Prof. Dr. rer.nat. habil. Sebastian Sager

Wilhelm-Kobelt-Strasse 9
39108 Magdeburg, Germany

Phone: +49 162 8819293
sebastian@sager1.de
https://mathopt.de/Sager

* 7.3.1975, Westerstede (D), married, 1 daughter

Education and Positions

4/2017–	• **Spokesperson** of DFG research training group 2297 "Mathematical Complexity Reduction"
4/2012–	• **W3 full professor** at the Faculty of Mathematics, Otto-von-Guericke-Universität Magdeburg
4/2012	• **Habilitation** at the Ruprecht-Karls-Universität Heidelberg
10/2008–3/2012	• **Junior Research Group Leader** at the Interdisciplinary Center for Scientific Computing (IWR), Heidelberg
2/2008–9/2008	• **Akademischer Rat auf Zeit** at IWR, Heidelberg
4/2007–1/2008	• **Postdoc** in the SIMUMAT research team on aerodynamic shape optimization, Universidad Autónoma, Madrid (E)
10/2006–3/2007	• Akademischer Rat auf Zeit at IWR Heidelberg
2/2006–9/2006	• Postdoc at the IWR, Heidelberg
2/2002–2/2006	• **PhD thesis** *Numerical methods for mixed-integer optimal control problems* in mathematics, supervised by G. Reinelt and H.G. Bock (grade: summa cum laude)
2/2002–2/2005	• Member of the International DFG Graduiertenkolleg 710
2/2004–4/2004	• Research stays at the Universidad Carlos III de Madrid and the Universidad de Valladolid (E)
10/1995–12/2001	• Studies at the Universität Heidelberg, **diploma** in mathematics with specialization in physics/astronomy (grade: excellent)
1/2000–5/2000	• Exchange student at the University of Ho-Chi-Minh-City (VN)
9/1997–7/1998	• Exchange student at the Université de Montpellier (F)
6/1994	• Abitur at the Gymnasium Westerstede

Offers, Honors, and Awards

2016	• **ERC Proof of Concept Grant** isitFlutter-727417
2015	• **ERC Consolidator Grant** MODEST-647573 "Mathematical Optimization for Clinical Decision Support and Training"
	• **Otto-von-Guericke Research Award**
2012–	• Guest professor at IWR, University of Heidelberg
2011	• Offer for a chair (W3 professor) at the University of Magdeburg, realized
2007	• Klaus Tschira Award for Achievements in Public Understanding of Science
2006	• Dissertation prize of the German Operations Research Society
2002	• 3 year scholarship of the Deutsche Forschungsgemeinschaft

Teaching and Academic Work

Teaching: Lectures

2012, '14 • *Introduction to Optimization* (B)
2013, '15, '17 • *Nonlinear Optimization* (B/M)
2012, '14, '16 • *Mixed-integer nonlinear Optimization* (B/M)
2008 • *Mixed-integer nonlinear and dynamic Optimization* (M)
2012, '14, '17 • *Optimal Control* (M)
2013, '15, '17 • *Algorithmic Parameter Estimation and Experimental Design* (M)
2008 • *Introduction to Numerics* (B)
2006, '09 • *Numerics 2* (M)

Teaching: Seminars

2013, '15 • *Optimal Control* (M)
2015 • *Optimal Control Software* (M)
2014 • *Global Optimization* (M)
2014 • *Chebfun* (M)
2011 • *Global and Stochastic Optimization* (M)
2009 • *Scientific Software Engineering* (M)
2008 • *Artificial Intelligence and Robotics* (B/M)
2006 • *Optimal control in economics* (M)

Teaching: Compact Courses

2013, '17 • *Optimization under Uncertainties* (PhD)
2014, '17 • *Complexity Reducing Formulations in Optimization* (PhD)
2009, '12 • *Optimization with Differential Equations* (PhD)
2010 • *Nonlinear Optimization* (PhD)
2005, '10 • *Mixed-Integer Nonlinear Programming* (PhD)

