Institut für Statistik und Operations Research
Department of Statistics and Operations Research

# ANNUAL REPORT 2018

Oskar-Morgenstern-Platz 1
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http://isor.univie.ac.at

# Table of Contents

# 1 Foreword

I am pleased to present the Annual Report of the Department of Statistics and Operations Research, which documents some of the many achievements in 2018. The Department of Statistics and Operations Research is part of the School of Business, Economics and Statistics of the University of Vienna. Members of the department are active in research in various areas of Statistics, Econometrics, Operations Research, Applied Mathematics and Computer Science. The department offers degree programs in Statistics at the Bachelor, Master and the PhD-level. Members of the department are also active in service teaching for other departments in our School, including the Department of Business Administration and the Department of Economics.

In 2018, Manveer Mangat joined the department as a Prae Doc assistant, and Lisa Carli as an administrative assistant.

There were also several departures in 2018: Walter Gutjahr retired after many years in our department. We are very grateful to him for his many contributions and wish him well in his retirement. Christopher Walsh left for a Post Doc position at TU Dortmund, while Ivana Milovic, Alexander Ristig, and Nina Senitschnig went into industry. Johannes Happenhofer as well as Dominique Sundt decided to pursue other career options. We wish them all well in their new endeavours.

Special thanks are due to Lisa Carli and Birgit Ewald for editing the Annual Report 2018.

Benedikt M. Pötscher

(Head of Department)

Vienna, July 2019

# 2 Faculty and Staff

## Faculty

| | |
|---|---|
| Ilya Archakov (Dr.) | Financial Econometrics |
| Immanuel Bomze (Prof.) | Operations Research and Quantitative Decision Support, Game Theory and Modelling of Behaviour, Optimization Theory and Application, Asymptotic Statistics, Stochastic Modelling, Dynamical Systems |
| Walter Gutjahr (Prof.) | Optimization Theory, Discrete Optimization, Stochastic Modeling, Multicriteria Decision Analysis |
| Nikolaus Hautsch (Prof.) | Financial Econometrics, Econometric Modelling of Financial High-Frequency Data, Time Series Econometrics, Time-Varying Volatility and Correlation, Market Liquidity, Market Microstructure Analysis, Systemic Risk, Information Processing on Financial Markets, Risk Management |
| Kory Johnson (PhD) | Feature selection, Post-selection inference, Fairness, Accountability, and Transparency in Machine Learning (FATML) |
| Irene Klein (Assoc. Prof.) | Stochastic Finance |
| Hannes Leeb (Prof.) | Model selection and predictive inference when the number of parameters is of the same order as sample size. Inference when fitting mis-specified models. Admissibility of confidence sets. Pitfalls in inference after model selection when using traditional approaches. |
| Markus Leitner (Dr.) | Operations Research, Combinatorial Optimization |
| Ivana Ljubic (Ass. Prof., on leave) | Algorithmic Operations Research, Algorithm Engineering |
| Ivana Milovic (PhD) | Model Selection in High-Dimensional Linear Models |
| Georg Pflug (Prof.) | Mathematical Statistics, Stochastic Optimization, Risk Management |
| Mathias Pohl (PhD) | Dependence modelling and Copulas, High Frequency Trading, Model Ambiguity, Optimal Transport, Portfolio Optimization, Robust Optimization |
| Benedikt Pötscher (Prof.) | Econometrics, Statistics, Time Series Analysis |
| Erhard Reschenhofer (Assoc. Prof.) | Time Series Analysis, Financial Econometrics, Automatic Model Selection, Chronobiology |
| Alexander Ristig (Dr.) | Financial econometrics and statistics, Copula and quantile- |

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| | based dependence concepts, Iterative estimation techniques, Applications in finance, risk management |
| Mario Ruthmair (Dr.) | Operations Research, Combinatorial Optimization, (Mixed) Integer Linear Programming, Optimization in Network Design, Transport and Logistics |
| Teresa Scarinci (Dr.) | Optimal control of ODEs (Sensitivity analysis, Optimality conditions, Numerical approximation of solutions of problems with constraints ), Nonsmooth analysis and Variational inequalities, Numerical analysis in optimization and optimal controls, Hamilton-Jacobi-Bellman equations |
| Werner Schachinger (Assoc. Prof.) | Optimization, Probabilistic Analysis of Algorithms |
| Nina Senitschnig (PhD) | Mathematical Statistics, Predictive Inference, Shrinkage |
| Markus Sinnl (PhD) | Theoretical and Computational Aspects of Mixed Integer (Non-)Linear Programming, Decomposition Methods for Mixed Integer (Non-)Linear Programming, Bilevel Programming, Combinatorial Optimization, Bi-and Multi-Objective Optimization, Robust and Stochastic Optimization Matheuristics, Areas of Application: Network Design, Telecommunications, Systems Biology |
| Christopher Walsh (Dr.) | Non- and Semiparametric Statistics and Econometrics, Financial Econometrics, Time Series, High Dimensional Statistics |

## PhD Students

| | |
|---|---|
| Corina Birghila (MSc) | Extreme Value Theory, Insurance Pricing |
| Georg Brandstätter (Dipl.-Ing.) | Combinatorial Optimization, Integer Linear Programming, Transportation and Logistics Optimization |
| Daniela Escobar (MSc) | Linear and Non-Linear Time Series Analysis, Risk Management, Application in Energy Markets |
| Markus Gabl (MSc) | Copositve Optimization, Quadratic Optimization, Conic Optimization, Robust Optimization |
| Caroline Geiersbach (Dipl.-Ing.) | Optimal control of PDEs, Stochastic Optimization, Shape Optimization, Multiscale Methods, Numerical Methods |
| Martin Glanzer (Dipl.-Ing.) | Stochastic optimization and Quantitative Finance |
| Sandor Guzmics (MSc) | Stochastic Optimization, Financial Mathematics, Systemic Risk in Financial Systems |
| Johannes Happenhofer (MSc) | |

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| Michael Kahr (MSc) | (Mixed) Integer Linear Programming, Stochastic and Robust Optimization, Conic Optimization, Network Optimization |
| Danijel Kivaranovic (Mag.) | Inference post-model-selection, Predictive inference with machine learning algorithms |
| Martin Luipersbeck (Dipl.-Ing.) | (Mixed) Integer Programming, Network Design, Algorithm |
| Manveer Mangat (Msc) | Time Series Analysis, Financial Econometrics |
| Christian Zwatz (Mag.) | Autocorrelation Robust Testing, Spatial Econometrics |

### External Lecturers (Academic Year 2017/2018)

Andreas Baierl (University of Vienna), Johann Brandstetter (University of Vienna), Florian Frommlet (MedUni Vienna), Annemarie Grass (University of Vienna), Wilfried Grossmann (University of Vienna), Moshe Haviv (Hebrew University of Jerusalem), Marcus Hudec (University of Vienna), Christoph Krall (University of Vienna), Nysret Musliu (TU Vienna), Herbert Nagel (WU Vienna), Daniel Obszelka (University of Vienna), Robin Ristl (MedUni Vienna), Theresa Scharl-Hirsch (Boku Vienna), Leopold Sögner (IHS Vienna), Alexander Tichy (VetMedUni Vienna), Anna Timonina-Farkas (EPFL Switzerland), Clemens Sauerzopf (Data Technology), Gerhard Svolba (SAS), Gabriele Uchida (University of Vienna), Claus Vogl (VetMedUni Vienna), Bertram Wassermann (University of Vienna).

