

Prof. Dr. Matthias Voigt

Curriculum Vitae (June 29, 2026)



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Research Interests

Differential-algebraic equations, optimal and robust control, matrix equations and inequalities, numerical linear and multilinear algebra (in particular, structured and nonlinear eigenvalue problems), numerical optimization, model order reduction and system identification, harmonic analysis and signal processing, mathematical software, mathematics applications in science and engineering (mechanics, vibroacoustics, computational neuroscience)

Teaching Interests

Systems and control theory, model order reduction, continuous optimization, (numerical) linear algebra, functional analysis, numerics and optimization of partial differential equations, ordinary differential equations, differential-algebraic equations

Academic Degrees

- 05/2015 **Dr. rer. nat.**, Otto-von-Guericke-Universität Magdeburg, Germany
07/2010 **Dipl.-Math.**, Technische Universität Chemnitz, Germany

Education

- 10/2010–05/2015 **Doctoral studies in Mathematics**, *Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany*
- 01/2011–05/2015: Doctoral student of the “International Max Planck Research School for Advanced Methods in Process and Systems Engineering”,
 - 02/2013–05/2013: Research stay at New York University, Courant Institute of Mathematical Sciences,
 - Thesis: “On Linear-Quadratic Optimal Control and Robustness of Differential-Algebraic Systems” (promoted by Peter Benner and Paul Van Dooren),
 - Final grade: “summa cum laude (excellent)”.
- 10/2004–07/2010 **Diplom studies in Mathematics**, *Technische Universität Chemnitz, Chemnitz, Germany*
- Major: numerical mathematics, minor: physics,
 - 01/2008–05/2008: Exchange studies at the University of Helsinki,
 - Thesis: “ $\mathcal{L}_\infty$ -Norm Computation for Descriptor Systems” (promoted by Peter Benner and Vasile Sima),
 - Final grade: “very good”.
- 08/1992–07/2004 **Secondary education**, *Gymnasium „Prof. Dr. Max Schneider“, Lichtenstein, Germany*
- 07/2004: Abitur (university entrance diploma),
 - Final grade: 1.3 (very good).

Professional Experience

- since 02/2026 **Vice-Dean**, *UniDistance Suisse, Faculty of Mathematics and Computer Science, Brig, Switzerland*
- since 02/2026 **Associate Professor in Mathematics**, *UniDistance Suisse, Faculty of Mathematics and Computer Science, Brig, Switzerland*
- 07/2021–01/2026 **Assistant Professor with Tenure Track in Mathematics**, *UniDistance Suisse, Faculty of Mathematics and Computer Science, Brig, Switzerland*
- 10/2020–09/2021, 04/2022–03/2023 **Visiting fellow**, *Shanghai University, School of Mechatronic Engineering and Automation, Shanghai, China*
- 10/2014–06/2021 **(Postdoctoral) research associate**, *Technische Universität Berlin, Institute of Mathematics, Berlin, Germany*
- 04/2019–03/2021 **Substitute W3 (Full) Professor in Optimization of Complex Systems**, *Universität Hamburg, Department of Mathematics, Hamburg, Germany*
- 08/2010–08/2014 **Research associate**, *Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany*
- 02/2011–12/2012 **Freelance software engineer**, *SynOptio GmbH, Berlin, Germany*
- 10/2010–01/2011 **Graduate teaching assistant**, *Otto-von-Guericke-Universität Magdeburg, Faculty of Mathematics, Magdeburg, Germany*
- 04/2007–07/2010 **Student research assistant**, *Technische Universität Chemnitz, Faculty of Mathematics, Chemnitz, Germany*
- 08/2008–10/2008 **Guest student**, *Forschungszentrum Jülich GmbH, Institute of Advanced Simulation, Jülich, Germany*
- 11/2007–12/2007 **Intern**, *Moscow Aviation Institute, Moscow, Russia*
- 10/2005–03/2007 **Student teaching assistant**, *Technische Universität Chemnitz, Faculty of Mathematics, Chemnitz, Germany*

Awards and Scholarships

- 06/2017 **Otto Hahn Medal of the Max Planck Society** (awarded with EUR 7.500)
- 11/2015 **Award for the best doctoral dissertation in mathematics** at the Otto-von-Guericke-Universität Magdeburg (awarded with EUR 1.000)
- 02/2013–05/2013 **DAAD short term scholarship** (EUR 2.631) for a research stay with Michael Overton at New York University

Publications

Submitted Articles

- [1] A. Angino, T. Dózsa, and M. Voigt. H_2 -optimal model order reduction using hyperbolic geometry, March 2026. Submitted for publication.
- [2] N. Tsipinakis, P. Parpas, and M. Voigt. Adaptive Multilevel Newton: A quadratically convergent optimization method, March 2026. Submitted for publication, also available as arXiv preprint arXiv:2510.24967v2.
- [3] T. Dózsa, A. Angino, Z. Szabó, J. Bokor, and M. Voigt. Adaptive kernel methods, March 2026. Submitted for publication, also available as arXiv preprint arXiv:2601.21707.

Refereed Journal Articles

- [4] J. Nicodemus, M. Voigt, S. Gugercin, and B. Unger. KLAP: KYP lemma based low-rank approximation for $\mathcal{H}_2$ -optimal passivation. *SIAM J. Matrix Anal. Appl.*, 47(1):1–24, 2026.
- [5] J. Przybilla and M. Voigt. Model reduction of parametric differential-algebraic systems by balanced truncation. *Math. Comput. Model. Dyn. Syst.*, 30(1):303–341, 2024.
- [6] P. Schwerdtner, T. Moser, V. Mehrmann, and M. Voigt. Optimization-based model order reduction of port-Hamiltonian descriptor systems. *Systems Control Lett.*, 182:105655, 2023.
- [7] P. Schwerdtner and M. Voigt. Fixed-order H-infinity controller design for port-Hamiltonian systems. *Automatica J. IFAC*, 152:110918, 2023.
- [8] P. Schwerdtner and M. Voigt. SOBMOR: Structured optimization-based model order reduction. *SIAM J. Sci. Comput.*, 45(2):A502–A529, 2023.
- [9] C. Schröder and M. Voigt. Balanced truncation model reduction with a priori error bounds for LTI systems with nonzero initial value. *J. Comput. Appl. Math.*, 420:114708, 2023.
- [10] R. Aziz, E. Mengi, and M. Voigt. Derivative interpolating subspace frameworks for nonlinear eigenvalue problems. *SIAM J. Sci. Comput.*, 44(4):A1833–A1858, 2022.
- [11] H. Mena, L.-M. Pfurtscheller, and M. Voigt. Discounted cost linear quadratic Gaussian control for descriptor systems. *Internat. J. Control*, 95(5):1349–1362, 2022.
- [12] I. Dorschky, T. Reis, and M. Voigt. Balanced truncation model reduction for symmetric second order systems – a passivity-based approach. *SIAM J. Matrix Anal. Appl.*, 42(4):1602–1635, 2021.
- [13] C. Jelich, S. K. Baydoun, M. Voigt, and M. Marburg. A greedy reduced basis algorithm for structural acoustic systems with parameter and implicit frequency dependence. *Internat. J. Numer. Methods Engrg.*, 122(24):7409–7430, 2021.
- [14] S. K. Baydoun, M. Voigt, B. Goderbauer, C. Jelich, and S. Marburg. A subspace iteration eigensolver based on Cauchy integrals for vibroacoustic problems in unbounded domains. *Internat. J. Numer. Methods Engrg.*, 122(16):4250–4269, 2021.
- [15] S. K. Baydoun, M. Voigt, and S. Marburg. Low-rank iteration schemes for the multi-frequency solution of acoustic boundary element equations. *J. Theor. Comput. Acoust.*, 29(3):2150004–1–2150004–22, 2021.
- [16] Z. Tomljanović and M. Voigt. Semi-active $\mathcal{H}_\infty$ damping optimization by adaptive interpolation. *Numer. Linear Algebra Appl.*, 27(4):e2300, 2020.
- [17] N. Aliyev, P. Benner, E. Mengi, and M. Voigt. A subspace framework for $\mathcal{H}_\infty$ -norm minimization. *SIAM J. Matrix Anal. Appl.*, 41(2):928–956, 2020.

