization

Papers published in 2007

Baierl, Andreas; Derndorfer, Eva; Vogel-Lahner, Theresia; Mayrhofer, Dieter; Pichler, Christian; Klostermann, Andrea; Reiter, Heiko: Lebensmittelkonsum und Nährstoffaufnahme von Studierenden im ländlichen Raum. *Journal für Ernährungsmedizin* 9, 13-18 (2007)

Baierl, Andreas; Futschik, Andreas; Bogdan, Małgorzata; Biecek, Przemysław: Locating multiple interacting quantitative trait loci using robust model selection. *Computational Statistics and Data Analysis* 51(12), 6423-6434 (2007)


Evans, Neal; Baierl, Andreas; Semenov, Mikhail A.; Gladders, Peter; Fitt, Bruce D. L.: Range and severity of a plant disease increased by global warming. *Journal of the Royal Society Interface*. Epub ahead of print (2007)


Pagitz, Max; Frommlet, Florian; Schwendenwein, Ilse: Evaluation of biological variance of cystatin C in comparison with other endogenous markers of glomerular filtration rate in healthy dogs. *Journal of Veterinary Internal Medicine* 21(5), 936-942 (2007)


Thurnher, Dietmar; Erovic, Boban M.; Frommlet, Florian; Brannath, Werner; Ehrenberger, Klaus; Jansen, Burkhard; Selzer, Edgar; Grasl, Matthäus C.: Challenging a dogma - surgery yields superior long-term results for T1a squamous cell carcinoma of the glottic larynx compared to radiotherapy. *European Journal of Surgical Oncology* (in press, available online since 8th Aug 2007)

Zak, Małgorzata; Baierl, Andreas; Bogdan, Małgorzata; Futschik, Andreas: Locating multiple interacting quantitative trait loci using rank-based model selection. *Genetics* 176, 1845-1854 (2007)

**Papers finished in 2007**

Bianchi, Leonora; Dorigo, Marco; Gambardella, Luca M.; Gutjahr, Walter J.: A survey on metaheuristics for stochastic combinatorial optimization.

Bogdan, Małgorzata; Frommlet, Florian; Biecek, Przemyslaw; Cheng, Ryan; Ghosh, Jayantha K.; Doerge, Rebecca W.: Extending the Modified Bayesian Information Criterion (mBIC) to dense markers and multiple interval mapping. Accepted for publication in: *Biometrics*

Boitard, Simon; Schlötterer, Christian; Futschik, Andreas: Detecting selective sweeps using Hidden Markov Models on sequence data.

Bomze, Immanuel; Frommlet, Florian; Locatelli, Marco: Gap, cosum, and product properties of the \( \theta \) bound on the clique number. *TR 2007-06*

Bomze, Immanuel; Frommlet, Florian; Locatelli, Marco: The first cut is the cheapest: improving SDP bounds for the clique number via copositivity. *TR 2007-05* (revised version of *TR 2006-04*)

Bomze, Immanuel; Schachinger, Werner: Multi-Standard Quadratic Optimization Problems. *TR 2007-12*


Bomze, Immanuel: Perron-Frobenius property of copositive matrices, and a block copositivity criterion. TR 2007-15


Chen, Si; Ljubic, Ivana; Raghavan, S.: The regenerator location problem. TR 2007-20. Submitted to: Networks

Chimani, Markus; Kandyba, Maria; Ljubic, Ivana; Mutzel, Petra: Obtaining Optimal k-Cardinality Trees Fast. To appear in: SIAM 2008 Proceedings of the Ninth Workshop on Algorithm Engineering and Experiments (ALENEX)

Chimani, Markus; Kandyba, Maria; Ljubic, Ivana; Mutzel, Petra: Strong Formulations for 2-Node Connected Steiner Network Problems. TR 2007-19


Dörner, Karl; Gutjahr, Walter J.; Nolz, Pamela: Multi-criteria location planning for public facilities in tsunami-prone coastal areas.

Frommlet, Florian: A Novel Approach to Ordinal Regression without Latent Variables. Submitted to: Information Sciences

Futschik, Andreas; Gach, Florian: On the Inadmissibility of Watterson’s Estimate. Accepted for publication in: Theoretical Population Biology


Giné, Evarist; Nickl, Richard: Uniform Limit Theorems for Wavelet Density Estimators (preprint)

Gröchenig, Karlheinz; Pötscher, Benedikt M.; Rauhut, Holger: Learning Trigonometric Polynomials from Random Samples and Exponential Inequalities for Eigenvalues of Random Matrices (manuscript 2007)

Gutjahr, Walter J.; Katzensteiner, Stefan; Reiter, Peter; Stummer, Christian; Denk, Michaela: Competence-driven project portfolio selection, scheduling and staff assignment.