### Teaching Assistants (Academic Year 2017/2018)

William Burton, Nathalie Coreth (née Hövell) , Manuel Hahn, Thomas Hillebrand, Azadeh Sadat Mirtaheri, Manuel Müller, Stefan Ortner, Alexandra Posa, Raphael Rath, Anastasiia Riabushkina, Christoph Sattler, Thomas Stark.

### Administrative Assistants

Julia Brandstätter, Lisa Carli, Birgit Ewald, Gerald Kamhuber (on leave), Vera Lehmwald, Manuela Nicham-Zorn, Dominique Sundt.

### System Administrators

Jürgen Berlakovich, Stefan Geissler, Rolf Karner, Andreas Loibl, Martin Marktl, Svetlana Mihajlovic.

## 3 Visitors

Heinz Bauschke (University of British Columbia, Canada), Luis Gouveia (University of Lisbon, Portugal), Daniel Kuhn (École polytechnique fédérale de Lausanne, Switzerland), Petra Mutzel (Technische Universität Dortmund, Germany), Arkadi Nemirovski (Georgia Institute of Technology, USA), Richard Olsen (Lykke), Maria Teresa Gonzalez Perez (Colegio Universitario de Estudios Financieros, Spain), Claudia Sagastizabal (Universidade Estadual de Campinas, Brasil), Alexander Shapiro (Georgia Institute of Technology, USA)

# 4 Teaching

## PhD Theses in Progress

| Supervisor | Author | Title |
|---|---|---|
| Immanuel Bomze | Philipp Hungerländer (Alpen-Adria-Universität Klagenfurt, Austria) | Extensions of the Traveling Salesman Problem |
| Immanuel Bomze | Markus Gabl | A copositive approach to adjustable robust optimization with uncertain recourse |
| Immanuel Bomze, Markus Leitner | Michael Kahr | Optimization in Social Networks: Influence Propagation and Community Detection |
| Nikolaus Hautsch | Stefan Voigt (VGSF) | TBA |
| Nikolaus Hautsch | Maximilian Bredendiek (VGSF) | Essays in Empirical Asset Pricing |
| Hannes Leeb | Johannes Happenhofer | TBA |
| Hannes Leeb | Danijel Kivaranovic | Statistical analysis and development of inference procedures post-model-selection |
| Ivana Ljubic, Markus Leitner | Georg Brandstätter | Solving optimization problems arising in the context of electric car sharing systems |
| Georg Pflug | Corina Birghila | Insurance premium under ambiguity |
| Georg Pflug | Daniela Escobar | Analysis of Risk Premia in Energy Markets |
| Georg Pflug | Caroline Geiersbach | Stochastic Models in Shape Optimization |
| Georg Pflug | Martin Glanzer | Pricing of Contingent Claims under Model Ambiguity |
| Georg Pflug | Sandor Guzmics | Systemic Risk in Financial Systems |
| Benedikt M. Pötscher | Christian Zwatz | Topics in Autocorrelation Robust Testing and Spatial Models |
| Erhard Reschenhofer | Manveer Mangat | Essays on stock return and volatility forecasting |

## PhD Theses Finished

| Supervisor | Author | Title |
|---|---|---|
| Nikolaus Hautsch | Akos Horvath | The Effectiveness of Post-Crisis Regulatory Measures |
| Georg Pflug, Walter Schachermayer | Mathias Pohl | Robust portfolio optimization with copulas |
| Erhard Reschenhofer | Marek Chudy | Essays on forecasting of economic and financial time series |

## Master Theses in Progress

| Supervisor | Author | Title |
|---|---|---|
| Nikolaus Hautsch | André Thea | Forecasting Realised Volatility Using Jumps at Ultra-High Frequency |
| Nikolaus Hautsch | Thomas Hillebrand | TBA |
| Nikolaus Hautsch | Yelena Govgolenko | TBA |
| Mario Ruthmair Markus Leitner | Raimund Hirz | Obtaining Exact Solutions for the Traveling Salesman Problem with Drone |
| Mario Ruthmair | Johann Schiffer | Vehicle Routing in Medical Support (preliminary title) |
| Werner Schachinger | Simon Klima | Random Graphs and the Giant Component |
| Werner Schachinger | Rafael Jochum | Verzweigungsprozesse – Theorie und Anwendung |

## Master Theses Finished

| Supervisor | Author | Title |
|---|---|---|
| Walter Gutjahr | Rath, Raphael | Bikriterielle ungleichheits-averse Standortoptimierung für Hilfseinrichtungen in Erdbebenregionen |
| Walter Gutjahr | Güttler, Julia | Including tour costs in a covering problem with user equilibria |
| Walter Gutjahr | Fischer, Sophie | Fairness und Deprivation Costs in der Humanitären Logistik: ein Lösungsansatz mittels Partikelschwarmoptimierung |

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| Walter Gutjahr | Özdemir, Cicek | Modellierung von Unsicherheit im Transportproblem |
| Walter Gutjahr | Celik, Hülya | Risikoanalyse für das lineare Zuordnungsproblem mit zufälligen Erträgen |
| Walter Gutjahr | Schmid, Sabrina | Kosteneffizienz und Standortoptimierung von Cooling Centers |
| Nikolaus Hautsch | Eva Kranebitter | Effectiveness of European and US-American Quantitative Easing: A Comparison |
| Georg Pflug | Christoph Schachinger | Portfolio optimization via smoothing the V@R |
| Georg Pflug | Michal Majka | Modelling of low probability high impact events |
| Erhard Reschenhofer | Nathalie Marie Agnes Coreth | A predictive model for identifying patients at risk for secondary progressive multiple sclerosis progression |
| Erhard Reschenhofer | Iwona Lewicka | Study of disaster risk models across blocks of developed and less-developed countries |
| Erhard Reschenhofer | Tomislav Maruščak | Data Analytics for Smart Product Configuration – Statistical Analysis of Operational Log Data in a Smart City Platform |
| Mario Ruthmair<br>Markus Leitner | Ludwig Müller | The Target Set Selection Problem with Arbitrary Edge Weights |
| Mario Ruthmair<br>Markus Leitner | Zvezdana Milosevic | Crowdsourced Delivery: An Alternative to In-House Delivery |