- [18] S. K. Baydoun, M. Voigt, C. Jelić, and S. Marburg. A greedy reduced basis scheme for multi-frequency solution of structural acoustic systems. *Internat. J. Numer. Methods Engrg.*, 121(2):187–200, 2020.
 - [19] D. Bankmann and M. Voigt. On linear-quadratic optimal control of implicit difference equations. *IMA J. Math. Control Inform.*, 36(3):779–833, 2019.
 - [20] T. Reis and M. Voigt. Linear-quadratic optimal control of differential-algebraic systems: The infinite time horizon problem with zero terminal state. *SIAM J. Control Optim.*, 57(3):1567–1596, 2019.
 - [21] T. Reis and M. Voigt. Inner-outer factorization for differential-algebraic systems. *Math. Control Signals Systems*, 30(3):15:1–15:19, 2018.
 - [22] P. Benner, R. Lowe, and M. Voigt. $\mathcal{L}_\infty$ -norm computation for large-scale descriptor systems using structured iterative eigensolvers. *Numer. Algebra Control Optim.*, 8(1):119–133, 2018.
 - [23] N. Aliyev, P. Benner, E. Mengi, P. Schwerdtner, and M. Voigt. Large-scale computation of $\mathcal{L}_\infty$ -norms by a greedy subspace method. *SIAM J. Matrix Anal. Appl.*, 38(4):1496–1516, 2017.
 - [24] T. Reis and M. Voigt. Reprint of “The Kalman-Yakubovich-Popov inequality for differential-algebraic systems: Existence of nonpositive solutions”. *Systems Control Lett.*, 95:3–10, 2016.
 - [25] P. Benner, V. Sima, and M. Voigt. Algorithm 961: Fortran 77 subroutines for the solution of skew-Hamiltonian/Hamiltonian eigenproblems. *ACM Trans. Math. Software*, 42(3):24:1–24:26, 2016.
 - [26] T. Reis and M. Voigt. The Kalman-Yakubovich-Popov inequality for differential-algebraic systems: Existence of nonpositive solutions. *Systems Control Lett.*, 86:1–8, 2015.
 - [27] T. Reis, O. Rendel, and M. Voigt. The Kalman-Yakubovich-Popov inequality for differential-algebraic systems. *Linear Algebra Appl.*, 485:153–193, 2015.
 - [28] P. Benner and M. Voigt. A structured pseudospectral method for $\mathcal{H}_\infty$ -norm computation of large-scale descriptor systems. *Math. Control Signals Systems*, 26(2):303–338, 2014.
 - [29] P. Benner and M. Voigt. Spectral characterization and enforcement of negative imaginarity for descriptor systems. *Linear Algebra Appl.*, 439(4):1104–1129, 2013.
 - [30] P. Benner, V. Sima, and M. Voigt. $\mathcal{L}_\infty$ -norm computation for continuous-time descriptor systems using structured matrix pencils. *IEEE Trans. Automat. Control*, 57(1):233–238, 2012.
- Refereed Book Chapters
- [31] A. Angino, M. Aurina, A. Kopaničáková, M. Voigt, M. Donatelli, and R. Krause. Trust-region methods with low-fidelity objective models. In *Domain Decomposition Methods in Science and Engineering XXIX*. Springer, December 2025. Accepted for publication, preliminary version also available as arXiv preprint arXiv:2511.00434.
 - [32] D. Kressner and M. Voigt. Distance problems for linear dynamical systems. In P. Benner, M. Bollhöfer, D. Kressner, C. Mehl, and T. Stykel, editors, *Numerical Algebra, Matrix Theory, Differential-Algebraic Equations and Control Theory – Festschrift in Honor of Volker Mehrmann*, chapter 20, pages 559–583. Springer, Cham, Switzerland, 2015.
 - [33] P. Benner, P. Losse, V. Mehrmann, and M. Voigt. Numerical linear algebra methods for linear differential-algebraic equations. In A. Ilchmann and T. Reis, editors, *Surveys in Differential-Algebraic Equations III*, Differ.-Algebr. Equ. Forum, chapter 3, pages 117–175. Springer, Cham, Switzerland, 2015.

Unrefereed Book Chapters

- [34] R. S. Beddig, P. Benner, I. Dorschky, T. Reis, P. Schwerdtner, M. Voigt, and S. W. R. Werner. Structure-preserving model reduction for dissipative mechanical systems. In P. Eberhard, editor, *Calm, Smooth and Smart: Novel Approaches for Influencing Vibrations by Means of Deliberately Introduced Dissipation*, volume 102 of *Lect. Notes Appl. Comput. Mech.*, pages 209–230. Springer, Cham, Switzerland, 2024.

Refereed Conference Proceedings

- [35] A. Angino, M. Voigt, R. Krause, and T. Dózsa. Second-order optimization of variable projection SVM models and road abnormality detection. In *ICASSP 2026 – 2026 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 1641–1645, Barcelona, Spain, 2026.
- [36] P. Schmitz, M. Schaller, M. Voigt, and K. Worthmann. Fast and memory-efficient optimization for large-scale data-driven predictive control. *IFAC-PapersOnLine*, 58(21):220–225, 2024. IFAC Conference of Modelling, Identification and Control of Nonlinear Systems, Lyon, France, 2024.
- [37] P. Schwerdtner and M. Voigt. Structure-preserving model reduction of port-Hamiltonian systems by optimization. In *26th International Symposium on Mathematical Theory of Networks and Systems*, pages 444–447, Cambridge, United Kingdom, 2024.
- [38] P. Schwerdtner and M. Voigt. Optimization-based structured reduced order modeling from frequency samples. In F. Breiteneker, W. Kemmetmüller, A. Körner, A. Kugi, and I. Troch, editors, *MATHMOD 2022 Discussion Contribution Volume*, volume 17 of *ARGESIM Reports*, pages 79–80. ARGESIM Publisher, Vienna, Austria, 2022.
- [39] P. Schwerdtner and M. Voigt. Adaptive sampling for structure-preserving model order reduction of port-Hamiltonian systems. *IFAC-PapersOnLine*, 54(19):143–148, 2021. 7th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control, Berlin, Germany, 2021.
- [40] P. Schwerdtner, E. Mengi, and M. Voigt. Certifying global optimality for the $\mathcal{L}_\infty$ -norm computation of large-scale descriptor systems. *IFAC-PapersOnLine*, 53(2):4279–4284, 2020. 21st IFAC World Congress, Berlin, Germany, 2020.
- [41] P. Schwerdtner and M. Voigt. Computation of the $\mathcal{L}_\infty$ -norm using rational interpolation. *IFAC-PapersOnLine*, 51(25):84–89, 2018. Joint 9th IFAC Symposium on Robust Control Design and 2nd IFAC Workshop on Linear Parameter Varying Systems, Florianópolis, Brazil, 2018.
- [42] J. Saak and M. Voigt. Model reduction of constrained mechanical systems in M-M.E.S.S. *IFAC-PapersOnLine*, 51(2):661–666, 2018. 9th Vienna International Conference on Mathematical Modelling, Vienna, Austria, 2018.
- [43] N. Bajcinca and M. Voigt. Spectral conditions for symmetric positive real and negative imaginary systems. In *2013 European Control Conference (ECC)*, pages 809–814, Zurich, Switzerland, 2013.
- [44] P. Benner and M. Voigt. Numerical computation of structured complex stability radii of large-scale matrices and pencils. In *51st IEEE Conference on Decision and Control*, pages 6560–6565, Maui, Hawaii, USA, 2012.
- [45] T. Reis and M. Voigt. Linear-quadratic infinite time horizon optimal control for differential-algebraic equations - a new algebraic criterion. In *20th International Symposium on Mathematical Theory of Networks and Systems*, Melbourne, Australia, 2012.
- [46] P. Benner, V. Sima, and M. Voigt. Robust and efficient algorithms for $\mathcal{L}_\infty$ -norm computation for descriptor systems. *IFAC Proc. Vol.*, 45(13):195–200, 2012. 7th IFAC Symposium on Robust Control Design, Aalborg, Denmark, 2012.

Miscellaneous Conference Proceedings

- [47] R. S. Beddig, P. Benner, I. Dorschky, T. Reis, P. Schwerdtner, M. Voigt, and S. W. R. Werner. Model reduction of second-order dynamical systems revisited. *PAMM Proc. Appl. Math. Mech.*, 19(1):e201900224, 2019.
- [48] S. K. Baydoun, L. Li, M. Voigt, and S. Marburg. A low-rank iteration scheme for multi-frequency acoustic problems. *INTER-NOISE and NOISE-CON Congress and Conference Proceedings*, 258(6):1387–1396, 2018.
- [49] N. Aliyev, P. Benner, E. Mengi, P. Schwerdtner, and M. Voigt. A greedy subspace method for computing the $\mathcal{L}_\infty$ -norm. *PAMM. Proc. Appl. Math. Mech.*, 17(1):751–752, 2017.
- [50] T. Reis and M. Voigt. Inner-outer factorization via Lur’e equations. *PAMM. Proc. Appl. Math. Mech.*, 16(1):829–830, 2016.
- [51] T. Reis and M. Voigt. The Kalman-Yakubovich-Popov inequality for descriptor systems. *PAMM. Proc. Appl. Math. Mech.*, 15(1):645–646, 2015.
- [52] T. Reis and M. Voigt. Solution of descriptor Lur’e equations via even matrix pencils. *PAMM. Proc. Appl. Math. Mech.*, 14(1):925–926, 2014.
- [53] T. Reis and M. Voigt. The dissipation inequality for differential-algebraic systems. *PAMM. Proc. Appl. Math. Mech.*, 14(1):11–14, 2014.
- [54] P. Benner, R. Lowe, and M. Voigt. Computation of the $\mathcal{H}_\infty$ -norm for large-scale systems. *Oberwolfach Rep.*, 10(4):3289–3291, 2013.
- [55] M. Voigt. Computation of the complex dissipativity radius. In O. Sawodny and J. Adamy, editors, *Tagungsband des GMA-Fachausschusses 1.30 „Modellbildung, Identifikation und Simulation in der Automatisierungstechnik“*, pages 10–19. Technische Universität Darmstadt, Institut für Automatisierungstechnik und Mechatronik, 2013.
- [56] J. Saak, M. M. Uddin, and M. Voigt. Modellreduktion für strukturierte Index-3-Systeme. In O. Sawodny and J. Adamy, editors, *Tagungsband des GMA-Fachausschusses 1.30 „Modellbildung, Identifikation und Simulation in der Automatisierungstechnik“*, pages 180–190. Technische Universität Darmstadt, Institut für Automatisierungstechnik und Mechatronik, 2013.
- [57] P. Benner and M. Voigt. $\mathcal{H}_\infty$ -norm computation for large and sparse descriptor systems. *PAMM. Proc. Appl. Math. Mech.*, 12(1):797–800, 2012.
- [58] P. Benner and M. Voigt. $\mathcal{L}_\infty$ -norm computation for discrete-time descriptor systems. In O. Sawodny and J. Adamy, editors, *Tagungsband des GMA-Fachausschusses 1.30 „Modellbildung, Identifikation und Simulation in der Automatisierungstechnik“*, pages 228–240. Technische Universität Darmstadt, Institut für Automatisierungstechnik und Mechatronik, 2011.
- [59] P. Benner and M. Voigt. On the computation of particular eigenvectors of Hamiltonian matrix pencils. *PAMM. Proc. Appl. Math. Mech.*, 11(1):753–754, 2011.