Gutjahr, Walter J.; Sebastiani, Giovanni: Runtime analysis of ant colony optimization with best-so-far reinforcement. Accepted for publication in: Methodology and Computing in Applied Probability

Ha Quang, Minh: Error Estimations in Learning Theory via Effective Dimensionality.

Hochreiter, Ronald; Mirkov, Radoslava; Pflug, Georg Ch.: Tree Approximations of Dynamic Stochastic Programs: Numerical Issues.


Isogai, Eiichi A.; Futschik, Andreas: On the convergence rate of sequential fixed-width confidence intervals for normal parameters. To appear in: Statistics and Probability Letters

Klein, Irene: No asymptotic free lunch reviewed in the light of Orlicz spaces. To appear in: *Séminaire de Probabilités* 41


Mirkov, Radoslava; Pilipovic, Stevan; Selesi, Dora: Generalized Stochastic Processes in Algebras of Generalized Functions with Examples.

Ploberger, Werner; Reschenhofer, Erhard: Testing for cycles in time series.


Pötscher, Benedikt M.; Schneider, Ulrike: On the Distribution of Adaptive LASSO Estimator (manuscript 2007)

Pötscher, Benedikt M.: Confidence Sets Based on Sparse Estimators Are Necessarily Large (manuscript 2007)

Reschenhofer, Erhard: Combining generalized Kolmogorov-Smirnov tests.

Reschenhofer, Erhard: Frequency domain modeling with piecewise constant spectra.

Reschenhofer, Erhard: Super-whiteness of returns spectra.

Schneider, Ulrike: A Tabu Search Application for a Scheduling Problem.

Stummer, Christian; Kiesling, Elmar; Gutjahr, Walter J.: A multicriteria decision support system for competence-driven project portfolio selection.

Tseng, Paul; Bomze, Immanuel; Schachinger, Werner: A First-Order Interior-Point Method for Linearly Constrained Smooth Optimization. TR 2007-17


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### Research stays at other institutions

<table>
<thead>
<tr>
<th>Person</th>
<th>Institution</th>
<th>Research topic</th>
<th>Duration in weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boitard, Simon</td>
<td>University of Wrocław, Poland</td>
<td>QTL mapping, Population genetics</td>
<td>1</td>
</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>FB Informatik, Universität Dortmund, Germany</td>
<td>Solution of the crossing number problem</td>
<td>1</td>
</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>DEIS, Università della Calabria, Rende (Cosenza), Italy</td>
<td>Quadratic and conic optimization with application</td>
<td>2</td>
</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>Department of Mathematics, University of Coimbra, Portugal</td>
<td>Copositive programming approach to the complementary eigenvalue problem</td>
<td>1</td>
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<tr>
<td>Frommlet, Florian</td>
<td>Purdue University, USA</td>
<td>Visiting Assistant Professor</td>
<td>23</td>
</tr>
<tr>
<td>Person</td>
<td>Institution</td>
<td>Research topic</td>
<td>Duration in weeks</td>
</tr>
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<tr>
<td>Futschik, Andreas</td>
<td>Tamkang University, Taiwan</td>
<td>Multiple Comparison Procedures</td>
<td>1</td>
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<tr>
<td>Futschik, Andreas</td>
<td>Niigata University, Japan</td>
<td>Sequential Statistics</td>
<td>3</td>
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<tr>
<td>Futschik, Andreas</td>
<td>University of Tokyo, Japan</td>
<td>Statistical challenges in genetics</td>
<td>1</td>
</tr>
<tr>
<td>Ha Quang, Minh</td>
<td>University of California, Los Angeles, USA</td>
<td>Mathematics of Knowledge and Search Engines</td>
<td>15</td>
</tr>
<tr>
<td>Hochreiter, Ronald</td>
<td>Department of Computing, Imperial College, London, Great Britain</td>
<td>Stochastic Programming, Computational Finance, Robust Optimization, Service Composition</td>
<td>3</td>
</tr>
<tr>
<td>Ljubic, Ivana</td>
<td>Department of Computer Science, University of Dortmund, Germany</td>
<td>Exact Approaches to Network Design Problems</td>
<td>1</td>
</tr>
<tr>
<td>Mirkov, Radoslava</td>
<td>University of Bergamo, Italy</td>
<td>Stochastic Programming School 2007</td>
<td>1</td>
</tr>
<tr>
<td>Nickl, Richard</td>
<td>Department of Mathematics, University of Connecticut, USA</td>
<td>Postdoctoral Fellow</td>
<td>Since Aug 2006</td>
</tr>
<tr>
<td>Pötscher, Benedikt M.</td>
<td>Department of Economics, Universidad Carlos III, Madrid, Spain</td>
<td>Model Selection</td>
<td>3</td>
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</table>