## Bachelor Theses

Immanuel Bomze (5)

Hannes Leeb (1)

Erhard Reschenhofer (2)

# 5 Publications

## Journal Articles

Bomze, Immanuel; Cheng, Jianqiang; Dickinson, Peter; Lisser, Abdel; Liu, Jia: Notoriously hard (mixed-)binary QPs: empirical evidence on new completely positive approaches. In: Computational Management Science. 2018

Bomze, Immanuel; Rinaldi, Francesco; Rota Bulò, Samuel: Pure infection–immunization dynamics for partnership games: A correction. In: Games and Economic Behavior. 2018

Bomze, Immanuel: On minimal Hölder gaps and Shannon entropy balance. In: Portugaliae Mathematica. 2018, Vol. 75, No. 1. pp. 1-10

Bomze, Immanuel; Jeyakumar, Vaithilingam; Li, Guoyin: Extended trust-region problems with one or two balls: exact copositive and Lagrangian relaxations. In: Journal of Global Optimization. 2018, Vol. 71, No. 3. pp. 551-569

Bomze, Immanuel: Building a completely positive factorization. In: Central European Journal of Operations Research. 2018, Vol. 26, No. 2. pp. 287-305

Bomze, Immanuel; Schachinger, Werner; Ullrich, Reinhard: The complexity of simple models: a study of worst and typical hard cases for the Standard Quadratic Optimization Problem. In: Mathematics of Operations Research. 2018, Vol. 43, No. 2. pp. 651-674

Bomze, Immanuel; Dörner, Karl; Hartl, Richard; Leopold-Wildburger, Ulrike; Pflug, Georg; Rauner, Marion; Stummer, Christian; Tragler, Gernot; Wakolbinger, Tina: Emerging and innovative OR applications: a special issue in honor of Walter J. Gutjahr. In: Central European Journal of Operations Research.2018, Vol. 26, No. 2. pp. 259-263

Escobar, Daniela; Pflug, Georg: The distortion principle for insurance pricing: properties, identification and robustness. In: Annals of Operations Research. 2018, Vol. 95, No. 10. pp. 1950-1972

Fischetti, Mario; Monaci, Michele; Sinnl, Markus: A dynamic reformulation heuristic for Generalized Interdiction Problems. In: European Journal of Operational Research. 2018, Vol. 267, No. 1. pp. 40-51

Glanzer, Martin; Pflug, Georg; Pichler, Alois: Incorporating statistical model error into the calculation of acceptability prices of contingent claims. In: Mathematical Programming. 2018, Vol. 174, No. 1. pp. 499-524

Gutjahr, Walter; Fischer, Sophie: Equity and deprivation costs in humanitarian logistics. In: European Journal of Operational Research. 2018, Vol. 270, No. 1. pp. 185-197

Niessner, Helmut; Rauner, Marion; Gutjahr, Walter: A dynamic simulation-optimization approach for managing mass casualty incidents. In: Operations Research for Health Care. 2018, Vol. 17, pp. 82-100

Felberbauer, Thomas; Gutjahr, Walter; Dörner, Karl Franz: Stochastic project management: Multiple projects with multi-skilled human resources. In: Journal of Scheduling. 2018

Hautsch, Nikolaus; Voigt, Stefan: Large-Scale Portfolio Allocation Under Transaction Costs and Model Uncertainty. In: Journal of Econometrics. 2018

Fischetti, Matteo; Kahr, Michael; Leitner, Markus; Monaci, Michele; Ruthmair, Mario: Least cost influence propagation in (social) networks. In: Mathematical Programming. 2018; Vol. 170, No. 1. pp. 293-325

Cordero, Fernando; Klein, Irene; Perez-Ostafe, Lavinia: Asymptotic arbitrage in fractional mixed markets. In: Modern Stochastics: Theory and Applications. 2018; Vol. 5, No. 4. pp. 415–428

Bachoc, Francois; Leeb, Hannes; Pötscher, Benedikt: Valid Confidence Intervals for Post-Model-Selection Predictors. In: Annals of Statistics. 2019, Vol. 47, No. 3. pp. 1475-1504

Steinberger, Lukas; Leeb, Hannes: On conditional moments of high-dimensional random vectors given lower-dimensional projections. In: Bernoulli: A journal of mathematical statistics and probability. 2018; Vol. 24, No. 1. pp. 565–591

Leitner, Markus; Ljubic, Ivana; Riedler, Martin; Ruthmair, Mario: Exact approaches for the directed network design problem with relays. In: Omega. 2018

Leitner, Markus; Ljubic, Ivana; Luipersbeck, Martin; Sinnl, Markus: Decomposition methods for the two-stage stochastic Steiner tree problem. In: Computational Optimization and Applications. 2018, Vol. 69, No. 3. pp. 713–752

Leitner, Markus; Ljubic, Ivana; Luipersbeck, Martin; Sinnl, Markus: A dual-ascent-based branch-and-bound framework for the prize-collecting Steiner tree and related problems. In: INFORMS Journal on Computing. 2018, Vol. 30, No. 2. pp. 217-420

Gouveia, Luis; Joyce Moniz, Martim Barros; Leitner, Markus: Branch-and-cut methods for the network design problem with vulnerability constraints. In: Computers & Operations Research. 2018, Vol. 91, pp. 190-208

Brännström, Ake; Boza, Gergely; Dieckmann, Ulf; Hochrainer-Stigler, Stefan; Linnerooth-Bayer, Joanne; Pflug, Georg; Poledna, Sebastian; Rovenskaya, Elena; Thurner, Stefan: Integrating Systemic Risk and Risk Analysis Using Copulas. In: International Journal of Disaster Risk Science. 2018, Vol. 9, No. 4. pp. 561-567

Brännström, Ake; Boza, Gergely; Colon, Célian; Dieckmann, Ulf; Hochrainer-Stigler, Stefan; Linnerooth-Bayer, Joanne; Pflug, Georg; Poledna, Sebastian; Rovenskaya, Elena; Thurner, Stefan: Modelling, Measuring and Managing Systemic Risk: The Missing Human Agency Aspect. In: Journal of Risk Research. 2018

Maggioni, Francesca; Pflug, Georg: Guaranteed Bounds for General Non-Discrete Multistage Risk-Averse Stochastic Optimization Programs. In: SIAM Journal on Optimization. 2018, Vol. 29, No. 1. pp. 454-483