Manuals

- [60] P. Benner, V. Sima, and M. Voigt. *SHHEIG Users’ Guide*. ACM, 2016.

Technical Reports

- [61] T. Dózsa, M. Voigt, Z. Szabó, J. Bokor, and P. Kovács. Generalized rational Prony and Bernoulli methods. arXiv preprint arXiv:2510.03510, October 2025.
- [62] P. Jiang and M. Voigt. MB04BV – A FORTRAN 77 subroutine to compute the eigenvectors associated to the purely imaginary eigenvalues of skew-Hamiltonian/Hamiltonian matrix pencils. SLICOT Working Note 2013-3, NICONET e.V., September 2013. Available from http://slicot.org/objects/software/reports/SLWN2013_3.pdf.

Theses

- [63] M. Voigt. *On Linear-Quadratic Optimal Control and Robustness of Differential-Algebraic Systems*. Logos-Verlag, Berlin, 2015. Also as Dissertation, Otto-von-Guericke-Universität Magdeburg, Fakultät für Mathematik, 2015.
- [64] M. Voigt. *$\mathcal{L}_\infty$ -Norm Computation for Descriptor Systems*. Diplomarbeit, Technische Universität Chemnitz, Fakultät für Mathematik, July 2010. Available from <http://nbn-resolving.de/urn:nbn:de:bsz:ch1-201001050>.

Other Publications

- [65] T. Willems, T. Kühlwein, M. Voigt, M. Kurschilgen, and D. J. Stekhoven. Insights from the SwissRN Computational Reproducibility Hackathon 2025. *F1000Res.*, 15:692, 2026.

Software

FORTRAN

- SHHEIG – Subroutines for the solution of skew-Hamiltonian/Hamiltonian eigenvalue problems, published as Algorithm 961 within the Collected Algorithms of the ACM (CALGO)¹, jointly developed with V. Sima, available from <https://calgo.acm.org/>, see also [25, 60].
- MB04BV – Computation of the eigenvectors associated with the imaginary eigenvalues of skew-Hamiltonian/Hamiltonian matrix pencils, jointly developed with P. Jiang, available from <https://zenodo.org/records/11505010>, see also [62].
- AB13HD – Computation of the $\mathcal{L}_\infty$ -norm for descriptor systems, jointly developed with V. Sima, available from <https://github.com/SLICOT/SLICOT-Reference/blob/main/src/AB13HD.f>, see also [30, 46].

MATLAB

- BT_INHOM v1.1 – Balanced truncation for systems with inhomogeneous initial conditions, available from <https://zenodo.org/record/6355512#.YjZ0TTwxmqJ>, see also [9].
- SOPRBT v1.2 – Passivity-preserving balanced truncation for second-order systems, jointly developed with I. Dorschky, available from <https://zenodo.org/record/4519721#.YClEn eoXmTt>, see also [12].
- HINFDMPOPT v1.1 – Semi-active $\mathcal{H}_\infty$ damping optimization of mechanical systems, jointly developed with Z. Tomljanović, available from <https://zenodo.org/record/3634361#.YCFvB0oxmTs>, see also [16].
- HINFOPT v1.0 – $\mathcal{H}_\infty$ -norm optimization of parameter-dependent systems, jointly developed with N. Aliyev and E. Mengi, available from <https://zenodo.org/record/3533086#.YCFve-oxmTs>, see also [17].
- LINORM.SUBSP v1.3 – $\mathcal{L}_\infty$ -norm computation for high-dimensional problems via rational approximation, jointly developed with N. Aliyev, E. Mengi, and P. Schwerdtner, available from <https://zenodo.org/records/11506531>, see also [23, 41].
- LINORM v1.1 – $\mathcal{L}_\infty$ -norm computation for high-dimensional problems via optimization over level sets, jointly developed with R. Lowe, available from <https://zenodo.org/records/11506187>, see also [22].
- HINORM v1.0 – $\mathcal{H}_\infty$ -norm computation for high-dimensional problems via optimization over structured pseudospectra, available from <https://zenodo.org/records/11505316>, see also [29].

Talks Given at Conferences and Workshops and in Seminars

Invited Keynote Talks

- 03/17/2021 **Numerical Methods for $\mathcal{H}_\infty$ -Control of Large-Scale Systems**, 91st GAMM Annual Meeting, Section “Dynamics and Control”, Kassel, Germany (online section keynote talk)

¹A more recent version is contained in the software library SLICOT (<http://slicot.org/>).

- 03/26/2019 **Numerical Methods for $\mathcal{H}_\infty$ -Control**, 13th Elgersburg Workshop, Elgersburg, Germany
Further Invited Conference and Workshop Talks (Incl. Minisymposia)
- 05/21/2026 **Adaptive Kernel Methods**, 27th Conference of the International Linear Algebra Society, Minisymposium "Linear Algebra Foundations for Data-driven Modeling and Model Order Reduction", Blacksburg, Virginia, USA
- 02/26/2025 **Fast and Memory-Efficient Optimization for Large-Scale Data-Driven Predictive Control**, 4th Workshop on Optimal Control of Dynamical Systems and Applications, Villány, Hungary
- 08/20/2024 **Structure-Preserving Model Reduction of Port-Hamiltonian Systems by Optimization**, 26th International Symposium on Mathematical Theory of Networks and Systems, Invited Session: "Learning and Surrogate Modeling of Port-Hamiltonian Systems", Cambridge, United Kingdom
- 07/23/2024 **Positive Real Balanced Truncation Model Reduction of Mechanical Systems**, 16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics, Minisymposium "Modeling and Learning of Structured Dynamical Systems", Vancouver, British Columbia, Canada
- 08/21/2023 **Subspace Methods for Nonlinear Eigenvalue Problems**, 10th International Congress on Industrial and Applied Mathematics, Minisymposium: "Large-Scale Eigenvalue Computations and Optimization", Tokyo, Japan
- 06/12/2023 **Balanced Truncation Model Reduction of Parametric Differential-Algebraic Systems**, 25th Conference of the International Linear Algebra Society, Invited Minisymposium "Matrix Equations", Madrid, Spain
- 03/02/2023 **Model Reduction and Control of Dynamical Systems Based on Frequency Data**, SIAM Conference on Computational Science and Engineering, Minisymposium "System-Theoretic Learning Methods and Model Reduction", Amsterdam, The Netherlands
- 07/14/2022 **$\mathcal{H}_\infty$ Controller Design for Port-Hamiltonian Systems**, 15th Viennese Conference on Optimal Control and Dynamic Games, Minisymposium "Data-Driven and Learning-Based Control", Vienna, Austria
- 03/28/2022 **Structure-Preserving Balanced Truncation Model Reduction for Symmetric Second-Order Systems**, 3rd Workshop on Optimal Control of Dynamical Systems and Applications, Osijek, Croatia
- 06/21/2021 **Interpolatory Model Reduction in $\mathcal{H}_\infty$ -Controller Design**, 8th European Congress of Mathematics, Minisymposium "Rational Approximation for Data-Driven Modeling and Complexity Reduction of Linear and Nonlinear Dynamical Systems", Portorož, Slovenia (online talk)
- 09/30/2019 **Interpolatory Methods for $\mathcal{H}_\infty$ -Norm Computation and $\mathcal{H}_\infty$ -Control**, European Numerical Mathematics and Advanced Applications Conference 2019, Minisymposium "Numerical Methods for Identification and Model Reduction of Nonlinear Systems", Egmond aan Zee, The Netherlands
- 09/14/2017 **Linear-Quadratic Optimal Control, Lur'e Equations, and Structured Matrix Pencils**, International Conference on Scientific Computation and Differential Equations, Minisymposium "Matrix Equations: Theory, Numerics and Applications", Bath, United Kingdom
- 09/29/2016 **Linear-Quadratic Control of DAEs with an Application to Flow Control Problems**, Sino-German Symposium "Modeling, Model Order Reduction, and Optimization of Flows", Shanghai, China
- 07/01/2016 **Computation of Robustness Measures for Descriptor Systems**, Symposium of SFB 910 "Computational Methods for Stability and Robust Stability of Dynamical Systems", Berlin, Germany
- 05/03/2016 **Existence of Nonpositive Solutions for the Kalman-Yakubovich-Popov Inequality**, Workshop "Computational Methods for High-Dimensional Problems", Tegernsee, Germany
- 11/21/2013 **Computation of the $\mathcal{H}_\infty$ -Norm for Large-Scale Systems**, Oberwolfach Workshop: Numerical Solution of PDE Eigenvalue Problems, Oberwolfach, Germany