**Presentations at conferences**

<table>
<thead>
<tr>
<th>Person</th>
<th>Conference</th>
<th>Title of presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boitard, Simon</td>
<td>ESF workshop “Population genetics modelling and habitat fragmentation: separating recent and ancient events for efficient conservation”, Instituto Gulbenkian de Ciências, Oeiras, Portugal</td>
<td>Detection of selective sweeps using Hidden Markov Models</td>
</tr>
<tr>
<td>Boitard, Simon</td>
<td>Workshop on Statistical Approaches to Inference of Selection, Konrad Lorenz Institut Altenberg, Austria</td>
<td>Detection of selective sweeps using Hidden Markov Models</td>
</tr>
<tr>
<td>Boitard, Simon;</td>
<td>Workshop on Statistical Approaches to Inference of Selection, Konrad Lorenz Institut Altenberg, Austria</td>
<td>New Methods for Detecting Selective Sweeps based on Hidden Markov Models and Support Vector Machines</td>
</tr>
<tr>
<td>Pötscher, Immanuel</td>
<td>11th Combinatorial Optimization Workshop, Aussois, France (invited)</td>
<td>The first cut is the cheapest – improving SDP bounds for the clique number</td>
</tr>
<tr>
<td>Person</td>
<td>Conference</td>
<td>Title of presentation</td>
</tr>
<tr>
<td>-----------------</td>
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</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>Learning and Intelligent Optimization (LION 2007), Andalo (Trento), Italy</td>
<td>Multi-Standard Quadratic Optimization Problems and their role in (un-)supervised Machine</td>
</tr>
<tr>
<td></td>
<td>(contributed)</td>
<td>Learning</td>
</tr>
<tr>
<td></td>
<td>(in invited special session)</td>
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<tr>
<td>Bomze, Immanuel</td>
<td>Workshop “New problems and innovative methods in nonlinear optimization”,</td>
<td>Recent developments in</td>
</tr>
<tr>
<td></td>
<td>Erice, Italy (invited plenary)</td>
<td>copositive programming</td>
</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>9th International Symposium on Operations Research (SOR 07), Nova Gorica,</td>
<td>Recent developments in</td>
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<tr>
<td></td>
<td>Slovenia (invited plenary)</td>
<td>copositive programming</td>
</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>Workshop “Games in communication II”, Bielefeld, Germany (invited)</td>
<td>Fixation conditions in finite population games</td>
</tr>
<tr>
<td>Broussev, Nikola</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>Electricity Swing Options: Behavioral Models and Pricing</td>
</tr>
<tr>
<td>Frommlet, Florian</td>
<td>Optimization 2007, Porto, Portugal</td>
<td>The first cut is the cheapest</td>
</tr>
<tr>
<td>Futschik, Andreas</td>
<td>5th International Conference on Multiple Comparison Procedures (MCP 2007), Vienna, Austria</td>
<td>On estimates of R-values in selection problems</td>
</tr>
<tr>
<td>Gutjahr, Walter J.</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>Analysis of stochastic metaheuristics</td>
</tr>
<tr>
<td>Gutjahr, Walter J.</td>
<td>4th Symposium on Stochastic Algorithms, Foundations, and Applications (SAGA 2007), Zurich, Switzerland</td>
<td>A VNS algorithm for noisy problems and its application to project portfolio analysis</td>
</tr>
<tr>
<td>Anselm, Eder;</td>
<td>Kongress der Österreichischen Gesellschaft für Soziologie 2007, Graz, Austria</td>
<td>Emergence of structures in two-person interactions: a simulation model of two learning agents, and some applications</td>
</tr>
<tr>
<td>Gutjahr, Walter J.</td>
<td>Culminating Conference, UCLA, Lake Arrowhead, USA</td>
<td>Kernels and Effective Dimensionality</td>
</tr>
<tr>
<td>Ha Quang, Minh</td>
<td>Stochastic Programming School 2007, Bergamo, Italy</td>
<td>Approximation of stochastic processes in stochastic programming applications</td>
</tr>
<tr>
<td>Hochreiter, Ronald</td>
<td>EvoStar 2007, Valencia, Spain</td>
<td>Evolutionary Stochastic Portfolio Optimization</td>
</tr>
<tr>
<td>Hochreiter, Ronald</td>
<td>4th International Conference on Computational Management Science, Geneva, Switzerland</td>
<td>Contemporary modeling of multi-stage stochastic programming problems</td>
</tr>
<tr>
<td>Person</td>
<td>Conference</td>
<td>Title of presentation</td>
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<tr>
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<tr>
<td>Hochreiter, Ronald</td>
<td>Power Systems Modelling 2007, Athens, Greece</td>
<td>Multi-stage stochastic decision modeling in electricity portfolio management</td>
</tr>
<tr>
<td>Hochreiter, Ronald</td>
<td>22nd European Conference on Operational Research (EURO XXII), Prague, Czech Republic</td>
<td>Multi-stage Stochastic Optimization and Pension Fund Management</td>
</tr>
<tr>
<td>Hochreiter, Ronald</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>Simplified stage-based modeling of multi-stage stochastic programming problems</td>
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<tr>
<td>Hochreiter, Ronald</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>Stochastic Optimization and Pension Fund Modeling</td>
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<tr>
<td>Stummer, Christian; Kiesling, Elmar</td>
<td>INFORMS 2007 International Meeting, Rio Grande, Puerto Rico</td>
<td>Interactive Decision Support for Competence-Driven Project Selection in a Research Center</td>
</tr>
<tr>
<td>Kilianová, Soňa</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>Optimal pension fund management under multi-period risk minimization</td>
</tr>
<tr>
<td>Klein, Irene</td>