Academic work

2017- • Member *Forschungskommission* at OVGU
2016- • Member *Rektoratskommission Gleichstellung* at OVGU
2016 • Organizing committee member of the *IFAC FOSBE* 2016
2015 • Organizer of the *Oberwolfach Workshop on MINLP*
2013-2017 • Editor and Guest-Editor of *Optimal Control and Applications*
2013 • Co-organizer of the *CWMINLP13 workshop* in Paris
2012 • Scientific committee member of the *Global Optimization Workshop*
• Guest editor of *Computational Science*
2012- • Main organizer of public outreach activity "Magdeburger Mathenacht"
2012- • Series editor of the *Differential-Algebraic Equations Forum*, Springer
2011 • Organizer of the ANLO11 workshop *Nonlinear Optimization*
• Organizer of the OCE11 workshop *Optimal Control & Economics*
2010 • Organizer of the SOCCER 2010 conference on *Commodities*
• Organizer of the SCCS 2010 symposium
Scientific Computing for the Cognitive Sciences
2009 • Organizer of the
German-American Frontiers of Engineering Symposium 2009
2008 • Co-organizer of OPTEX2008 workshop on *Industrial Modeling*
2007 • Organizer and co–chair of the
Czech–French–German Conference on Optimization 2007

Third Party Funding

2019-2021 • **Excellency–Synergy** Program of Saxony-Anhalt, ca. **280 kEuro**
2017-2021 • **DFG RTG 2297** *Mathematical Complexity Reduction* (spokesperson), ca. **4200 kEuro**, with 10 PIs
2017-2020 • Project *OTTI* with Volkswagen, ca. **300 kEuro**, spokesperson, 2 PIs
2016-2019 • DFG SPP 1962: *Non-smooth Methods for Complementarity Formulations of Switched Advection-Diffusion Processes* with C. Kirches, **9 kEuro**
2016-2018 • **ERC Proof of Concept Grant** isitFlutter-727417, ca. **150 kEuro**
2016 • **High Performance** Program of Saxony-Anhalt, ca. **100 kEuro**
2015-2020 • **ERC Consolidator Grant** MODEST-647573, ca. **2000 kEuro**
2014-2017 • Project *Revenue Management* with Air Berlin, ca. **12 kEuro**
2013-2016 • BMBF Project "GOSSIP" on *Mixed-integer optimal control* with BASF, Daimler, TLK-Thermo, ca. **200 kEuro**
2013-2016 • Klaus-Tschira-Foundation: *Cardiac arrhythmia*, ca. **125 kEuro**
2010–2013 • EU project EMBOCON with ETH, ICL, Leuven, Bucharest, industry: overall 3.25 million Euro, own share ca. **472 kEuro**
2009-2012 • Project *Revenue Management* with Lufthansa, ca. **135 kEuro**
2009-2012 • DFG SPP 1253 *Optimization with Partial Differential Equations*, project with Dortmund: overall 135 kEuro, own share ca. **45 kEuro**
2009-2012 • 4 DFG Graduate School stipends, ca. **216 kEuro** (HD internal)

Supervision

11 Ongoing PhD theses (as first advisor)

2016- • Hahn, M.: *Mixed-integer PDE constrained optimization*
2015- • Jost, F.: *Dual control for individualized treatment of blood cancer*
2012- • Kehrle, F.: *Optimization-based inverse simulation of atrial tachycardia*
2017- • Duc Le, D.: *Optimal urban traffic*
2017- • Lilienthal, P.: *Mathematical modeling and optimization of thrombosis*
2015- • Matke, C.: *Modeling and optimization of battery storage in the German power grid*
2015- • Tetschke, M.: *Global optimal control for clinical treatment*
2017- • Uebbing, J.: *Modeling and Optimization of Power2Chemicals processes*
2014- • Weber, T.: *Optimal cardiac ablation strategies*
2015- • Weniger, S.: *Portfolio optimization with stochastic differential equations*
2015- • Zeile, C.: *Scientific computing for cardiovascular training simulators*