- 10/09/2012 **Computational Methods Based on Structured Pseudospectra**, *CIRM Workshop “Structured Matrix Computations in Non-Euclidean Geometries: Algorithms and Applications”*, Luminy/Marseille, France
- [Invited Seminar and Colloquium Talks](#)
- 06/25/2026 **Introduction to Model Order Reduction: Basic Techniques and Aspects of Structure Preservation**, *University of Insubria*, Como, Italy
- 05/07/2026 **Structure-Preserving Model Order Reduction of Dynamical Systems**, *Oberseminar Analysis*, *University of Bonn*, Bonn, Germany
- 04/08/2025 **Structure-Preserving Model Order Reduction of Port-Hamiltonian Systems**, *CRC 1701 Seminar*, *University of Wuppertal*, Wuppertal, Germany
- 02/13/2025 **Treating Inhomogeneous Initial Conditions in Balancing-Based Model Reduction**, *NOMADS Seminar*, *Gran Sasso Science Institute*, L'Aquila, Italy
- 10/10/2024 **Fixed-Order $\mathcal{H}_\infty$ Control of Port-Hamiltonian Systems**, *University of Science and Technology Beijing*, Beijing, China
- 08/16/2024 **Introduction to Structure-Preserving Model Order Reduction of Dynamical Systems**, *Shanxi University*, Taiyuan, China
- 08/13/2024 **Advances in Passivity-Preserving Model Reduction**, *University of Science and Technology Beijing*, Beijing, China
- 08/05/2024 **Numerical Methods for Large-Scale Nonlinear Eigenvalue Problems**, *Yangtze University*, Jingzhou, China
- 04/26/2024 **Numerical Methods for Large-Scale Nonlinear Eigenvalue Problems**, *Applied Numerical Analysis Seminar*, *Virginia Tech*, Blacksburg, Virginia, USA
- 04/19/2024 **Treating Inhomogeneous Initial Conditions in Balancing-Based Model Reduction**, *Computational Mathematics and Scientific Computing Seminar*, *New York University*, New York City, New York, USA
- 04/15/2024 **Introduction to Structure-Preserving Model Order Reduction of Dynamical Systems**, *Queens College CUNY Computer Science Colloquium*, *City University of New York*, New York City, New York, USA
- 01/23/2024 **Structure-Preserving Model Reduction of Port-Hamiltonian Descriptor Systems by Optimization**, *Università della Svizzera italiana*, Lugano, Switzerland
- 01/17/2024 **Structure-Preserving Model Order Reduction of Dynamical Systems**, *NOMADS Seminar*, *Gran Sasso Science Institute*, L'Aquila, Italy
- 11/27/2023 **Optimization-Based Model Order Reduction of Port-Hamiltonian Descriptor Systems**, *Shanghai University*, Shanghai, China (online talk)
- 11/23/2023 **Optimization-Based Methods in Model Reduction and Control of Port-Hamiltonian Systems**, *Lecture Series “Advanced Topics in Systems and Control”*, *Jiangsu University of Science and Technology*, Zhenjiang, China (online talk)
- 10/16/2023 **Optimization-Based Model Order Reduction of Port-Hamiltonian Descriptor Systems**, *Research Seminar “Nonlinear Control and Learning”*, *Technische Universität Ilmenau*, Ilmenau, Germany
- 05/08/2023 **Structure-Preserving Model Order Reduction of Dynamical Systems**, *Mathematical Colloquium*, *University of Bern*, Bern, Switzerland
- 01/17/2023 **Numerical Methods for Large-Scale Nonlinear Eigenvalue Problems**, *Mathematical Colloquium*, *Technische Universität Ilmenau*, Ilmenau, Germany
- 06/09/2022 **Advances in Structure-Preserving Model Reduction**, *Seminar for Numerical Mathematics and Scientific Computing*, *University of Zagreb*, Zagreb, Croatia
- 05/10/2022 **Structure-Preserving Balanced Truncation Model Reduction for Symmetric Second-Order Systems**, *Senior Seminar Numerical Mathematics/Numerics of Stochastic Differential Equations*, *Martin Luther University of Halle-Wittenberg*, Halle, Germany

- 04/22/2022 **Structure-Preserving Model Reduction for Symmetric Second-Order Systems**, *Seminar in Numerical Analysis, University of Basel*, Basel, Switzerland
- 05/27/2021 **Structure-Preserving Balanced Truncation Model Reduction for Symmetric Second-Order Systems**, *Online Seminar on Linear Algebra and Operator Theory*, (online talk)
- 09/30/2020 **Balanced Truncation Model Reduction with A Priori Error Bounds for LTI Systems with Nonzero Initial Value**, *Shanghai University*, Shanghai, China (online talk)
- 06/03/2020 **Towards $\mathcal{H}_\infty$ -Controller Design for Systems of Large State-Space Dimension**, *Control Engineering Seminar, TU Munich*, Munich, Germany (online talk)
- 12/05/2019 **Numerical Methods for $\mathcal{H}_\infty$ -Control of Large-Scale Systems**, *NUMA Seminar, KU Leuven*, Leuven, Belgium
- 09/21/2018 **Interpolatory Methods for Robust Control of Dynamical Systems**, *Numerical Analysis and Scientific Computing Seminar, New York University, Courant Institute of Mathematical Sciences*, New York City, New York, USA
- 09/17/2018 **Classical Results and Recent Advances in $\mathcal{H}_\infty$ -Control**, *Applied Numerical Analysis Seminar, Virginia Tech*, Blacksburg, Virginia, USA
- 03/15/2018 **$\mathcal{H}_\infty$ -Control: Classical Results and Recent Advances**, *Mathematical Colloquium Osijek, Josip Juraj Strossmayer University of Osijek*, Osijek, Croatia
- 03/15/2017 **A Greedy Subspace Method for Computing the $\mathcal{H}_\infty$ -Norm**, *Seminar on Optimization and Applications, Josip Juraj Strossmayer University of Osijek*, Osijek, Croatia
- 01/13/2016 **Inner-Outer Factorization for Differential-Algebraic Systems**, *Seminar on Optimization and Applications, Josip Juraj Strossmayer University of Osijek*, Osijek, Croatia
- 10/31/2013 **New Approaches to Compute the $\mathcal{H}_\infty$ -Norm of Large-Scale Systems**, *Graduate Seminar "Numerical Mathematics", Technische Universität Berlin*, Berlin, Germany
- 09/12/2012 **$\mathcal{H}_\infty$ -Norm Computation for Large-Scale Descriptor Systems**, *Seminar on Optimization and Applications, Josip Juraj Strossmayer University of Osijek*, Osijek, Croatia
- Contributed and Other Talks**
- 05/28/2026 **$\mathcal{H}_2$ -Optimal Passivation by Low-Rank Approximation**, *3rd Brig Workshop on Dissipativity in Systems and Control*, Brig, Switzerland
- 04/10/2026 **Adaptive Kernel Methods**, *Swiss Numerics Day 2026, Section "Scientific Computing"*, Zürich, Switzerland
- 03/22/2024 **Structure-Preserving Model Reduction of Port-Hamiltonian Descriptor Systems by Optimization**, *94th GAMM Annual Meeting, Section "Dynamics and Control"*, Magdeburg, Germany
- 06/02/2023 **Fixed-Order $\mathcal{H}_\infty$ Control of Port-Hamiltonian Systems**, *93rd GAMM Annual Meeting, Section "Dynamics and Control"*, Dresden, Germany
- 06/16/2022 **$\mathcal{H}_\infty$ -Control of Port-Hamiltonian Systems**, *Householder Symposium XXI on Numerical Linear Algebra, Section "Methods for Hamiltonian Systems"*, Selva di Fasano, Italy
- 11/26/2021 **Structured Optimization-Based Model Order Reduction**, *Workshop of the GAMM Activity Group "Dynamics and Control Theory"*, (online talk)
- 09/16/2021 **SOBMOR: Structured Optimization-Based Model Order Reduction**, *GAMM Workshop Applied and Numerical Linear Algebra*, Potsdam, Germany
- 09/13/2021 **SOBMOR: Structured Optimization-Based Model Order Reduction**, *Swiss Numerics Day 2021*, Lausanne, Switzerland
- 07/19/2019 **A Subspace Framework for $\mathcal{H}_\infty$ -Norm Minimization**, *9th International Congress on Industrial and Applied Mathematics, Minisymposium "Eigenvalue Optimization"*, Valencia, Spain
- 03/22/2019 **A Subspace Framework for $\mathcal{H}_\infty$ -Norm Minimization**, *90th GAMM Annual Meeting, Section "Applied and Numerical Linear Algebra"*, Vienna, Austria