<td>Workshop on Advanced Mathematical Methods for Finance, Vienna, Austria</td>
<td>Market free lunch and large financial markets</td>
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<tr>
<td>Ljubic, Ivana</td>
<td>Learning and Intelligent Optimization (LION 2007), Andalo (Trento), Italy</td>
<td>Connected Facility Location: VNS, Tabu-Search and Branch-and-Cut</td>
</tr>
<tr>
<td>Ljubic, Ivana</td>
<td>Optimization 2007, Porto, Portugal</td>
<td>Facility Location and Steiner Trees</td>
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<tr>
<td>Ljubic, Ivana</td>
<td>Hybrid Metaheuristics 2007, Dortmund, Germany</td>
<td>A Hybrid VNS for Connected Facility Location</td>
</tr>
<tr>
<td>Chen, Si; Ljubic, Ivana; Raghavan, S.</td>
<td>INFORMS Annual Meeting, Seattle, USA</td>
<td>The Regenerator Location Problem</td>
</tr>
<tr>
<td>Mirkov, Radoslava</td>
<td>22nd European Conference on Operational Research (EURO XXII), Prague, Czech Republic</td>
<td>Tree Approximations of Dynamic Stochastic Programs: Numerical Aspects</td>
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<tr>
<td>Mirkov, Radoslava</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>Tree Approximations of Dynamic Stochastic Programs</td>
</tr>
<tr>
<td>Mirkov, Radoslava</td>
<td>Stochastic Programming and Optimization: Modeling and Applications, Brno, Czech Republic</td>
<td>Tree Approximations of Dynamic Stochastic Programs: Numerical Results</td>
</tr>
<tr>
<td>Nickl, Richard</td>
<td>Joint Statistical Meetings, Salt Lake City, USA</td>
<td>Uniform Central Limit Theorems for Density Estimators</td>
</tr>
<tr>
<td>Nickl, Richard</td>
<td>7th Meeting on Mathematical Statistics, Marseille, France</td>
<td>Adaptive Estimation of a Distribution Function and its Density in Sup-Norm Loss</td>
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<tr>
<td>Person</td>
<td>Conference</td>
<td>Title of presentation</td>
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<tr>
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<tr>
<td>Pflug, Georg</td>
<td>22nd European Conference on Operational Research (EURO XXII), Prague, Czech Republic (stream organizer)</td>
<td>Risk contributions</td>
</tr>
<tr>
<td>Pflug, Georg</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria (organizer)</td>
<td>Nested distributions</td>
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<tr>
<td>Pflug, Georg</td>
<td>STOchastic Programming and OPTImization: Modeling and Applications (STOPTIMA 2007), Brno, Czech Republic (invited)</td>
<td>Multiperiod risk measures</td>
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<tr>
<td>Pflug, Georg</td>
<td>Workshop/Conference on Advanced Mathematical Methods for Finance (AMaMeF), TU Vienna, Austria</td>
<td>Electricity swing options</td>
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<tr>
<td>Pflug, Georg</td>
<td>Models of Credit and Operational Risks in the Financial Sector (MCOR), Bolzano, Italy (organizer)</td>
<td>Multiperiod risk measures</td>
</tr>
<tr>
<td>Pflug, Georg</td>
<td>IFIP/IIASA/GAMM Workshop on Coping with Uncertainty (CwU), Laxenburg, Austria</td>
<td>Catastrophe modeling</td>
</tr>
<tr>
<td>Pötscher, Benedikt M.</td>
<td>Statistical models for financial data II, TU Graz, Austria (invited)</td>
<td>Sparse estimators and the oracle property, or the return of Hodges’ estimator</td>
</tr>
<tr>
<td>Pötscher, Benedikt M.</td>
<td>Colloquium in Honor of Istvan Berkes, TU Graz, Austria (invited)</td>
<td>On a Theorem of Berkes and Horvath</td>
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<tr>
<td>Pötscher, Benedikt M.</td>
<td>Reassessing the Paradigms of Statistical Model-Building, Mathematisches Forschungsinstitut Oberwolfach, Germany (invited)</td>
<td>On the Distribution of Penalized Maximum Likelihood Estimators</td>
</tr>
<tr>
<td>Reiter, Peter</td>
<td>Metaheuristic International Conference, Montreal, Canada</td>
<td>Multi-Objective Stochastic Project Portfolio and Scheduling Using Metaheuristics</td>
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<tr>
<td>Schachinger, Werner</td>
<td>Optimization 2007, Porto, Portugal</td>
<td>Multi-Standard Quadratic Optimization Problems: Local Search, Global Bounds and Dual Attainability</td>
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<tr>
<td>Person</td>
<td>Conference</td>
<td>Title of presentation</td>
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<tr>
<td>Wozabal, David</td>
<td>22nd European Conference on Operational Research (EURO XXII), Prague, Czech Republic</td>
<td>Optimization under Ambiguity</td>
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<tr>
<td>Wozabal, David</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>Non-Parametric Model Uncertainty in Stochastic Programming</td>
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<tr>
<td>Wozabal, Nancy</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>On the asymptotic distribution of coherent law-invariant acceptability functionals</td>
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<tr>
<td>Wozabal, Nancy</td>
<td>22nd European Conference on Operational Research (EURO XXII), Prague, Czech Republic</td>
<td>Asymptotic properties of coherent law-invariant acceptability functionals</td>
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<tr>
<td>Zelle, Hildegard</td>
<td>11th Conference on Stochastic Programming (SPXI), Vienna, Austria</td>
<td>A Modern Asset Liability Management System for Austrian Pension Funds</td>
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**Talks given at other institutions**