2 Ongoing PhD theses (as second advisor)

2015- • Himmel, A.: *Simultaneous design and control of Power2Chemicals processes*
2016- • Peters, B.: *Polynomial optimization on polytopes*

7 Completed PhD theses (as first advisor)

2017 • Rauch, J.: *The Airline Pricing Problem*
2016 • Sorgatz, S.: *Optimization of Vehicular Traffic at Traffic-Light Intersections*
2015 • Engelhart, M.: *Optimization–based training of human decision making*
• Diedam, H.: *Global optimal control using direct multiple shooting*
2014 • Frasch, J.: *Parallel algorithms for optimization of dynamic systems in real time*
• Huschto, T.: *Numerical Methods for Random Parameter Optimal Control and the Optimal Control of Stochastic Differential Equations*

Supervision (continued)

2013 • Jung, M.: *Relaxations and approximations for mixed-integer optimal control*

2 Completed PhD theses (as second advisor)

2013 • Kellner, S.: *Modeling of Demand for Commodities and a Case Study of the Petrochemical Market*

• Kramer, L.: *Modeling and Reduction of a Multi-Commodity Supply-Demand Trade Network*

Publications

5 Most Important Publications

2017 • Weber, T., Katus, H.A., Sager, S., Scholz E.P., *Novel Algorithm for Accelerated Electroanatomic Mapping and Prediction of Earliest Activation of Focal Cardiac Arrhythmias using Mathematical Optimization*, **Heart Rhythm**, Vol 14 (6), pp. 875–882

2016 • Janka, D., Kirches, C., Sager, S., Wächter, A., *An SR1/BFGS SQP algorithm for nonconvex nonlinear programs with block-diagonal Hessian matrix*, **Mathematical Programming Computation**, Vol. 8 (4), pp. 435–459

2013 • Sager, S., *Sampling Decisions in Optimum Experimental Design in the Light of Pontryagin's Maximum Principle*, **SIAM Journal on Control and Optimization**, Vol. 51(4), pp. 3181–3207

2012 • Sager, S., Bock, H.G., Diehl, M., *The Integer approximation error in mixed-integer optimal control*, **Mathematical Programming A**, Vol. 133(1-2), pp. 1–23

2009 • Sager, S., *Reformulations and algorithms for the optimization of switching decisions in nonlinear optimal control*, **Journal of Process Control**, Vol. 19, pp. 1238–1247

2 Patents

2014 • Scholz, E., Sager, S., Katus, H., *A system and computer program product for automatically distinguishing atrial flutter from atrial fibrillation*, EP2757940A1, 30.7.2014, https://www.google.com/patents/EP2757940A1

2010 • Gehring, O., Kauffmann, F., Bock, H.G., Kirches, C., Sager, S., Schlöder, J.P., *Verfahren zum Steuern des Betriebs eines Fahrzeugs*, DE102009030784A1, 4.2.2010, http://www.google.com/patents/DE102009030784A1

3 Theses

2011 • Sager, S., *On the Integration of Optimization Approaches for Mixed-Integer Nonlinear Optimal Control*, habilitation thesis, Ruprecht-Karls-Universität Heidelberg, 2011, https://mathopt.de/PUBLICATIONS/Sager2011d.pdf

2005 • Sager, S., *Numerical methods for mixed–integer optimal control problems*, PhD thesis, Ruprecht-Karls-Universität Heidelberg, published in Der Andere Verlag, Tönning, Lübeck, Marburg, ISBN 3-89959-416-9, available at https://mathopt.de/PUBLICATIONS/Sager2005.pdf

2001 • Sager, S., *Lange Schritte im Dualen Simplex-Algorithmus*, diploma thesis, Ruprecht-Karls-Universität Heidelberg, available at https://mathopt.de/PUBLICATIONS/Sager2001.pdf

Publications (continued)