Maier, Sebastian; Pflug, Georg; Polak, John: Valuing Portfolios of Interdependent Real Options under Exogenous and Endogenous Uncertainties. In: European Journal of Operational Research. 2018

Pflug, Georg; Pohl, Matthias: A review on ambiguity in stochastic portfolio optimization. In: Set-Valued and Variational Analysis. 2018; Vol. 26, No. 4. pp. 733-757

Pflug, Georg; Pichler, Alois: Systemic risk and copula models. In: Central European Journal of Operations Research. 2018, Vol. 26, No. 2. pp. 465-483

Pötscher, Benedikt; Leeb, Hannes; Kivaranovic, Danjiel: Discussion of "Model Confidence Bounds for Variable Selection" by Yang Li, Yuetian Luo, Davide Ferrari, Xiaonan Hu, and Yichen Qin. In Biometrics. 2018

Pötscher, Benedikt; Preinerstorfer, David: Controlling the Size of Autocorrelation Robust Tests. In: Journal of Econometrics. 2018, Vol. 207, pp. 406-431

Gouveia, Luís ; Pesneau, Pierre ; Ruthmair, Mario ; Santos, Daniel : Combining and projecting flow models for the (precedence constrained) asymmetric traveling salesman problem. In: Networks (New York): an international journal. 2018; Vol. 71, No. 4. pp. 451-465

Albano, Paolo; Cannarsa, Piermarco; Scarinci, Teresa: Sur la régularité partielle des solutions de l'équation eikonale sous-elliptique. In: Comptes Rendus Mathematique. 2018; Vol. 356, No. 2. pp. 172-176

Albano, Paolo; Cannarsa, Piermarco; Scarinci, Teresa: Regularity results for the minimum time function with Hörmander vector fields. In: Journal of Differential Equations. 2018; Vol. 264, No. 5.

Pietrus, Alain; Scarinci, Teresa; Veliov, Vladimir: High order discrete approximations to Mayer's problems for linear systems. In: SIAM Journal on Control and Optimization. 2018; Vol. 56, No. 1. pp. 102-119

Reschenhofer, Erhard: Heteroscedasticity-robust estimation of autocorrelation. In: Communications in Statistics: Simulation and Computation. 2018

Scarinci, Teresa; Veliov, Vladimir: Higher-order numerical scheme for linear quadratic problems with bang–bang controls. In: Computational Optimization and Applications. 2018; Vol. 29, No. 2. pp. 403–422

## Contributions to Proceedings and Edited Books

Gutjahr, Walter; Zehetner, Michaela: Sampling-based genetic algorithms for the bi-objective stochastic covering tour problem. In: Recent Developments in Metaheuristics (Computer Science Interfaces Series, Vol. 62) (Lionel Amodeo, El-Ghazali Talbi, Farouk Yalaoui, eds.) Springer, 2018. pp. 253-284

Preininger, Jakob; Scarinci, Teresa; Veliov, Vladimir: On the regularity of linear-quadratic optimal control problems with Bang-Bang solutions. In: Large-Scale Scientific Computing - 11th International Conference, LSSC 2017, Revised Selected Papers. (Ivan Lirkov, Svetozar Margenov, eds.) (Lecture Notes in Computer Science) Springer, 2018. pp. 237-245

## Working Papers

Birghila, Corina; Pflug, Georg: Optimal XL-insurance under Wasserstein-type ambiguity. 2018

Birghila, Corina; Pflug, Georg; Hochrainer-Stigler, Stefan: Risk layering under ambiguity: an application to farmers exposed to drought risk. 2018

Geiersbach, Caroline; Pflug, Georg: Projected Stochastic Gradients for Convex Constrained Problems in Hilbert Spaces. arXiv. 2018

Hautsch, Nikolaus; Scheuch, Christoph; Voigt, Stefan: Limits to Arbitrage in Markets with Stochastic Settlement Latency. 2018. (Center for Financial Studies; 616).

Eckstein, Stephan; Kupper, Michael; Pohl, Mathias: Robust risk aggregation with neural networks. arXiv. 2018

# 6 Dissemination of Research

## Presentations at Workshops and Conferences

| | Conference | Title of Presentation |
|---|---|---|
| Corina Birghila | RISK seminar, Laxenburg, Austria | Risk management under model ambiguity. |
| Corina Birghila | 8th International Conference on Mathematical and Statistical Methods for Actuarial Science and Finance, Madrid, Spain | Robust insurance contracts |
| Corina Birghila | Workshop Robust Finance 2018, Freiburg, Germany (Invited Speaker) | Optimal insurance contract under ambiguity. Applications in extreme events. |
| Corina Birghila | 13th German Probability and Statistics Days, Freiburg, Germany | Design of insurance contract under ambiguity. |
| Corina Birghila | Allianz Climate Risk Research Award, Munich, Germany (Invited Speaker) | Insurance under ambiguity |
| Corina Birghila | 11th Freiburg–Wien–Zürich Seminar, Freiburg, Germany | Tail analysis: a worst-case approach |
| Corina Birghila | European Actuarial Journal Conference 2018, Leuven, Belgium | Optimal XL-insurance contract under model uncertainty |
| Corina Birghila | Freiburg–Wien–Zürich Workshop, Strobl, Austria | Optimal insurance contract under ambiguity. Applications in extreme events. |
| Immanuel Bomze | SPOC18 “Machine Learning, Networks and Combinatorial Optimization”, Paris, France (Invited speaker) | Robust clustering in social networks |
| Immanuel Bomze | International Conference on Optimization and Decision Science, Taormina, Italy | Trust your data or not - Standard remains Standard (QP); implications for robust clustering in social networks |
| Immanuel Bomze | 16th EUROPT Workshop on Advances in Continuous Optimization, Almeria, Spain | Notoriously hard (mixed-)binary QPs: new CP approaches and empirical evidence |
| Immanuel Bomze | 23rd International Symposium on Mathematical Programming, Bordeaux, France | Active-set identification in Frank-Wolfe variants on the standard simplex |