<table>
<thead>
<tr>
<th>Person</th>
<th>Institution</th>
<th>Title</th>
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<tbody>
<tr>
<td>Boitard, Simon</td>
<td>University of Wrocław, Poland</td>
<td>Detection of selective sweeps using Hidden Markov Models</td>
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<tr>
<td>Boitard, Simon</td>
<td>University of Wrocław, Poland</td>
<td>Linkage disequilibrium mapping of quantitative trait loci</td>
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<tr>
<td>Boitard, Simon</td>
<td>University of Montpellier, France</td>
<td>Cartographie de gènes à caractères quantitatifs par déséquilibre de liaison</td>
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<tr>
<td>Boitard, Simon</td>
<td>Institut Camille Jourdan, Lyon, France</td>
<td>Cartographie de gènes à caractères quantitatifs par déséquilibre de liaison</td>
</tr>
<tr>
<td>Boitard, Simon</td>
<td>Laboratoire d’Ecologie Alpine, Grenoble, France</td>
<td>Cartographie de gènes à caractères quantitatifs par déséquilibre de liaison</td>
</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>Institut für Informatik, Universität Köln, Germany</td>
<td>Copositive and (Standard) Quadratic Programming: a central problem class in optimization</td>
</tr>
<tr>
<td>Bomze, Immanuel</td>
<td>Mathematisches Kolloquium, Universität Düsseldorf, Germany</td>
<td>Copositive and (Standard) Quadratic Programming: a central problem class in optimization</td>
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<tr>
<td>Bomze, Immanuel</td>
<td>Wirtschaftswissenschaftliches Kolloquium, Universität Heidelberg, Germany</td>
<td>Neutrality, drift and differentiation: degeneracy matters in game dynamics</td>
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<tr>
<td>Bomze, Immanuel</td>
<td>Seminario Permanente di Ottimizzatione, Università degli Studi Firenze, Italy</td>
<td>The first cut is the cheapest – improving SDP bounds for the clique number</td>
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<tr>
<td>Person</td>
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<tr>
<td>Bomze, Immanuel</td>
<td>Dipartimento di Informatica, Università degli Studi di Bari, Italy</td>
<td>Optimization dynamics for quadratic problems and their role in machine intelligence</td>
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<tr>
<td>Futschik, Andreas</td>
<td>Tamkang University, Taiwan</td>
<td>Topics in Nonparametric Density Estimation</td>
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<tr>
<td>Futschik, Andreas</td>
<td>Tamkang University, Taiwan</td>
<td>On the Optimum Number of Hypotheses to Test when the Number of Observations is Limited</td>
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<td>Futschik, Andreas</td>
<td>Tamkang University, Taiwan</td>
<td>Improvement of Watterson’s and related estimates for the mutation rate based on shrinkage</td>
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<tr>
<td>Futschik, Andreas</td>
<td>Tokyo Institute of Technology, Japan</td>
<td>On the inadmissibility of Watterson’s estimate</td>
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<tr>
<td>Gutjahr, Walter J.</td>
<td>Lehrstuhl für technische Dienstleistungen und Operations Management, Technische Universität München, Germany</td>
<td>Competence-driven project portfolio analysis</td>
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<tr>
<td>Gutjahr, Walter J.</td>
<td>Fakultät für Wirtschaftswissenschaften, Technische Universität München, Germany</td>
<td>Multicriteria combinatorial optimization under uncertainty: methods and management applications</td>
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<tr>
<td>Ha Quang, Minh</td>
<td>Stanford University, USA</td>
<td>Kernels and Effective Dimensionality</td>
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<tr>
<td>Hochreiter, Ronald</td>
<td>Department of Computing, Imperial College London, Great Britain</td>
<td>Dynamic Stochastic Optimization: Issues in Multi-Stage Scenario Modeling</td>
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<tr>
<td>Kilianová, Soňa</td>
<td>Comenius University, Bratislava, Slovakia</td>
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<td>Radoslava, Mirkov</td>
<td>University of Bergamo, Italy</td>
<td>Tree Approximations of Dynamic Stochastic Programs</td>
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<tr>
<td>Nickl, Richard</td>
<td>Statistics Colloquium, Department of Statistics, University of Connecticut, USA</td>
<td>Uniform Central Limit Theorems for Density Estimators</td>
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<tr>
<td>Nickl, Richard</td>
<td>Stochastics Seminar, Department of Mathematics, Massachusetts Institute of Technology (MIT), Cambridge Massachusetts, USA</td>
<td>Uniform Central Limit Theorems for Density Estimators</td>
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<td>Nickl, Richard</td>
<td>Stochastics Seminar, Department of Mathematics, University of Utah, USA</td>
<td>Uniform Limit Theorems for Wavelet Density Estimators</td>
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<td>Pflug, Georg</td>
<td>Winter School Bergamo, Italy</td>
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<td>Pflug, Georg</td>
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<td>Pflug, Georg</td>
<td>TU Espoo, Finland</td>
<td>Version-independent multiperiod risk measures</td>
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<td>Pötscher, Benedikt</td>
<td>Department of Economics, University of California, San Diego, USA</td>
<td>Model Selection and Inference</td>
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<tr>
<td>Pötscher, Benedikt</td>
<td>Fachbereich für Statistik, Universität Dortmund, Germany</td>
<td>Sparse estimators and the oracle property, or the return of Hodges’ estimator</td>
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<tr>
<td>Wiesinger, Clemens</td>
<td>Siemens-CRM Meeting, Vienna, Austria</td>
<td>Scenario Trees: Data-Structure and Visualization</td>
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**Referee work for journals and organisations**