- 09/03/2018 **Computation of the $\mathcal{L}_\infty$ -Norm Using Rational Interpolation**, *Joint 9th IFAC Symposium on Robust Control Design and 2nd IFAC Workshop on Linear Parameter Varying Systems, Section “ $\mathcal{H}_2$ and $\mathcal{H}_\infty$ Control”*, Florianópolis, Brazil
- 06/21/2018 **Balanced Truncation Model Reduction for Systems with Nonzero Initial Condition**, *International Workshop on Optimal Control of Dynamical Systems and Applications*, Osijek, Croatia
- 04/20/2018 **Balanced Truncation Model Reduction for Systems with Nonzero Initial Condition**, *Workshop of the GAMM Activity Group “Dynamics and Control Theory”*, Berlin, Germany
- 06/22/2017 **Linear-Quadratic Optimal Control of Differential-Algebraic Equations**, *Householder Symposium XX on Numerical Linear Algebra, Section “Optimization”*, Blacksburg, Virginia, USA
- 03/09/2017 **A Greedy Subspace Method for Computing the $\mathcal{H}_\infty$ -Norm**, *88th GAMM Annual Meeting, Section “Applied and Numerical Linear Algebra”*, Weimar, Germany
- 07/21/2016 **Inner-Outer Factorization for Differential-Algebraic Equations**, *7th European Congress of Mathematics, Minisymposium “Analysis, Numerics, and Control of Differential-Algebraic Equations”*, Berlin, Germany
- 03/09/2016 **Inner-Outer Factorization for Differential-Algebraic Equations**, *Joint DMV and GAMM Annual Meeting, Section “Dynamics and Control”*, Braunschweig, Germany
- 12/01/2015 **Inner-Outer Factorization for Differential-Algebraic Systems**, *DAE Day Workshop HU/TU*, Berlin, Germany
- 10/01/2015 **Existence of Nonpositive Solutions for the Kalman-Yakubovich-Popov Inequality**, *Workshop of the GAMM Activity Group “Dynamics and Control Theory”*, Duisburg, Germany
- 08/11/2015 **The Kalman-Yakubovich-Popov Lemma for Differential-Algebraic Equations**, *8th International Congress on Industrial and Applied Mathematics, Section “Control and Systems Theory”*, Beijing, China
- 03/26/2015 **The Kalman-Yakubovich-Popov Inequality for Differential-Algebraic Equations**, *86th GAMM Annual Meeting, Section “Dynamics and Control”*, Lecce, Italy
- 10/07/2014 **Linear-Quadratic Optimal Control of Differential-Algebraic Equations**, *Workshop of the DAAD Project “Optimal Damping of Vibrating Systems”*, Osijek, Croatia
- 06/26/2014 **Singular Linear-Quadratic Optimal Control of DAEs and Descriptor Lur’e Equations**, *Tegernsee Workshop*, Tegernsee, Germany
- 03/13/2014 **Singular Linear-Quadratic Optimal Control of Differential-Algebraic Equations**, *85th GAMM Annual Meeting, Section “Dynamics and Control”*, Erlangen, Germany
- 03/03/2014 **Berechnung des komplexen Dissipativitätsradius**, *9th Elgersburg Workshop*, Elgersburg, Germany
- 09/18/2013 **Computation of the Complex Dissipativity Radius**, *Workshop of the GMA Activity Group 1.30 “Modeling, Identification and Simulation in Automation Engineering”*, Anif/Salzburg, Austria
- 09/10/2013 **Computation of the Complex Dissipativity Radius**, *GAMM Workshop Applied and Numerical Linear Algebra*, Wuppertal, Germany
- 08/16/2013 **The Singular Linear-Quadratic Optimal Control Problem for Differential-Algebraic Systems**, *2nd Symposium of the German SIAM Student Chapters*, Heidelberg, Germany
- 02/13/2013 **The Kalman-Yakubovich-Popov Lemma for Differential-Algebraic Equations with Applications**, *8th Elgersburg Workshop*, Elgersburg, Germany
- 12/13/2012 **Numerical Computation of Structured Complex Stability Radii of Large-Scale Matrices and Pencils**, *51st IEEE Conference on Decision and Control, Section “Stability of Linear Systems”*, Maui, Hawaii, USA
- 09/19/2012 **$\mathcal{H}_\infty$ -Norm Computation for Large-Scale Descriptor Systems**, *Workshop of the GAMM Activity Group “Dynamics and Control Theory”*, Anif/Salzburg, Austria

- 08/16/2012 **$\mathcal{H}_\infty$ -Norm Computation for Large-Scale Descriptor Systems via Optimization over Structured Pseudospectra**, Compact Course "Optimization with Differential Equations", Magdeburg, Germany
- 06/20/2012 **Robust and Efficient Algorithms for $\mathcal{L}_\infty$ -Norm Computation for Descriptor Systems**, 7th IFAC Symposium on Robust Control Design, Section "Robustness Analysis", Aalborg, Denmark
- 03/27/2012 **$\mathcal{H}_\infty$ -Norm Computation for Large Sparse Descriptor Systems**, 83rd GAMM Annual Meeting, Young Researchers' Minisymposium "Differential-Algebraic Equations: Theory, Numerics and Applications", Darmstadt, Germany
- 03/09/2012 **Kalman-Yakubovich-Popov Lemma for Differential-Algebraic Equations**, Workshop of the GAMM Activity Group "Dynamics and Control Theory", Stuttgart, Germany
- 10/13/2011 **Solution of Computational Problems for Descriptor Systems**, Summer School "Numerical Linear Algebra for Dynamical and High-Dimensional Problems", Trogir, Croatia
- 09/23/2011 **$\mathcal{L}_\infty$ -Norm Computation for Discrete-Time Descriptor Systems**, Workshop of the GMA Activity Group 1.30 "Modeling, Identification and Simulation in Automation Engineering", Anif/Salzburg, Austria
- 09/16/2011 **SLICOT Software for Structured Matrix Pencils**, General Assembly of NICONET e. V., Berlin, Germany
- 08/23/2011 **On Negative Imaginary Descriptor Systems**, 17th Conference of the International Linear Algebra Society, Section "Control", Braunschweig, Germany
- 04/19/2011 **On the Computation of Particular Eigenvectors of Hamiltonian Matrix Pencils for Passivity Enforcement of Descriptor Systems**, 82nd GAMM Annual Meeting, Section "Applied and Numerical Linear Algebra", Graz, Austria
- 03/18/2011 **Passivity Enforcement of Descriptor Systems via Structured Perturbation of Hamiltonian Matrix Pencils**, Workshop of the GAMM Activity Group "Dynamics and Control Theory", Linz, Austria
- 04/16/2010 **$\mathcal{L}_\infty$ -Norm Computation for Descriptor Systems**, Workshop of the GAMM Activity Group "Dynamics and Control Theory", Berlin, Germany

Posters Presented at Conferences and Workshops

- 08/11/2015 **The Linear-Quadratic Optimal Control Problem for Differential-Algebraic Equations**, 8th International Congress on Industrial and Applied Mathematics, Beijing, China
- 05/07/2015 **The Linear-Quadratic Optimal Control Problem Revisited**, Conference "Numerical Algebra, Matrix Theory, Differential-Algebraic Equations, and Control Theory" in Honor of Volker Mehrmann on the Occasion of his 60th Birthday, Berlin, Germany
- 06/10/2014 **Numerical Methods to Compute the $\mathcal{H}_\infty$ -Norm of Large-Scale Descriptor Systems**, Householder Symposium XIX on Numerical Linear Algebra, Spa, Belgium
- 05/07/2012 **Analysis and Numerical Solution of Structured Descriptor System Problems**, Workshop on Nonlinear Model Order Reduction, Tegernsee, Germany
- 05/07/2012 **Development of the Systems and Control Library SLICOT**, Workshop on Nonlinear Model Order Reduction, Tegernsee, Germany
- 06/27/2010 **Computation of the Eigenvalues of Skew-Hamiltonian/Hamiltonian Pencils in SLICOT**, 8th International Workshop on Accurate Solution of Eigenvalue Problems, Berlin, Germany

Research Visits (from 3 Days)

- 10/2025 **King Abdullah University of Science and Technology**, Thuwal, Saudi Arabia (1 week)
- 04/2025 **King Abdullah University of Science and Technology**, Thuwal, Saudi Arabia (1 week)
- 04/2025 **University of Wuppertal**, Wuppertal, Germany (4 days)
- 02/2025 **Gran Sasso Science Institute**, L'Aquila, Italy (1 week)
- 10/2024 **University of Science and Technology Beijing**, Beijing, China (2 weeks)

- 08/2024 **University of Science and Technology Beijing**, Beijing, China (1 week)
- 08/2024 **Yangtze University**, Jingzhou, China (1 week)
- 04/2024 **Virginia Tech**, Blacksburg, Virginia, USA (1.5 weeks)
- 04/2024 **New York University**, New York City, New York, USA (1 week)
- 01/2024 **Gran Sasso Science Institute**, L'Aquila, Italy (1 week)
- 10/2023 **Technische Universität Ilmenau**, Ilmenau, Germany (1 week)
- 01/2023 **Technische Universität Ilmenau**, Ilmenau, Germany (2 weeks)
- 05/2022 **Martin Luther University of Halle-Wittenberg**, Halle, Germany (4 days)
- 09/2018 **New York University**, New York City, New York, USA (3 days)
- 09/2018 **Virginia Tech**, Blacksburg, Virginia, USA (1 week)
- 03/2018 **Josip Juraj Strossmayer University of Osijek**, Osijek, Croatia (1 week)
- 04/2017 **Max Planck Institute for Dynamics of Complex Technical Systems**, Magdeburg, Germany (3 days)
- 03/2017 **Josip Juraj Strossmayer University of Osijek**, Osijek, Croatia (1 week)
- 04/2016 **Koç University**, Istanbul, Turkey (1 week)
- 01/2016 **Josip Juraj Strossmayer University of Osijek**, Osijek, Croatia (1 week)
- 09/2013–10/2013 **Josip Juraj Strossmayer University of Osijek**, Osijek, Croatia (1 week)
- 02/2013–05/2013 **New York University**, New York City, New York, USA (3.5 months)
- 09/2012 **Josip Juraj Strossmayer University of Osijek**, Osijek, Croatia (1 week)

Third-Party Funding

As Principal Investigator

- since 08/2025 **Open Online Course on Good Research Practices**
 - **supported by:** swissuniversities (program Open Science II for Communication and Awareness Raising Projects)
 - **partners:** Michael Kurschilgen, Nicolas Rothen (UniDistance Suisse), Fabio Molo (University of Zürich), Alexandre Cotting, Paul Calbimonte (HES-SO Valais-Wallis), Maya Dougoud (HES-SO Fribourg)
 - **support:** staff and infrastructure funds, own share CHF 30.000 (shared within the consortium)
- since 08/2025 **Numerical Methods for Efficient Acoustic Metamaterial Design**
 - **supported by:** German Research Foundation and Swiss National Science Foundation within the framework of Weave
 - **partner:** Steffen Marburg (TU Munich)
 - **support:** 1 doctoral student, 1 student research assistant (25%), and direct costs, own share CHF 250.126
- 01/2020–03/2023 **Interpolation-Based Numerical Algorithms in Robust Control**
 - **supported by:** German Research Foundation (research grants – individual proposal)
 - **support:** 1 position E13 TV-L (100%, 36 months), 1 student research assistant (40 hours per month, 36 months), and direct costs, own share EUR 300.966 (incl. overhead)
- 09/2016–08/2019 **Structure-Preserving Model Reduction for Dissipative Mechanical Systems**
 - **supported by:** German Research Foundation within the framework of the Priority Program 1897: "Calm, Smooth and Smart - Novel Approaches for Influencing Vibrations by Means of Deliberately Introduced Dissipation"
 - **partners:** Peter Benner (MPI for Dynamics of Complex Technical Systems) und Timo Reis (Universität Hamburg)
 - **support:** 1 student research assistant (41 hours per month, 36 months) and direct costs, own share EUR 32.751 (incl. overhead)
- 01/2017–12/2018 **Robustness Optimization of Damped Mechanical Systems**
 - **supported by:** German Academic Exchange Service within the framework of a project-related personal exchange (PPP) with Croatia
 - **partner:** Zoran Tomljanović (Josip Juraj Strossmayer University of Osijek)
 - **support:** travel and guest funds, own share EUR 10.974