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| Immanuel Bomze | NATCOR : Convex Optimization, Edinburgh, England (Keynote speaker) | Different duals in conic optimization - closure can tighten the duality gap |
| Immanuel Bomze | 6th Toulouse Economics and Biology Workshop,Toulouse, France (Invited speaker) | Aiding cognition in complex structures |
| Immanuel Bomze | International Conference on Optimization, Irsee, Germany (Keynote speaker) | Trust your data or not - Standard remains Standard (QP); implications for robust clustering in social networks |
| Immanuel Bomze | Workshop on Graph Spectra Combinatorics and Optimization, Aveiro, Portugal | Robust clustering in social networks |
| Marek Chudy | 1st Vienna Workshop on Economic Forecasting 2018, Vienna, Austria | Long-Term Prediction Intervals of Economic Time Series |
| Daniela Escobar | Computational Management Science 2018, Trondheim, Norway | Distortion premium principle: properties, identification and robustness |
| Daniela Escobar | 29th European conference on Operational Research (EURO XXIX) 2018, Valencia, Spain | Stochastic dynamic programming for the valuation of a power plant |
| Daniela Escobar | Energy and Finance Christmas Workshop, Bolzano, Italy (Invited speaker) | Identification of distortion functions in power markets |
| Markus Gabl | ISMP Conference, Bordeaux, France | Copositive Approach to Adjustable Robust Optimization with uncertain recourse |
| Markus Gabl | 29th European Conference on Operational Research, Valencia, Spain | Copositive Approach to Adjustable Robust Optimization with uncertain recourse |
| Markus Gabl | 16th EUROPT Workshop on Advances in Continuous Optimization, Almeria, Spain | Copositive Approach to Adjustable Robust Optimization with uncertain recourse |
| Caroline Geiersbach | 14th Viennese Conference on Optimal Control and Dynamic Games, Vienna, Austria (Invited Speaker) | A stochastic gradient algorithm for shape optimization |
| Caroline Geiersbach | Oberwolfach Workshop: New Directions in Stochastic Optimisation, Oberwolfach, Germany | Stochastic Gradients for PDE Constrained Optimization under Uncertainty |

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| Caroline Geiersbach | 5th European Conference on Computational Optimization, Trier, Germany | Stochastic gradient algorithm for PDE constrained optimization under uncertainty |
| Caroline Geiersbach | 4th Central European Set-Valued and Variational Analysis Meeting (CESVVAM), Marburg, Germany (Invited Speaker) | A Stochastic Gradient Algorithm for PDE Constrained Optimization under Uncertainty |
| Caroline Geiersbach | VWCO Workshop, Vienna, Austria | Shape Optimization for Interface Identification under Uncertainty |
| Martin Glanzer | VGSCO Retreat, Neusiedl am See, Austria | Distributionally robust acceptability pricing of contingent claims |
| Martin Glanzer | VGSCO Kolloquium WS 2018/19, Vienna, Austria (Invited speaker) | Scenario generation and model ambiguity for multiscale stochastic optimization problems |
| Martin Glanzer | 10th World Congress of the Bachelier Finance Society, Dublin, Ireland | Incorporating statistical model error into the calculation of acceptability prices of contingent claims. |
| Martin Glanzer | EURO 2018: 29th European Conference, Valencia, Spain | Multiscale scenario generation for a power plant valuation problem. |
| Martin Glanzer | Computational Management Science 2018, Trondheim, Norway | A sequential linear programming algorithm to compute distributionally robust acceptable prices of contingent claims. |
| Martin Glanzer | Euro Working Group on Commodities and Financial Modelling 2018, Kaunas, Lithuania | Incorporating statistical model error into the calculation of acceptability prices of contingent claims. |
| Sandor Guzmics | 7th Austrian Stochastic Days, Vienna, Austria | Copula orderings in a modified exponential lifetimel model |
| Sandor Guzmics | 20th European Conference on Mathematics for Industry, Budapest, Hungary | Stochastic Order Relations in Various Environments |
| Nikolaus Hautsch | Interdisziplinäres Symposium zu Kryptowährungen, Vienna, Austria (Invited Speaker) | Limits to Arbitrage in Markets with Stochastic Latency |
| Nikolaus Hautsch | 11th Annual Meeting of the Society | Revisiting the Stealth Trading |

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| | for Financial Econometrics (SoFiE), Lugano, Switzerland | Hypothesis: Does Time-Varying Liquidity Explain the Size-Effect? |
| Nikolaus Hautsch | Conference on Frontiers in High-Frequency Financial Econometrics, Pisa, Italy (Keynote speaker) | Limits to Arbitrage in (Blockchain-Based) Markets with Stochastic Latency |
| Nikolaus Hautsch | CUNEF - Colegio Universitario de Estudios Financieros, Madrid Spain (Invited Speaker) | Limits to Arbitrage in (Blockchain-Based) Markets with Stochastic Latency |
| Nikolaus Hautsch | International Workshop on New Frontiers in Financial Markets, Madrid, Spain (Invited Speaker) | Large Scale Portfolio Allocation Under Transaction Costs and Model Uncertainty |
| Kory Johnson | Workshop in model selection, regularization and interference, Vienna, Austria | Sequential Testing for Inference During Model Selection |
| Kory Johnson | Royal Statistical Society 2018 International Conference, Cardiff, Wales (Invited Speaker) | Sopping Stepwise Regression with the Sequential Rejection Principle |
| Kory Johnson | Larry Brown Memorial Workshop, Philadelphia, USA | Comment: Exact Post-selection Inference for Sequential Regression Procedures<br>Young Researcher Session |
| Kory Johnson | Computational and Methodological Statistics 2018, Pisa, Italy (Invited Speaker) | Revisiting Alpha-Investing: mFDR Control in Polynomial Regression |
| Michael Kahr | EURO 2018: 29th European Conference | Robust StQP and community detection in social networks |
| Irene Klein | Freiburg-Vienna-Zürich-Seminar, Freiburg, Germany (Invited Speaker) | Two filtrations in insurance |
| Hannes Leeb | Workshop Model Selection, Regularization, and Inference, Vienna, Austria | Prediction when fitting simple models to high-dimensional data |
| Markus Leitner | OR 2018: International Conference on Operations Research, Brussels, Belgium | The Electric Arc Routing Problem |
| Markus Leitner | EURO 2018: 29th European Conference, Valencia, Spain | Using Variables Aggregation and Benders Decomposition for Solving Large-Scale Extended Formulations |