Baierl, Andreas
- Heredity (1)

Bomze, Immanuel M.
- Computational Optimization and Applications (1)
- Central European Journal of Operations Research (1)
- SIAM Journal on Optimization (2)
- Mathematical Programming (1)
- Computational Statistics and Data Analysis (1)
- Games and Economic Behaviour (1)
- Journal of Global Optimization (1)
- Linear Algebra and Applications (1)
- Program referee for LION 2007 (2)
- Program referee for LIONbis 2007 (3)

Frommlet, Florian
- Genetics (1)
- Journal of Computational and Graphical Statistics (1)
- Journal of Global Optimization (1)
- Psychology Science (1)

Futschik, Andreas
- Biometrical Journal (1)
- Statistische Hefte (1)
- Statistical Applications in Genetics and Molecular Biology (1)
- Journal of Statistical Planning and Inference (2)
- Austrian Journal of Statistics (1)
- Journal of Multivariate Analysis (1)

1 indicates the number of papers reviewed in 2007
Gutjahr, Walter J.  • BioMed Central Evolutionary Biology (1)
  • Computers and Operations Research (1)
  • European Journal of Operational Research (2)
  • Genetic Programming and Evolvable Machines (1)
  • IEEE Transactions on Evolutionary Computation (2)
  • IEEE Transactions on Software Engineering (1)
  • IEEE Transactions on Systems, Man, and Cybernetics (2)
  • INFORMS Journal on Computing (1)
  • International Journal of Production Economics (1)
  • Journal of Artificial Intelligence Research (1)
  • Journal of Discrete Algorithms (1)
  • Journal of Software Maintenance and Evolution (1)
  • Production and Operations Management (1)
  • Swarm Intelligence (1)
  • University of Mauritius Research Journal (1)
  • PhD evaluation report Ramon Sagarna (University of the Basque Country, Spain)