- 06/2013–08/2013 **Computation of Norms for Large-Scale Dynamical Systems**
- **supported by:** German Academic Exchange Service within the framework of the RISE program
 - **support:** 1 intern (10 weeks), own share EUR 1.625
- 05/2012–08/2012 **Structure-Preserving Computation of Particular Eigenvectors of skew-Hamiltonian/Hamiltonian Pencils**
- **supported by:** German Academic Exchange Service within the framework of the RISE program
 - **support:** 1 intern (12 weeks), own share EUR 1.950
- [As Associated/Co-Principal Investigator](#)
- 01/2019–12/2021 **Energy-Based Modeling, Simulation, and Optimization of Power Systems under Uncertainty**
- **supported by:** German Research Foundation within the framework of the Cluster of Excellence: Berlin Mathematics Research Center MATH+
 - **partners:** Volker Mehrmann (TU Berlin) and Caren Tischendorf (HU Berlin)
 - **support:** 1 shared position E13 TV-L (75%, 36 months, employed with Volker Mehrmann) and direct costs
- 11/2018–10/2021 **Randomized Techniques for Model Reduction**
- **supported by:** German Research Foundation within the framework of the Research and Training Group 2433: “Differential Equation- and Data-driven Models in Life Sciences and Fluid Dynamics (DAEDALUS)”
 - **partners:** Gitta Kutyniok and Volker Mehrmann (TU Berlin)
 - **support:** 1 shared position E13 TV-L (100%, 36 months, employed with Volker Mehrmann) and direct costs
- 06/2017–12/2018 **Data Assimilation for Port-Hamiltonian Power Network Models**
- **supported by:** Einstein Foundation Berlin within the framework of the Einstein Center for Mathematics (ECMath)
 - **partners:** Raphael Kruse and Volker Mehrmann (TU Berlin)
 - **support:** 1 shared position E13 TV-L (100%, 19 months, employed with Volker Mehrmann) and direct costs

Further Third-Party Funding

- 05/2026 **3rd Brig Workshop on Dissipativity in Systems and Control**
- **supported by:** Swiss Academy of Engineering Sciences SATW
 - **partners:** Timm Faulwasser (TU Hamburg), John Lygeros (ETH Zürich), Benjamin Unger (Karlsruhe Institute of Technology)
 - **support:** workshop funds, own share CHF 2.000 (shared within the consortium)
 - **further support:** internal UniDistance Suisse funds for events (CHF 4.000); TU Hamburg (EUR 3.000)
- 05/2024 **2nd Brig Workshop on Dissipativity in Systems and Control**
- **supported by:** Swiss National Science Foundation (Scientific Exchanges)
 - **support:** workshop funds, own share CHF 15.000
 - **further support:** internal UniDistance Suisse funds for events (CHF 2.000)
- 05/2022 **Workshop “Trends on Dissipativity in Systems and Control”**
- **supported by:** Swiss National Science Foundation (Scientific Exchanges)
 - **support:** workshop funds, own share CHF 9.200
 - **further support:** Fonds für Forschung, Entwicklung und Kooperation of UniDistance Suisse (CHF 4.400)

Teaching

Delivered Courses

At UniDistance Suisse

- since FS 2025 **Seminar on Special Topics** (responsibility, with David Belius, Rolf Krause, David Loeffler, and Thomas Mettler)
- HS 2026 **Analysis III** (lectures)
- FS 2026 **Analysis I** (lectures)
Seminar on Mathematical Writing (responsibility)
- HS 2025 **Analysis II** (lectures)
Analysis III (lectures)
- FS 2025 **Analysis I** (lectures)
- HS 2024 **Analysis I** (lectures)
Analysis II (lectures)
Analysis III (lectures)
- FS 2024 **Analysis I** (lectures)
Analysis II (lectures)
- HS 2023 **Calculus I** (lectures)
Calculus II (lectures)
- FS 2023 **Calculus I** (lectures)
Calculus II (lectures)
- HS 2022 **Calculus I** (lectures)
Calculus II (lectures)
- FS 2022 **Calculus I** (lectures)
Undergraduate Seminar I (responsibility)
- HS 2021 **Calculus I** (lectures)
Undergraduate Seminar I (responsibility)

At Universität Hamburg

- WS 2020/21 **Model Reduction** (lectures and exercise classes)
Optimization for Computer Science Students (lectures and exercise classes)
Undergraduate Seminar on Mathematics (responsibility)
Research Seminar on Systems Theory (responsibility, with Timo Reis)
- SS 2020 **Introduction to Mathematical Modeling** (lectures)
Advanced Optimization (lectures)
Robust Control (lectures and exercise classes)
- WS 2019/20 **Optimization of Complex Systems** (lectures and exercise classes)
Mathematical Systems and Control Theory (lectures and exercise classes)
Research Seminar on Systems Theory (responsibility, with Timo Reis)
- SS 2019 **Optimization** (lectures)
Model Reduction (lectures and exercise classes)
Research Seminar on Systems Theory (responsibility, with Timo Reis)

At Technische Universität Berlin

- WS 2018/19 **Numerical Mathematics II for Engineering** (lectures)
Model Reduction (lectures)
Graduate Seminar Numerical Mathematics (coordination)
- SS 2018 **Graduate Seminar Numerical Mathematics** (coordination)

- WS 2017/18 **Model Reduction** (lectures)
Linear Algebra I for Mathematicians (tutorial classes)
Graduate Seminar Numerical Mathematics (coordination)
Early Bird II (Calculus II for Engineering) (assistance)
- SS 2017 **Matrix Equations** (lectures)
Linear Algebra I for Mathematicians (homework supervision)
Graduate Seminar Numerical Mathematics (coordination)
- WS 2016/17 **Linear Algebra II for Mathematicians** (assistance together with exercise and tutorial classes)
- SS 2016 **Linear Algebra I for Mathematicians** (assistance together with exercise and tutorial classes)
- WS 2015/16 **Linear Algebra II for Mathematicians** (assistance together with exercise classes)
[At Otto-von-Guericke-Universität Magdeburg](#)
- WS 2010/11 **Mathematics I – Elementary Course for Engineering Economists** (2 exercise groups)
[Summer Schools, Compact Courses, etc.](#)
- 12/2023 **The ADI Method for Large-Scale Lyapunov Equations**, *Lecture Series “Advanced Topics in Systems and Control”*, Jiangsu University of Science and Technology, Zhenjiang, China (online talk)
- 08/2023 **Summer Course “Introduction to Model Order Reduction”**, Beijing Institute of Technology, Beijing, China
- 08/2019 **SIAM Chapter Compact Course on Robust Control**, Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany
[Lecture Notes](#)
“Analysis III”, partially based on the lecture notes of Christian Mehl, last update: HS 2025
“Analysis II”, partially based on the lecture notes of Christian Mehl, last update: HS 2025
“Analysis I”, translation and revision of the lecture notes of Christian Mehl, last update: FS 2026
“Model Reduction”, last update: FS 2023
“Mathematical Systems and Control Theory”, translation and revision of the lecture notes of Peter Benner, last update: WS 2019/20
“Numerical Mathematics II for Engineering”, revision of the lecture notes of Raphael Kruse and Jörg Liesen, last update: WS 2018/19
“Matrix Equations”, based on a draft of Patrick Kürschner, last update: SS 2017

Supervision of Staff and Students

Postdoctoral Researchers

- since 09/2025 **Tamás Gábor Dózsa (UniDistance Suisse)**, *partially supported by a Swiss Government Excellence Scholarship*
System identification using adaptive rational transformations
- since 02/2022 **Nikolaos Tsipinakis (UniDistance Suisse)**
Second-order multilevel optimization methods in machine learning

Doctoral Students

- in progress **Diletta Bartolini (University of Pavia)**, *within the joint PhD program “Computational Mathematics, Learning, and Data Science” of the University of Pavia, Università della Svizzera italiana and Fondazione Bruno Kessler, primary supervisor, jointly supervised with Thomas Reber*
Working title: “Modeling and Identification of Learning Processes in the Human Brain”
- in progress **Andrea Angino (UniDistance Suisse)**, *supported by an SNF project grant*
Working title: “Numerical Methods for Efficient Acoustic Metamaterial Design”

in progress **Ines Ahrens (TU Berlin)**, supported by the DFG Research Training Group 2433, secondary supervisor, jointly supervised with Volker Mehrmann
Working title: "Randomized Techniques for Model Reduction"

01/2023 **Paul Schwerdtner (Dr. rer. nat., TU Berlin)**, supported by a DFG individual grant and a BIMO S PhD Fellowship, primary supervisor, jointly supervised with Volker Mehrmann
"Structured Optimization-Based Reduction, Identification, and Control"