34 Journal Publications

2017
- Diedam, H., Sager, S., *Global optimal control with the direct multiple shooting method*, **Optimal Control Applications and Methods**, DOI 10.1002/oca.2324
- Engelhart, M., Funke, J., Sager, S. *A Web-based Feedback Study on Optimization-based Training and Analysis of Human Decision Making*, **Journal of Dynamic Decision Making**, Vol. 3 (1)
- Jost, F., Sager, S., Le Thi, T.T., *A Feedback Optimal Control Algorithm with Optimal Measurement Time Points*, **Processes**, Vol. 5 (1), 10
- Weber, T., Katus, H.A., Sager, S., Scholz E.P., *Novel Algorithm for Accelerated Electroanatomic Mapping and Prediction of Earliest Activation of Focal Cardiac Arrhythmias using Mathematical Optimization*, **Heart Rhythm**, Vol 14 (6), pp. 875–882

2016
- Janka, D., Kirches, C., Sager, S., Wächter, A., *An SR1/BFGS SQP algorithm for nonconvex nonlinear programs with block-diagonal Hessian matrix*, **Mathematical Programming Computation**, Vol. 8 (4), pp. 435–459

2015
- Frasch, J. V., Sager, S., Diehl, M., *A parallel quadratic programming method for dynamic optimization problems*, **Mathematical Programming Computation**, Vol. 7 (3), pp. 289–329
- Jung, M.N., Reinelt, S., Sager, S., *The Lagrangian Relaxation for the Combinatorial Integral Approximation Problem*, **Optimization Methods and Software**, Vol. 30 (1), pp. 54–80
- Sager, S., Claeys, M., Messine, F., *Efficient upper and lower bounds for global mixed-integer optimal control*, **Journal of Global Optimization**, Vol. 61 (4), pp. 721–743

2014
- Duran, B.J., Jung, M.N., Ocampo-Martinez, C., Sager, S., Cambrano, G., *Minimization of Sewage Network Overflow*, **Water Resources Management**, Vol. 28 (1), pp. 41–63
- Huschto, T, Sager, S., *Pricing conspicuous consumption products in recession periods with uncertain strength*, **European Journal of Decision Processes**, Vol. 2 (1–2), pp. 3–30
- Huschto, T., Sager, S., *Solving Stochastic Optimal Control Problems by a Wiener Chaos Approach*, **Vietnam Journal of Mathematics**, Vol. 42(1), pp. 83–113
- Scholz, E.P., Kehrle, F., Vossel, S., Hess, A., Zitron, E., Katus, H.A., Sager, S., *Discriminating atrial flutter from atrial fibrillation using a multilevel model of atrioventricular conduction*, **Heart Rhythm**, Vol. 11(5), pp. 877–884

2013
- Engelhart, M., Funke, J., Sager, S., *A Decomposition Approach for a New Test-Scenario in Complex Problem Solving*, **Journal of Computational Science**, Vol. 4(4), pp. 245–254
- Hante, F., Sager, S., *Relaxation Methods for Mixed-Integer Optimal Control of Partial Differential Equations*, **Computational Optimization and Applications**, Vol. 55(1), pp. 197–225
- Kirches, C., Potschka, A., Bock, H.G., Sager, S., *A Parametric Active Set Method for QPs with Vanishing Constraints Arising in a Robot Motion Planning Problem*, **Pacific Journal of Optimization**, Vol. 9(2), pp. 275–299
- Sager, S., *Sampling Decisions in Optimum Experimental Design in the Light of Pontryagin's Maximum Principle*, **SIAM Journal on Control and Optimization**, Vol. 51(4), pp. 3181–3207

Publications (continued)

2012
- Sager, S., Bock, H.G., Diehl, M., *The Integer approximation error in mixed-integer optimal control*, **Mathematical Programming A**, Vol. 133(1-2), pp. 1–23