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| | | & Robust StQP and community detection in social networks |
| Georg Pflug | VOCAL Optimization Conference: Advanced Algorithms, Esztergom, Hungary | Stochastic Optimization in Hilbert Spaces with Applications to Shape Optimization |
| Georg Pflug | Variational Analysis: Challenges in Energy, Castro Uridales, Spain (Invited Speaker) | Valuation of a Power Plant by Stochastic Dynamic Optimization |
| Georg Pflug | Conference on Computational Management Science, Trondheim, Norway | Generation of Scenarios for Multistage Stochastic Optimization |
| Georg Pflug | EURO Working Group for Commodities and Financial Modelling, Kaunas, Lithuania (Invited speaker) | Measuring Systemic Risk |
| Georg Pflug | Distributionally Robust Optimization, Banff, Canada (Invited speaker) | Distributional Robustness for Multiperiod Stochastic Programs |
| Georg Pflug | Stochastic Optimization in Energy, Winter School "Stochastic Optimization in Energy" Geilo, Norway | Model uncertainty in energy and in financial optimization |
| Mathias Pohl | ISOR Colloquium, Vienna, Austria (Invited speaker) | Robust risk aggregation with neural networks |
| Mathias Pohl | Financial Econometrics Conference: Market Microstructure, Limit Order Books and Derivative Markets, Lancaster, Great Britain | Theoretical and empirical analysis of trading activity |
| Mathias Pohl | New Directions in Stochastic Optimisation, Oberwolfach, Germany | Ambiguity in stochastic optimization |
| Mathias Pohl | Model Uncertainty and Robust Finance: Second Edition, Milan, Italy | A review on ambiguity in stochastic portfolio optimization |
| Benedikt Pötscher | A Celebration of Peter Phillips Forty Years at Yale, USA (Invited speaker) | Controlling the Size of Autocorrelation Robust Tests |
| Mario Ruthmair | OR 2018: International Conference on Operations Research, Brussels, Belgium | Least Cost Influence Propagation in (Social) Networks |
| Mario Ruthmair | EURO 2018: 29th European Conference, Valencia, Spain | Least Cost Influence Propagation in (Social) Networks |

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|---|---|---|
| Teresa Scarinci | International Workshop Analysis, Control and Inverse Problem on PDEs, Napoli, Italy (Invited speaker) (part of project LIA-COPDESC) | Some results about stability analysis, regularizations and applications to splitting |
| Teresa Scarinci | 14-th International Workshop on Well-Posedness of Optimization Problems and Related Topics, Sofia, Bulgaria | On the Smoothness and the Singular Support of the Minimum Time Function under Bracket-Generating Co |
| Teresa Scarinci | 14th Viennese Conference on Optimal Control and Dynamic Games, Vienna, Austria | Stability analysis for optimal control problems with bang-bang solutions |
| Teresa Scarinci | 7th International Conference on High Performance Scientific Computing: Modeling, Simulation and Optimization of Complex Processes, Hanoi, Vietnam | On the Regularity and the Singular Support of the Minimum Time Function with Hörmander Vector Fields |
| Teresa Scarinci | Games, Dynamics and Optimization GDO2018 Conference, Vienna, Austria | On the solutions to a class of subelliptic eikonal equations arising in optimal control |

## Outside Seminars

| | Institution | Title of Presentation |
|---|---|---|
| Immanuel Bomze | Universidad de La Laguna, Spain (invited) | Robust clustering in social networks |
| Immanuel Bomze | Università della Calabria, Italy (invited) | First-order methods for the impatient: support identifcation in finite time with convergent Frank-Wolfe variants |
| Immanuel Bomze | Technische Universität München (invited) | Trust your data or not - Standard remains Standard (QP); implications for robust clustering in social networks |
| Immanuel Bomze | Università degli Studi di Padova (invited) | Trust your data or not - Standard remains Standard (QP); implications for robust clustering in social networks |
| Immanuel Bomze | Università Degli Studi di Siena (invited) | Trust your data or not - Standard |

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| | | remains Standard (QP); implications for robust clustering in social networks |
| Immanuel Bomze | Università degli Studi di Bergamo (invited) | Trust your data or not - Standard remains Standard (QP); implications for robust clustering in social networks |
| Nikolaus Hautsch | Karl-Franzens-Universität Graz (invited) | Limits to Arbitrage in (Blockchain-Based) Markets with Stochastic Latency |
| Nikolaus Hautsch | Erasmus University Rotterdam (invited) | Large Scale Portfolio Allocation Under Transaction Costs and Model Uncertainty |
| Nikolaus Hautsch | University of Oxford, Great Britain (invited) | Large Scale Portfolio Allocation Under Transaction Costs and Model Uncertainty |
| Hannes Leeb | Erasmus Research Institute of Management, Netherlands (invited) | Prediction when fitting simple models to high-dimensional data. |
| Georg Pflug | Humboldt-Universität zu Berlin, Germany (invited) | Stochastic Shape Optimization |
| Benedikt Pötscher | Université Libre de Bruxelles, Belgium (invited) | Further Results on Size and Power of Autocorrelation Robust Tests, with an Application to Trend Testing |
| Benedikt Pötscher | Queen Mary University of London, Great Britain (invited) | Controlling the Size of Autocorrelation Robust Tests |
| Teresa Scarinci | Università degli Studi di Roma "Tor Vergata", Italy | On the regularity and the singular support of the minimum time function with Hörmander vector fields |
| Mathias Pohl | Universität Konstanz, Konstanz, Germany | On the regularity and the singular support of the minimum time function with Hörmander vector fields |

## Departmental Seminar (ISOR Colloquium)

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|---|---|---|
| January 15 | Mikhail Solodov (IMPA Rio de Janeiro) | Newton-Type Methods: A Broader View |

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| January 22 | Jean-Michel Zakoian (CREST, Paris) | Estimation risk for the VaR of portfolios driven by semi-parametric multivariate models (with Christian Francq) |
| March 19 | Joergen Weibull (HHS Sweden) | On the invariance of the maximum |
| April 9 | Christoph Rothe (University of Mannheim ) | Bounds on Treatment Effects in Regression Discontinuity Designs with a Manipulated Running<br>Variable (with F. Gerard & M. Rokkanen) |
| April 16 | Yarema Okhrin (Univ. of Augsburg) | Vine-based modelling of (multivariate) realized volatility time series |
| April 23 | Roberto Cominetti (Univ. A. Ibanez, Santiago de Chile) | Rates of convergence for the Krasnoselskii-Mann fixed point iteration |
| May 07 | Tobias Harks (Univ. Augsburg) | Sensitivity Analysis for Convex Separable Optimization over Integral Polymatroids |
| May 14 | Francesco Rinaldi (Univ. Padova) | First order algorithms for constrained optimization problems in Machine Learning |
| May 28 | Siegfried Hörmann (TU Graz) | On the prediction of stationary functional time series |
| June 04 | Diethard Klatte (Berlin) | Some Extensions of the Frank-Wolfe Theorem |
| June 18 | Dick den Hertog (Univ. Tilburg) | Robust Nonlinear Optimization with Convex Uncertainty |
| October 1 | Moshe Haviv (HU Jerusalem) | Externalities, optimization and regulation in queues |
| October 8 | Tatiana Tchemisova Cordeiro (Univ.Aveiro) | On phenomenon of Immobility in study of convex Optimization problems (with Olga Kostyukova) |
| October 15 | Maria Grazia Scutellà (Univ. Pisa) | Robust network optimization against uncertain demands |
| October 22 | Daniel Wilhelm (UCL) | Testing for the Presence of Measurement Error |
| October 29 | Alois Kneip (University of Bonn) | On the Optimal Reconstruction of Partially Observed Functional Data |
| November 6 | René Henrion (WIAS Berlin, Germany) | Probabilistic Constraints in infinite dimensions |