Diplom and Master Students

06/2022 **Sebastian Wenke (M. Sc. in Business Mathematics, Universität Hamburg)**, primary supervisor, jointly supervised with Christina Brandt
"Modellreduktion dynamischer Systeme mithilfe von Deep Learning"

10/2021 **Simon Michael Bäse (M. Sc. in Mathematics, TU Berlin)**, primary supervisor, jointly supervised with Volker Mehrmann
"Time-Limited Balanced Truncation Model Order Reduction for Descriptor Systems"

08/2021 **Amon Lahr (M. Sc. in Scientific Computing, TU Berlin)**, primary supervisor, jointly supervised with Volker Mehrmann
" $\mathcal{H}_\infty$ -Control for Large-Scale Linear Systems"

12/2020 **Vishnu Sanjay (M. Sc. in Mathematical Modelling in Engineering, Universität Hamburg)**, secondary supervisor, jointly supervised with Tobias Breiten
"Value Function Approximations for Nonlinear Finite-Horizon Optimal Control Problems"

12/2020 **Kamal Kishor Sharma (M. Sc. in Mathematical Modelling in Engineering, Universität Hamburg)**
"Robust Optimization of Elliptic PDEs"

12/2020 **Mona M.k. Ismail (M. Sc. in Mathematical Modelling in Engineering, Universität Hamburg)**
"The ADI Method for Quadratic-Bilinear Lyapunov Equations"

07/2020 **Rebekka Salome Beddig (M. Sc. in Scientific Computing, TU Berlin)**
" $\mathcal{H}_2 \otimes \mathcal{L}_\infty$ -Optimal Model Order Reduction"

12/2019 **Jennifer Przybilla (M. Sc. in Industrial Mathematics, TU Berlin)**
"Model Reduction of Differential-Algebraic Systems by Parametric Balanced Truncation"

06/2019 **Pia Marie Lutum (M. Sc. in Mathematics, TU Berlin)**
"Numerical Computation of the Real Structured Stability Radius"

04/2018 **Paul Schwerdtner (M. Sc. in Engineering Science, TU Berlin)**
"On Fixed Order $\mathcal{H}_\infty$ -Controller Design for Delay Systems"

12/2015 **Daniel Bankmann (M. Sc. in Industrial Mathematics, TU Berlin)**
"On Linear-Quadratic Control Theory of Implicit Difference Equations"

Bachelor Students

02/2021 **Sarah Heinrich (B. Sc. in Mathematics, Universität Hamburg)**
"Mathematische Modellierung der COVID-19 Pandemie"

02/2021 **Benjamin Renz (B. Sc. in Business Mathematics, Universität Hamburg)**
"Konvergenzanalyse der stochastischen Gradienten-Methode"

12/2019 **Aleksandar Svetozarević (B. Sc. in Business Mathematics, Universität Hamburg)**
"Computing Stability Radii with Sparsity Constraints"

12/2018 **Heinrich Walter Ellmann (B. Sc. in Mathematics, TU Berlin)**
"Numerical Solution of the Discrete-Time Linear Quadratic Optimal Control Problem using the Palindromic Laub Trick"

Student Research Assistants

since 08/2025 **Leo Peter Bruno Hilti (University of Cambridge)**, supported by an SNF project grant
Implementation and testing of algorithms for efficient acoustic metamaterial design

04/2020–08/2021 **Amon Lahr (TU Berlin)**, supported by a DFG individual grant
Implementation and testing of novel algorithms for robust control

- 06/2018–08/2019 **Rebekka Salome Beddig (TU Berlin)**, supported by the DFG Priority Program 1897
Implementation and testing of algorithms for structure-preserving model reduction of mechanical systems
- 11/2016–04/2018 **Paul Schwerdtner (TU Berlin)**, supported by the DFG Priority Program 1897
Implementation and testing of algorithms for the efficient computation of the $\mathcal{L}_\infty$ -norm

Visiting Doctoral Students

- 07/2019–11/2019 **Lena-Maria Pfurtscheller (University of Innsbruck)**, supported by a DAAD short term scholarship
LQG control for descriptor systems

Interns

- 05/2022–09/2022 **Nicola Sabbadini (TU Berlin)**, secondary supervisor, jointly supervised with Paul Schwerdtner
Implementation of a benchmark collection for port-Hamiltonian systems
- 06/2017–08/2017 **Tiphaine Bonniot de Ruisselet (ENSEEHT Toulouse)**
Parametric model reduction for damping optimization
- 06/2013–08/2013 **Ryan Lowe (Queen's University)**, supported by the DAAD RISE program
Computation of the $\mathcal{L}_\infty$ -norm for descriptor systems of high dimension
- 05/2012–08/2012 **Peihong Jiang (University of Rochester)**, supported by the DAAD RISE program
Efficient implementation of an algorithm for the structure-exploiting computation of particular eigenvectors of skew-Hamiltonian/Hamiltonian pencils in FORTRAN 77
- 05/2012–07/2012 **Maximilian Bremer (University of Texas at Austin)**
Fast computation and visualization of structured pseudospectra

Refereeing of Theses (without Supervision Responsibilities)

Doctoral Theses

- 12/2023 **Tim Fabian Moser (Dr.-Ing., TU Munich)**
"Structure-Preserving Model Reduction of Port-Hamiltonian Descriptor Systems"
- 11/2022 **Christopher Jelic (Dr.-Ing., TU Munich)**
"Fast Multipole Boundary Element Techniques for Acoustic and Vibroacoustic Problems"
- 02/2020 **Luca Fenzi (Doctor of Engineering Science (PhD): Computer Science, KU Leuven)**
"Looking for Stability: Advances on spectrum-based stability and stabilization of uncertain linear time-delay systems"

Diplom and Master Theses

- 05/2021 **Marie Krause (M. Sc. in Industrial Mathematics, TU Berlin)**
"Numerical methods for computing the distance to singularity, instability and higher index for port-Hamiltonian systems"
- 03/2021 **Thorben Abel (M. Sc. in Industrial Mathematics, Universität Hamburg)**
"Shearlet-based Approach to Dynamic Computed Tomography"
- 12/2020 **Dorothea Hinsin (M. Sc. in Mathematics, TU Berlin)**
"A Port-Hamiltonian Approach for the Modeling of Power Networks including the Telegraph Equations"
- 05/2020 **Linus Johnson (M. Sc. in Computer Simulations for Science and Engineering, TU Berlin)**
"Optimization of Lyapunov Exponents for Large Scale Systems"
- 12/2019 **Yannick Meyer (M. Sc. in Mathematics, Universität Hamburg)**
"PDE-bedingte Optimierung mit Kontroll- und Zustandsbedingungen erster Ordnung"
- 11/2019 **Sofiya Onyshkevych (M. Sc. in Mathematical Modelling in Engineering, Universität Hamburg)**
"Aerodynamic Shape Optimization in Stokes Flows"
- 05/2019 **Felix Black (M. Sc. in Mathematics, TU Berlin)**
"Model Order Reduction for Transport Phenomena"

Bachelor Theses

- 12/2021 **Nikolas Thelenberg (B. Sc. in Mathematics, TU Berlin)**
"Trajectory Tracking by Model Predictive Control with Applications to Robot Manipulators"
- 11/2020 **Yigit Yazici (B. Sc. in Mathematics, Universität Hamburg)**
"Parameterschätzung in Differentialgleichungen"
- 05/2019 **Christian Benjamin Früchtenicht (B. Sc. in Business Mathematics, TU Berlin)**
"Optimalsteuerung linearer port-Hamiltonischer Systeme mit konstanten Koeffizienten"
- 06/2018 **David Noben (B. Sc. in Mathematics, TU Berlin)**
"Ein adaptiver Algorithmus zur Regelung von Modell- und Diskretisierungsfehlern mittels sukzessiver linearer Programmierung"

Service

Editorial Work

Editorial Board Memberships

since 09/2025 **Editor**, *Numerical Functional Analysis and Optimisation* (Taylor & Francis)

since 10/2020 **Community Reviewer**, *Frontiers in Control Engineering – Control Theory* (Frontiers Media S. A.)

since 09/2020 **Community Reviewer**, *Frontiers in Control Engineering – Networked Control* (Frontiers Media S. A.)

03/2021–11/2025 **Associate Editor**, *Journal of Industrial and Management Optimization* (American Institute of Mathematical Sciences)

08/2020–12/2021 **Associate Editor**, *Numerical Algebra, Control and Optimization* (American Institute of Mathematical Sciences)

Special Issues handled as Guest Editor

06/2024–06/2026 **Dissipative Systems – Theory, Numerics, and Applications**, *Mathematics of Control, Signals, and Systems* (Springer), with Timm Faulwasser and Benjamin Unger

09/2022–10/2024 **Recent Advances on Dissipativity in Systems and Control**, *Mathematics of Control, Signals, and Systems* (Springer), with Timm Faulwasser and Benjamin Unger

11/2020–06/2022 **Matrix Equations and Symmetry**, *Symmetry* (MDPI), with Patrick Kürschner

Special Issues proposed as Guest Advisor

02/2025–12/2025 **Advances in Surrogate Modelling**, *Mathematical and Computer Modelling of Dynamical Systems* (Taylor & Francis), with Jens Saak

Refereeing

Reviews of Grant Proposals and Final Reports

Funding Bodies Agence nationale de la recherche
Bayerische Forschungstiftung (3×)
Bergische Universität Wuppertal (FORIS)
KU Leuven Research Council
Luxembourg National Research Fund (2×)
Swiss National Science Foundation