2011
- Engelhart, M., Lebiedz, D., Sager, S., *Optimal control for cancer chemotherapy ODE models: Potential of optimal schedules and choice of objective function*, **Mathematical Biosciences**, Vol. 229(1), pp. 123–134
- Huschto, T., Feichtinger, G., Kort, P., Hartl, R.F., Sager, S., Seidl, A., *Numerical solution of a conspicuous consumption model with constant control delay*, **Automatica**, Vol. 47(9), 1868–1877
- Kirches, C., Bock, H.G., Schlöder, J.P., Sager, S., *Block structured quadratic programming for the direct multiple shooting method for optimal control*, **Optimization Methods and Software**, Vol. 26(2), 239–257
- Kirches, C., Bock, H.G., Schlöder, J.P., Sager, S., *A factorization with update procedures for a KKT matrix arising in direct optimal control*, **Mathematical Programming Computation**, Vol 3(4), pp. 319–348
- Sager, S., Barth, C., Diedam, H., Engelhart, M., Funke, J., *Optimization as an analysis tool for human complex problem solving*, **SIAM Journal on Optimization**, Vol. 21(3), pp. 936–959
- Sager, S., Jung, M.N., Kirches, C., *Combinatorial integral approximation*, **Mathematical Methods for Operations Research**, Vol. 73(3), pp. 363–380

2010
- Logist, F., Sager, S., Kirches, C., Van Impe, J.F., *Efficient multiple objective optimal control of dynamic systems with integer controls*, **Journal of Process Control**, Vol. 20(7), 810–822
- Kirches, C., Sager, S., Bock, H.G., Schlöder, J.P., *Time-optimal control of automobile test drives with gear shifts*, **Optimal Control Applications and Methods**, Vol. 31(2), 137–153

2009
- Sager, S., Reinelt, G., Bock, H.G., *Direct methods with maximal lower bound for mixed–integer optimal control problems*, **Mathematical Programming**, Vol. 118(1), pp. 109–149
- Sager, S., *Reformulations and algorithms for the optimization of switching decisions in nonlinear optimal control*, **Journal of Process Control**, Vol. 19, pp. 1238–1247

2008
- Brandt-Pollmann, U., Winkler, R., Sager, S., Moslener, U., Schlöder, J.P., *Numerical solution of optimal control problems with constant control delays*, **Computational Economics**, Vol. 31(2), pp. 181–206
- Shaik, O.S., Sager, S., Slaby, O., Lebiedz, D., *Phase tracking and restoration of circadian rhythms by model-based optimal control*, **IET Systems Biology**, Vol. 2, pp. 16–23

2007
- Slaby, O., Sager, S., Shaik, O.S., Kummer, U., Lebiedz, D., *Optimal control of self-organized dynamics in cellular signal transduction*, **Mathematical and Computer Modelling of Dynamical Systems**, Vol. 13, pp. 487–502
- Sager, S., Brandt-Pollmann, U., Diehl, M., Lebiedz, D., Bock, H.G., *Exploiting system homogeneities in large scale optimal control problems for speedup of multiple shooting based SQP methods*, **Computers & Chemical Engineering**, Vol. 31, pp. 1181–1186

Publications (continued)

2006 • König, R., Schramm, G., Oswald, M., Seitz, H., Sager, S., Zapatka, M., Reinelt, G., Eils, R., *Discovering functional gene expression patterns in the metabolic network of Escerichia coli with wavelet transforms*, **BMC Bioinformatics**, 7:119

2005 • Lebiedz, D., Sager, S., Bock, H.G., Lebiedz, P., *Annihilation of limit–cycle oscillations by identification of critical perturbing stimuli via mixed–integer optimal control*, **Physical Review Letters**, 95, 108303

• Brandt-Pollmann, U., Lebiedz, D., Diehl, M., Sager, S., Schlöder, J.P., *Real-time nonlinear feedback control of pattern formation in (bio)chemical reaction–diffusion processes: A model study*, **Chaos**, 15, 033901, selected for online-publication in **Virtual Journal of Biological Physics Research**, July 15, 2005

11 Book Contributions

2017 • Matke, C., Bienstock, D., Munoz, G., Yang, G., Kleinhans, D., Sager, S., *Robust optimization of power network operation: storage devices and the role of forecast errors in renewable energies*, Studies in Computational Intelligence, Complex Networks & Their Applications V, Springer, ISBN 978-3-319-50900-6, pp. 809-820