Hochreiter, Ronald  • Mathematical Programming (1)
  • Computers and Operations Research (1)
  • Operational Research: An International Journal (1)
  • Volume on Computational methods in financial engineering, Springer (1)
  • EvoFin 2008 Workshop (2)

Klein, Irene  • Finance and Stochastics (1)
  • Decisions in Economics and Finance (1)

Ljubic, Ivana  • Networks (1)

Nickl, Richard  • Annals of Probability (1)
  • Annals of Statistics (1)
  • Bernoulli (2)
  • Journal of Econometrics (1)
  • Stochastic Processes and Applications (1)

Pflug, Georg  • Two PhD defenses in Berlin (2nd referee)

Pötscher, Benedikt  • Econometric Theory
  • Econometrica

Schachinger, Werner  • Random Structures and Algorithms (1)
  • Journal of Global Optimization (1)

Wozabal, David  • Central European Journal of Operations Research (1)
Editorial work

Bomze, Immanuel M. • Central European Journal of Operations Research
• Journal of Global Optimization
• Optimization Letters
• TOP. An Official Journal of the Spanish Society of Statistics and Operations Research

Futschik, Andreas • International Journal of Information and Management Sciences

• Swarm Intelligence (member of the editorial board)

Hochreiter, Ronald • Computational Management Science (guest editor)
• Optimization (guest editor)

Mirkov, Radoslava • Annals of Operations Research: Stochastic dynamic modeling of investments and risks in financial markets (special issue)
• Quantitative Finance (special issue)
• Journal of Banking and Finance (special issue)
• Central European Journal of Operations Research (special issue)
(all together with Pflug, Georg)

Pflug, Georg • Statistics and Decisions (editor in chief)
• Mathematical Methods of Operations Research (associate editor)
• Computational Optimization and Applications (associate editor)
• Computational Management Science (associate editor)
• Central European Journal of Operations Research (associate editor)
• Austrian Journal of Statistics (associate editor)
• Annals of Operations Research: Stochastic dynamic modeling of investments and risks in financial markets (special issue)
• Journal of Banking and Finance (special issue)
• Quantitative Finance (special issue)

Pötscher, Benedikt • Econometric Theory (co-editor)
• Journal of Econometrics (associate editor)
• Econometric Theory (special issue) (guest editor)
Membership as scientific professional in scientific organisations

Baierl, Andreas
- Österreichische Statistische Gesellschaft (OSG)

Bomze, Immanuel M.
- OSG
- Österreichische Mathematische Gesellschaft (ÖMG)
- Österreichische Gesellschaft für Operations Research (ÖGOR)

Futschik, Andreas
- OSG
- Institute of Mathematical Statistics (IMS)

Gutjahr, Walter J.
- ÖGOR (executive board member)

Hochreiter, Ronald
- Association for Computing Machinery (ACM)
- IEEE Computer Society (IEEE/CS)
- Institute for Operations Research and the Management Sciences (INFORMS)
- International Association for Statistical Computing (IASC)
- Mathematical Programming Society (MPS)
- Society for Industrial and Applied Mathematics (SIAM)
- ÖGOR

Ljubic, Ivana
- ÖGOR

Mirkov, Radoslava
- SIAM (Optimization)

Nickl, Richard
- IMS

Pötscher, Benedikt
- American Mathematical Society (AMS)
- American Statistical Association (ASA)
- IMS
- Econometric Society
- Verein für Socialpolitik (Ausschuss für Ökonometrie)

Schachinger, Werner
- ÖMG

Schneider, Ulrike
- ASA
- Econometric Society

Public relations activities

Gutjahr, Walter J.