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| November 5 | Ilya Archakov (ISOR) | On The Modeling of Covariance Matrices: A Generalized Fisher Transformation (with Peter Reinhard Hansen) |
| November 12 | Jakub Marecek (IBM Dublin) | Recommender Systems and their Effects |
| November 19 | Peter Filzmoser (TU Vienna) | Robust estimators of maximum association |
| December 3 | Mathias Pohl (ISOR) | Robust risk aggregation with neural networks (Joint work with Stephan Eckstein and Michael Kupper) |
| December 10 | Damian Kozbur (University of Zurich) | Inference for Dependent Data with Cluster Learning |

# 7 Grants and Externally Funded Research Projects

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|---|---|
| Immanuel Bomze (Project-Coordinator, taken over from Ivana Ljubic in 09/2015)<br>Research Associates: Ivana Ljubic, Christina Büsing, Markus Leitner, Mario Ruthmair, Markus Sinnl, Martin Luipersbeck, Georg Brandstätter | Title: Network Optimization in Bioinformatics and System Biology<br>Funding: FWF<br>Funding period: 2014-2019 |
| Christa Cuchiero (Project-Coordinator), Irene Klein (Co-Investigator), Thorsten Schmidt (Co-Investigator)<br>Research Associate: Lars Niemann | Title: Dynamic Uncertainty Modeling in Finance<br>Funding: FWF<br>Funding period: 2018-2021 |
| Nikolaus Hautsch (Principal Investigator)<br>Research Associate: Ilya Archakov | Title: Order Book Foundations of Price Risks and Liquidity: An Integrated Equity and Derivatives Markets Perspective<br>Funding: FWF<br>Funding period: 2017-2020 |
| Hannes Leeb (Principal Investigator)<br>Research Associate: Ivana Milovic | Title: Model selection and inference with sparse models when the true model need not be sparse<br>Funding: FWF<br>Funding period: 2015-2018 |
| Hannes Leeb (Principal Investigator)<br>Research Associate: Nina Senitschnig | Title: Shrinkage estimators for prediction out-of-sample<br>Funding: FWF<br>Funding period: 2014-2018 |
| Markus Leitner (Principal Investigator)<br>Research Associates: Mario Ruthmair, Michael Kahr | Title: Optimization and Analysis of Large-Scale Networks<br>Funding: WWTF<br>Funding period: 2015-2019 |

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| Georg Pflug (Project-Coordinator), Immanuel Bomze (Co-Investigator), Radu Ioan Bot (Co-Investigator), Monika Henzinger (Co-Investigator), Arnold Neumaier (Co-Investigator), Günther Raidl (Co-Investigator) Hermann Schichl (Co-Investigator), Teresa Scarinci (Scientific Coordinator & post-doc assistant)<br>Research Associates: Axel Böhm, Marko Djukanovic, Markus Gabl, Caroline Geiersbach, Mathias Horn, Morteza Kimiaei, Stefan Neumann, Dang Khoa Nguyen | Title: Vienna Graduate School on Computational Optimization (VGSCO)<br>Funding: FWF<br>Funding period: 2016-2020 |
| Georg Pflug (Project-Coordinator)<br>Research Associates: Daniela Escobar, Martin Glanzer | Title: Incorporating Model Error in the Management of Electricity Portfolios<br>Funding: Université de Paris Sud Mathematique – FMJH<br>Funding period: 2017-2019 |
| C. Pignotti (Project Coordinator), Teresa Scarinci (Co-Investigator) | Title: Analysis and control of nonlinear differential models<br>Funding: INdAM (Italian National Institute of High Mathematics)<br>Funding period: 2018 |
| Walter Schachermayer (Project-Coordinator), Nikolaus Hautsch (Co-Investigator), Georg Pflug (Co-Investigator)<br>Research Associates: Mathias Pohl, Alexander Ristig, Ludovic Tangpi | Title: Portfolio Risk and Asset Allocation - Utilizing High-Frequency Information in High Dimensions<br>Funding: WWTF<br>Funding period: 2015-2019 |

# 8 Research Stays at Other Institutions

| | Institution | Weeks |
|---|---|---|
| Immanuel Bomze | Université Paris XIII, France | 1 |
| Immanuel Bomze | Kraków University of Economics, Poland | 0,5 |
| Immanuel Bomze | Université Paris XI - Paris-Sud | 0,5 |
| Marek Chudy | The University of Chicago, USA | 24 |
| Daniela Escobar | EDF R&D, Paris, France | 1,5 |
| Caroline Geiersbach | Regensburg University, Germany | 0,5 |

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| Caroline Geiersbach | TU Darmstadt, Germany | 0,5 |
| Caroline Geiersbach | Trier University, Germany | 1 |
| Martin Glanzer | EDF R&D, Paris, France | 1,5 |
| Markus Leitner | ESSEC Business School of Paris, France | 1 |
| Markus Leitner | Université Libre de Bruxelles, Belgium | 1 |
| Markus Leitner | Universidade de Lisboa, Portugal | 0,5 |
| Georg Pflug | Università degli studi di Bergamo, Italy | 1 |
| Georg Pflug | Freie Universität Bozen, Italy | 1 |
| Mario Ruthmair | ESSEC Business School, France | 0,5 |
| Mario Ruthmair | Universidade de Lisboa, Portugal | 0,5 |
| Teresa Scarinci | Institut Fourier, Université Grenoble Alpes – CNRS, France | 0,5 |

# 9 Other Faculty Activities

## Editorial Work

Immanuel Bomze

Editor
- European Journal of Operational Research

Associate Editor
- Central European Journal of Operations Research

Member of Editorial Board
- Advances in Data Analysis and Classification
- Journal of Global Optimization
- Optimization Letters
- Operations Research Perspectives

Walter Gutjahr

Co-Editor
- OR Spectrum

Associate Editor
- Central European Journal of Operations Research

Member of Editorial Board
- Production and Operations Management
- EURO Journal on Decision Processes