Reviews of Research Manuscripts

Book Series Differential-Algebraic Equations Forum
Journals ACM Transactions on Mathematical Software
Advances and Applications in Mathematical Sciences
Advances in Computational Mathematics (6×)
Advances in Engineering Software
Applied Mathematical Modelling
Applied Mathematics and Computation (4×)
Applied Mathematics and Optimization (2×)
Applied Mathematics Letters
at – Automatisierungstechnik (2×)
Automatica (4×)
Automation (2×)
BIT Numerical Mathematics (7×)
Communications in Nonlinear Science and Numerical Simulation
Communications in Optimization Theory

Computational and Applied Mathematics
 Computer Methods in Applied Mechanics and Engineering (2×)
 Computers and Electrical Engineering
 Computers and Structures (4×)
 Control & Cybernetics
 DAE Panel (2×)
 Electric Power Systems Research (2×)
 European Journal of Control
 Foundations of Data Science (2×)
 Frontiers in Applied Mathematics and Statistics
 Hacettepe Journal of Mathematics and Statistics
 IEEE Control Systems Letters (2×)
 IEEE Transactions on Automatic Control (16×)
 IMA Journal of Mathematical Control and Information (7×)
 IMA Journal of Numerical Analysis (3×)
 International Communications in Heat and Mass Transfer
 International Journal of Control (2×)
 International Journal of Modelling, Identification and Control
 International Journal of Numerical Analysis and Modeling (2×)
 International Journal of Robust and Nonlinear Control
 International Journal of Systems Science
 ISA Transactions
 Journal of Computational and Applied Mathematics (9×)
 Journal of Industrial and Management Optimization (2×)
 Journal of Optimization Theory and Applications
 Journal of Scientific Computing
 Journal of the Franklin Institute (2×)
 Journal of Theoretical and Computational Acoustics (2×)
 Linear Algebra and its Applications (16×)
 Mathematical Communications
 Mathematics and Computers in Simulation
 Mathematics of Control, Signals, and Systems (5×)
 Mechanical Systems and Signal Processing (2×)
 Nonlinear Analysis: Real World Applications
 Nonlinear Dynamics
 Numerical Algorithms (4×)
 Numerical Linear Algebra with Applications (2×)
 Numerische Mathematik
 Optimal Control, Applications and Methods
 Physica D: Nonlinear Phenomena (2×)
 Proceedings in Applied Mathematics and Mechanics (2×)
 SIAM Journal on Control and Optimization (2×)
 SIAM Journal on Matrix Analysis and Applications (15×)
 SIAM Journal on Numerical Analysis (3×)
 SIAM Journal on Scientific Computing (3×)
 Systems & Control Letters (28×, **07/2017: outstanding reviewer**)

The Journal of the Acoustical Society of America
 Zeitschrift für angewandte Mathematik und Mechanik
 Conferences American Control Conference
 Australian Control Conference
 IEEE Conference on Decision and Control (2×)
 IFAC Symposium on Robust Control Design
 International Symposium on Mathematical Theory of Networks and Systems (5×)
 Vienna International Conference on Mathematical Modelling
[Reviews for Search, Tenure, and Promotion Committees](#)
 Universities City University of New York

Administrative and Committee Work

since 03/2026 **Member**, *Search committee for two professorships in Clinical Psychology and Telepsychology, UniDistance Suisse*

since 02/2026 **Study program director**, *Bachelor program in Mathematics and Master program in Artificial Intelligence, UniDistance Suisse*

since 11/2025 **Member**, *Equity, Diversity, Inclusion, and Accessibility Staff Group, UniDistance Suisse*

since 03/2025 **Member**, *Working group on student mobility, UniDistance Suisse*

since 01/2024 **Member**, *Working group for the design of a B. Sc. program in computer science, UniDistance Suisse*

since 12/2023 **Member**, *Working group for the design of an M. Sc. program in mathematics, UniDistance Suisse*

since 05/2022 **Permanent member**, *Faculty college, Faculty of Mathematics and Computer Science, UniDistance Suisse*

since 07/2021 **Local node co-leader**, *Swiss Reproducibility Network (with Michael Kurschilgen)*

12/2025–06/2026 **Stakeholder**, *E-xcellence label project, UniDistance Suisse*

11/2025–03/2026 **Member**, *Search committee for the vice-rector for research, UniDistance Suisse*

08/2023–01/2026 **Professors' representative (German speaking)**, *Academic council, UniDistance Suisse*

05/2025–12/2025 **Member**, *Structure committee for the Faculty of Mathematics and Computer Science, UniDistance Suisse*

02/2025–11/2025 **Member**, *Working group for the integration of external lecturers/assistants, UniDistance Suisse*

04/2024–02/2025 **Member**, *Working group on professors' teaching load, UniDistance Suisse*

05/2024–12/2024 **Deputy member**, *Search committee for the substitute vice-rector for research, UniDistance Suisse*

11/2023–11/2024 **Member**, *Working group on internationalization, UniDistance Suisse*

12/2023–03/2024 **Member**, *Search committee for the vice-rector for teaching, UniDistance Suisse*

10/2022–01/2023 **Member**, *Search committee for the vice-rector for research, UniDistance Suisse*

04/2019–03/2021 **Deputy member**, *Institute council, Institute of Mathematics, TU Berlin*

03/2018–04/2019 **Member**, *Search committee for Mathematics – Mathematical Image Communication, TU Berlin*

05/2006–07/2010 **Member**, *Student Accreditation Pool*
 Reviewer in one accreditation procedure

04/2005–10/2007 **Member**, *Student council, Faculty of Mathematics, TU Chemnitz*
 Involvement in different committees including budget, Bachelor/Master, and study program committee, and one search committee (Numerical Mathematics (Partial Differential Equations))

Outreach Activities

since 10/2022 **Children's University "The World of Secret Messages: Encoding and Decoding Secrets"**
 at UniDistance Suisse

08/2008–07/2010 Coordination of the **Correspondence Circle for Mathematics** at TU Chemnitz

Organization of Lecture Series, Conferences, and Minisymposia

- since 10/2021 **UniDistance Suisse Mathematics Colloquium** (with David Belius, Rolf Krause, David Loeffler, and Thomas Mettler)
- 05/2026 **3rd Brig Workshop on Dissipativity in Systems and Control** in Brig, Switzerland (with Timm Faulwasser, John Lygeros, and Benjamin Unger)
- 09/2025 **Data Reproducibility Hackathon** at the 18th Conference of the Swiss Psychological Society in Crans-Montana, Switzerland (with Michael Kurschilgen)
- 06/2025 **Computational Reproducibility Hackathon of SwissRN** in Brig, Switzerland (with Michael Kurschilgen and Daniel Stekhoven)
- 05/2025 **EMOSC 25: Energy-Based Modeling, Simulation, and Control of Dynamical Systems – Workshop in Honor of Volker Mehrmann’s 70th Birthday** in Berlin, Germany (with Peter Benner, Janine Holzmann, Christian Mehl, Alexandra Schulte, Tatjana Stykel, and Benjamin Unger)
- 05/2024 **2nd Brig Workshop on Dissipativity in Systems and Control** in Brig, Switzerland (with Timm Faulwasser and Benjamin Unger)
- 03/2024 **Minisymposium “Matrix Nearness Problems and Applications”** at the 94th GAMM Annual Meeting in Magdeburg, Germany (with Tim Mitchell)
- 05/2022 **Workshop Trends on Dissipativity in Systems and Control** in Brig, Switzerland (with Timm Faulwasser and Benjamin Unger)
- 07/2019 **Minisymposium “Eigenvalue Optimization”** at the 9th International Congress on Industrial and Applied Mathematics in Valencia, Spain (with Emre Mengi)
- 04/2018 **Workshop of the GAMM Activity Group “Dynamics and Control Theory”** in Berlin, Germany (with Sergio Lucia)
- 07/2016 **Minisymposium “Analysis, Numerics, and Control of Differential-Algebraic Equations”** at the 7th European Congress of Mathematics in Berlin, Germany
- 08/2015 **Minisymposium “Distance Problems for Dynamical Systems”** at the 8th International Congress on Industrial and Applied Mathematics in Beijing, China
- 03/2015 **Section S20: “Dynamics and Control”** at the 86th GAMM Annual Meeting in Lecce, Italy (with Thomas Berger and Fabio Ancona)
- 09/2013 **Workshop of the GAMM Activity Group “Dynamics and Control Theory”** in Magdeburg, Germany
- 03/2012 **Young Researchers’ Minisymposium MA-2: “Differential-Algebraic Equations: Theory, Numerics and Applications”** at the 83rd GAMM Annual Meeting in Darmstadt, Germany (with Stephan Trenn)

Further Professional Commitments

- since 10/2025 **External Examination Expert** for Matura exams in mathematics, Canton of Bern

Memberships in Professional Societies

- since 2026 **ILAS – International Linear Algebra Society**
- since 2024 **EMS Topical Activity Groups** “Applied and Numerical Linear Algebra, Matrix Analysis and Applications” and “Dissipative and Port-Hamiltonian Systems – Modelling, Simulation, Control, and Optimization”
- since 2021 **DHV – Deutscher Hochschulverband (German Association of University Professors and Lecturers)**

- since 2012 **SIAM – Society for Industrial and Applied Mathematics**, member of the activity groups “Control and Systems Theory”, “Dynamical Systems”, and “Linear Algebra”, 2013–2015: member of the SIAM Student Chapter Magdeburg
- since 2011 **GAMM – Gesellschaft für angewandte Mathematik und Mechanik (International Association for Applied Mathematics and Mechanics)**, elected member of the activity group “Dynamics and Control Theory”, member of the activity group “Applied and Numerical Linear Algebra”
- 2012–2023 **NICONET e. V. – The Numerics in Control Network**, association to promote the development and use of numerical methods for systems and control theory in science, engineering, and economics