Eder, Anselm; Gutjahr, Walter J.; Uchida, Gabriele
Virtual course within the ECFUN program (European Children’s Future University Network, project funded by the European Commission, 6th Framework Program)

Ljubic, Ivana
Interview for “dieuniversitaet-online.at”, Feb 2007

Schneider, Ulrike
Presentation at the “Wiener Töchtertag im math.space”
## Supervision of diploma theses and PhD theses

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<tr>
<th>Supervisor</th>
<th>Author</th>
<th>DA</th>
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<tr>
<td>Futschik, Andreas</td>
<td>Baierl, Andreas</td>
<td>DISS 1</td>
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<td>Futschik, Andreas</td>
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<td>Statistical Models for Chronic Kidney Disease</td>
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<tr>
<td>Gutjahr, Walter J.</td>
<td>Polacek, Michael</td>
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<td>Gutjahr, Walter J.</td>
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<td>Empirische Untersuchung zu projektorientiertem Outsourcing und Offshoring</td>
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<td>Gutjahr, Walter J.</td>
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<td>Parametertuning von Evolutionären Algorithmen in der Mehrzieloptimierung</td>
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<td>Gutjahr, Walter J.</td>
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<td>The Vehicle Routing Problem with Time Windows and Stochastic Service Times: Two Metaheuristic Approaches</td>
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2 Diploma thesis finished in 2007  
3 PhD thesis finished in 2007 – First referee  
4 PhD thesis finished in 2007 – Second referee
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<td>Gutjahr, Walter J.</td>
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<td>Resource Allocation for Epidemic Control over Short Time Horizons by Multiobjective Metaheuristics</td>
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**Other professional activities**

**Bomze, Immanuel M.**
- Vice Dean of Faculty of Business, Economics and Statistics (until Oct 2007)
- Member of Program Committee LION 2007, Andalo
- Member of Program Committee LIONbis 2007, Trento
- Organisation of special invited session at Optimization 2007, Porto

**Futschik, Andreas**
- Member of Executive Board OSG
- ERASMUS Program Coordinator for Studies in Statistics

**Gutjahr, Walter J.**
- Visiting member of the PhD committee of Ramon Sagarna (University of the Basque Country, Spain)
- Visiting member of the PhD committee of Francisco Chicano (University of Malaga, Spain)
- Program Committee GECCO 2007 (Genetic and Evolutionary Computation Conference)
- Program Committee EvoCop 2008 (European Conference on Evolutionary Computation in Combinatorial Optimisation)
- Program Committee MIC 2007
- Program Committee MOTES 2007
- Program Committee RT 2007 (International Workshop on Random Testing)
- Program Committee Software Engineering 2007 (WS Software Testing)
- Technical Committee WCCI 2008 (World Congress on Computational Intelligence)

**Ljubic, Ivana**
- Member of Executive Board ÖGOR

**Mirkov, Radoslava**
- Local organizing committee, SPXI 2007

**Pflug, Georg**
- Stream financial modeling at the EURO XXII conference, Prague
- 11th Conference on Stochastic Programming (SPXI), Vienna
- MCOR (models for credit and operational risk workshop), Bolzano

**Pötscher, Benedikt**
- Co-organizer of the workshop “Current Trends and Challenges in Model Selection and Related Areas”

**Schachinger, Werner**
- Head of Department
Talks given at the department

8 January
Lutz Dümbgen (Univ. Bern): Konfidenzbereiche für Modell selektion

22 January
Minh Ha Quang (Univ. Wien): Reproducing kernel Hilbert spaces in learning theory

29 January
Ya'acov Ritov (HU Jerusalem): Nonparametric sparse regression, prediction and model selection

19 March
Ivana Ljubic (Univ. Wien): Connected facility location in the design of telecommunication networks

26 March
Angelika Wiegele (Univ. Klagenfurt): Combining semidefinite and polyhedral relaxations for solving the Max-Cut problem

18 April
Philippe Naveau (LSCE, Paris): Modeling spatial dependence for extremes in climate studies

23 April
Florian Gach (Univ. Wien): On the inadmissibility of Watterson’s estimate

14 May
Lajos Horváth (Univ. Utah): What is rejected by a CUSUM based procedure?

04 June
Simon Boitard (Univ. Wien): Linkage disequilibrium mapping of quantitative trait loci

11 June
Evarist Giné (Univ. Connecticut): A simple adaptive estimator of the integrated square of a density

18 June
Rainer Kolisch (TU München): Human resource development and allocation in project environments with explicit consideration of qualification and learning

25 June
Friedrich Liese (Univ. Rostock): Lokal asymptotisch optimale Auswahlverfahren

22 October
Daniela di Serafino (Univ. Napoli): Effective solution of the KKT system for effective large-scale optimization

05 November
Janez Povh (Univ. Maribor): On approximations of hard combinatorial problems by semidefinite and copositive programming

19 November
Rudolf Beran (Univ. California, Davis): Regularized Regression: A Minimalist’s Approach to Fitting and Extrapolating a Discrete Incomplete Multi-way Layout

26 November
José Antonio Lozano (Euskal Univ. San Sebastian): Optimization by Means of Probabilistic Graphical Models

03 December
Damir Filipović (Univ. Wien): Non-monotone risk measures and monotone hulls