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| Nikolaus Hautsch | Associate Editor<br>▪ Journal of Applied Econometrics<br>▪ Journal of Business & Economic Statistics<br>▪ International Journal of Forecasting<br>▪ Empirical Economics<br>▪ Journal of Financial Econometrics<br>▪ Market Microstructure and Liquidity<br><br>Member of Editorial Board<br>▪ Econometrics |
| Hannes Leeb | Associate Editor<br>▪ Sankhya: Indian Journal of Statistics |
| Georg Pflug | Associate Editor<br>▪ Computational Optimization and Applications<br>▪ Computational Management Science<br>▪ Central European Journal of OR<br>▪ Austrian Journal of Statistics<br>▪ Energy Systems: Optimization, Modeling, Simulation and Economic Aspects<br>▪ Operations Research<br>▪ Journal of Stochastic Analysis<br>▪ Stochastic Programming Electronic Publication Series<br>▪ Statistics and Risk Modeling<br><br>Member of Editorial Board<br>▪ Financial Mathematics and Applications<br><br>Guest editor<br>▪ Cejor special volume “Modelling and management of commodities and financial markets” |
| Benedikt M. Pötscher | Co-Editor of<br>▪ Econometric Theory<br><br>Associate Editor of<br>▪ Journal of Statistical Planning and Inference |

## Refereeing

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|---|---|
| Immanuel Bomze | ▪ Linear and Multilinear Algebra<br>▪ Numerical Algorithms<br>▪ Journal of Global Optimization<br>▪ Optimization Letters<br>▪ Journal of Optimization Theory and Applications<br>▪ Mathematics of Operations Research |

Martin Glanzer

- Central Optimization: a journal of mathematical programming and operations research

Walter J. Gutjahr

- Annals of Operations Research (1)
- Central European J. of Operations Research (1)
- European J. of Operational Research (1)
- IEEE Trans. on Systems, Man and Cybernetics (1)
- IISE Transactions (1)
- International J. of Disaster Risk Reduction (1)
- International J. of Logistics (1)
- International Transactions in Operations Research (1)
- International Journal of Production Research (1)
- J. of Humanitarian Logistics and Supply Chain Management (1)
- OR Spectrum (2)
- Production and Operations Management (2)
- Transportation Research Part B (1)
- Transportation Research Part E (2)

Nikolaus Hautsch

- Econometrica
- Journal of Applied Econometrics (2)
- Annals of Statistics
- Journal of Econometrics (2)
- DFG

Reviewer for Workshops

- 5th Annual conference of the International Association of Applied Econometrics (Montreal, Canada)
- Finance Down Under Conference (Melbourne, Australia)
- 11th Annual Society for Financial Econometrics (SoFiE) (Lugano, Switzerland)

Irene Klein

- Finance & Stochastics (1)
- Mathematics and Financial Economics (1)
- Stochastic processes and their applications (1)

Markus Leitner

- Computers and Operations Research
- INFORMS Journal on Computing
- Networks
- SIAM Journal on Optimization
- Transportation Research Part B: Methodological
- Transportation Science

Benedikt M. Pötscher

- Econometric Theory
- Quantitative Economics

Mario Ruthmair

- Transportation Research Part B: Methodological
- EURO Journal on Transportation and Logistics
- Discrete Optimization

Reviewer for Conferences

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|---|---|
| | ▪ 20th Conference on Integer Programming and Combinatorial Optimization<br>▪ ICCL2018 - 9th International Conference on Computational Logistics |
| Teresa Scarinci | ▪ ESAIM-COCV<br>▪ AMS-American Mathematical Society |
| Werner Schachinger | ▪ Mathematical Programming |

## Other Professional Activities

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|---|---|
| Immanuel Bomze | ▪ Deputy Director of Studies Program Statistics, University of Vienna, Austria (1.10.2018– 31.12.2018)<br>▪ Director of Studies PhD Program, University of Vienna, Austria (1.1.2018-30.09.2018)<br>▪ Organizer of the Vienna Graduate School on Computational Optimization 17.12.-19.12.2018<br>▪ EURO President Elect |
| Walter J. Gutjahr | ▪ Program Committee Member EvoCOP 2018<br>▪ Panel Chair at Workshop on Optimization, Game Theory, and Data Analysis, Vienna Austria |
| Nikolaus Hautsch | ▪ Dean of the Faculty<br>▪ Interim Head of Department of Business Administration<br>▪ Scientific Advisory Board Forschungsdateninfrastruktur für Finanzdaten, SAFE Frankfurt<br>▪ Deputy Head of Research Platform „Data Science @ Uni Vienna" |
| Irene Klein | ▪ Co-Organizer Freiburg-Vienna-Zurich-Workshop, Strobl, Austria 01.-07-04.07.2018<br>▪ Co-Organizer Freiburg-Vienna-Zurich-Seminar, Vienna, Austria, 03.10.-05.10.2018<br>▪ Co-Organizer Workshop on Optimization, Game Theory and Data Analysis, Vienna, Austria, 20.12.-21.12.2018 |
| Hannes Leeb | ▪ Co-organizer of Workshop "Model Selection, Regularization and Inference" |
| Markus Leitner | ▪ Co-Organizer Workshop on Optimization, Game Theory and Data Analysis, Vienna, Austria, 20.12.-21.12.2018 |
| Georg Pflug | ▪ Speaker of the Vienna Graduate School on Computational Optimization<br>▪ Director of Studies PhD Program, University of Vienna, Austria<br>▪ Member FWF-Kuratorium (Applied Mathematics)<br>▪ Scientific Advisory Board Member at IMPA - Instituto Nacional de Matemática Pura e Aplicada, Brasil |

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| | ▪ Co-organizer of the Oberwolfach conference “New directions in stochastic optimization” 19.08.-24.08.2018<br>▪ Organizer of the Vienna Gradutate School on Computational Optimization 17.12.-19.12.2018<br>▪ Member of the panel for a transregio research theme of the German Forschungsgemeinschaft DFG<br>▪ External reviewer of a PHD Thesis for Islamabad U, Pakistan<br>▪ External member of a PHD committee in HEC, Montreal, Canada<br>▪ Member of a Habilitation Committee in Paris, France<br>▪ External reviewer of a habilitation thesis at the University of Singapore<br>▪ Member of a Habilitation Committee at the University of St. Gallen, Switzerland |
| Benedikt M. Pötscher | ▪ Co-organizer of Workshop “Model Selection, Regularization and Inference”<br>▪ Head of Department: Statistics and Operations Research |
| Erhard Reschenhofer | ▪ Vice Directorate of Studies Program Statistics (University of Vienna)<br>▪ Deputy Head of Department: Statistics and Operations Research |
| Mario Ruthmair | ▪ Co-organizer of the Workshop on Optimization, Game Theory, and Data Analysis, Vienna, Austria, 20.12.-21.12.2018 |
| Werner Schachinger | ▪ Co-organizer of the Workshop on Optimization, Game Theory, and Data Analysis, Vienna, Austria, 20.12.-21.12.2018 |