• Matke, C., Medjroubi, W., Kleinhans, D., Sager, S., *Structure Analysis of the German Transmission Network Using the Open Source Model SciGRID*, Trends in Mathematics, Advances in Energy System Optimization, Springer, ISBN 978-3-319-51795-7, pp. 177–188

2014 • Zanon, M., Frasch, J.V., Vukov, M., Sager, S., Diehl, M., *Model Predictive Control of Autonomous Vehicles*, Eds. Waschl, H., Kolmanovsky, I. Steinbuch, M., del Re, L., Optimization and Optimal Control in Automotive Systems, Springer, ISBN 978-3-319-05370-7, pp. 41-57

2013 • Jung, M.N., Kirches, C., Sager, S., *On perspective functions and vanishing constraints in mixed-integer nonlinear optimal control*, Eds. Jünger, M., Reinelt, G., Facets of Combinatorial Optimization, Springer, ISBN 978-3-642-38188-1, pp. 387–417

2012 • Gerdts, M., Sager, S., *Mixed-Integer DAE Optimal Control Problems: Necessary conditions and bounds*, Eds. Biegler, L., Campbell, S., Mehrmann, V., Control and Optimization with Differential-Algebraic Constraints, SIAM, ISBN 978-1-611972-24-5, pp. 189–212

• Sager, S., *A benchmark library of mixed-integer optimal control problems*, Springer, Eds. Lee, J., Leyffer, S., Mixed Integer Nonlinear Programming, The IMA Volumes in Mathematics and its Applications, Vol. 154, ISBN 978-1-4614-1926-6, pp. 631–670

2011 • Potschka, A., Bock, H.G., Sager, S., Schlöder, J.P., *On the connection between forward and optimization problem in one-shot one-step methods*, Springer, Eds. Leugering, G. et al., Constrained Optimization and Optimal Control for Partial Differential Equations, International Series of Numerical Mathematics Vol. 160, ISBN 978-3-0348-0132-4

2010 • Grüne, L., Sager, S., Allgöwer, F., Bock, H.G., Diehl, M., *Predictive planning and systematic action – on the control of technical processes*, Springer, Eds. Grötschel, M., Lucas, K., Mehrmann, V., Production Factor Mathematics, ISBN 978-3-6421-1247-8, pp. 9–38

Publications (continued)

- Kirches, C., Wirsching, L., Sager, S., Bock, H.G., *Efficient numerics for nonlinear model predictive control*, Springer, Eds. Diehl, M., Glineur, F., Jarlebring, E., Michiels, W., Recent Advances in Optimization and its Applications in Engineering, ISBN 978-3-6421-2597-3, pp. 339–359

2009
- Sager, S., Bock, H.G., Diehl, M., Reinelt, G., Schlöder, J.P., *Numerical methods for optimal control with binary control functions applied to a Lotka-Volterra type fishing problem*, Springer, Eds. Seeger, A., Recent Advances in Optimization, ISBN 978-3-5402-8257-0, pp. 269–289

2008
- Grüne, L., Sager, S., Allgöwer, F., Bock, H.G., Diehl, M., *Vorausschauend planen, gezielt handeln – über die Regelung und Steuerung technischer Prozesse*, acatech, Eds. Grötschel, M., Lucas, K., Mehrmann, V., Produktionsfaktor Mathematik, ISBN 978-3-8167-7642-0, pp. 27–62

14 Peer-Reviewed Proceedings Publications

2016
- Jost, F., Rinke, K., Fischer, T., Schalk, E., Sager, S.*Patient specific sampling decisions by optimum experimental designs for Leukopenia*, **6th IFAC Conference on Foundations of Systems Biology in Engineering**
- Rinke, K., Jost, F., Findeisen, R., Fischer, T., Bartsch, R., Schalk, E., Sager, S.*Parameter estimation for leukocyte dynamics after chemotherapy*, **6th IFAC Conference on Foundations of Systems Biology in Engineering**
- Zeile, C., Scholz, E., Sager, S.*A Simplified 2D Heart Model of the Wolff-Parkinson-White Syndrome*, **6th IFAC Conference on Foundations of Systems Biology in Engineering**

2013
- Frasch, J.V., Gray, A.J., Zanon, M., Ferreau, H.J., Sager, S., Borrelli, F., Diehl, M., *An Auto-generated Nonlinear MPC Algorithm for Real-Time Obstacle Avoidance of Ground Vehicles*, **ECC 2013**
- Huschto, T., Sager, S., *Stochastic Optimal Control in the Perspective of the Wiener Chaos*, **ECC 2013**
- Kirches, C., Bock, H.G., Schlöder, J.P., Sager, S., *Mixed-integer NMPC for predictive cruise control of heavy-duty trucks*, **ECC 2013**

2012
- Frasch, J.V., Wirsching, L., Sager, S., Bock, H.G., *MixedLevel Iteration Schemes for Nonlinear Model Predictive Control*, Proceedings of the **4th IFAC NMPC Conference**, Eds. Lazar, M., Allgöwer, F.
- Kirches, C., Bock, H.G., Schlöder, J.P., Sager, S., *Complementary Condensing for the Direct Multiple Shooting Method*, *Modeling, Simulation, and Optimization of Complex Processes*, **HPSC 2009**, Springer, pp. 195–206

2011
- Kehrle, F., Frasch J.V., Kirches, C., Sager, S., *Optimal control of Formula 1 race cars in a VDrift based virtual environment*, **IFAC World Congress 2011**, Paper ThB21.2, Milano

2010
- Sager, S., Barth, C., Diedam, H., Engelhart, M., Funke, J., *Optimization to measure performance in the Tailorshop test scenario — structured MINLPs and beyond*, Proceedings **EWMINLP10**, pp. 261–269, CIRM, Marseille

2008
- S. Sager, C. Kirches, H.G. Bock, *Fast solution of periodic optimal control problems in automobile test-driving with gear shifts*, **IEEE CDC08 Proceedings**, ISBN: 978-1-4244-3124-3

2007
- Sager, S., Diehl, M., Singh, G., Küpper, A., Engell, S., *Determining SMB superstructures by mixed–integer optimal control*, Proceedings OR 2006, Eds. K.-H. Waldmann, U.M. Stocker, Springer, pp. 37–44

Publications (continued)

2006 • Lebiedz, D., Sager, S., Shaik, O.S., Slaby, O., *Optimal control of self-organized dynamics in cellular signal transduction*, Proceedings of the 5th Vienna Symposium of Mathematical Modeling, Vienna, Argesim Rep. 30

2005 • Körkel, S., Qu, H., Rücker, G., Sager, S., *Derivative Based vs. Derivative Free Optimization Methods for Nonlinear Optimum Experimental Design*, Proceedings of HPCA2004 Conference, pp. 339–345, Springer, Shanghai

3 Popular Science Publications

2011 • Frasch, J., Janka, D., Kircheis, R., Sager, S., *Das Rucksackproblem der Bundesligamanager*, **OR News**, 43, pp. 6–9

2007 • Sager, S., *Von diskreten Mathematikern und Wanderungen im Gebirge*, **Bild der Wissenschaft plus**, Vol. 11, pp. 12–15, available at http://www.klaus-tschira-preis.info/download/2007/BDW_KTP_2007.pdf

2006 • Sager, S., *Numerische Methoden für Probleme der gemischt–ganzzahligen Optimalen Steuerung*, **OR News**, 28, pp. 30–31

Reviewing Activities

- CDC, Computational and Mathematical Methods in Medicine, Computational Optimization and Applications, Computers and Chemical Engineering, Discrete Optimization, Environmental Modelling and Software, European Journal of Operational Research, IEEE TAC, IFAC, Industrial & Engineering Chemistry Research, INFORMS Journal on Computing, Journal of Process Control, MMOR, Mathematical Programming, Open Applied Mathematics Journal, OCAM, Optimization, Optimization and Engineering, SICON
- Klaus Tschira Foundation
- Alexander von Humboldt Foundation
- Dutch National Science Foundation

Magdeburg, 15. November 2017,