Simon Hubmer

Dipl.-Ing. Dr.techn.

Professional Experience

Since 6/2024 — **University Assistant**, *Johannes Kepler University*, Linz, Austria.
Affiliated to the "Industrial Mathematics Institute" headed by Prof. Ronny Ramlau

Since 6/2023 — **Mathematics Consultant**, *MathConsult Gmbh, Linz, Austria*, part-time project consulting and student supervision for voestalpine AG, Linz, Austria.

Since 3/2022 — **Regular Guest Visitor**, *Institute of Mathematics, University of Vienna, Austria*.

Since 3/2022 — **Co-Member Speaker**, *SFB Tomography Across the Scales*, funded by the FWF and headed by Prof. Otmar Scherzer and Prof. Ronny Ramlau.

10/2019 – 6/2024 — **Research Scientist**, *Johann Radon Institute for Computational and Applied Mathematics (RICAM)*, Linz, Austria.
Affiliated to the "Transfer Group" headed by Prof. Ronny Ramlau and the "Inverse Problems and Mathematical Imaging Group" headed by Prof. Otmar Scherzer

9/2020 – 3/2022 — **Member Speaker**, *SFB Tomography Across the Scales*, funded by the FWF and headed by Prof. Otmar Scherzer and Prof. Ronny Ramlau.

1/2019 – 9/2019 — **Mandatory civilian service to the Austrian government**, Linz, Austria.

5/2018 – 12/2018 — **Research Scientist**, *Johann Radon Institute for Computational and Applied Mathematics (RICAM)*, Linz, Austria.
Affiliated to the "Transfer Group" headed by Prof. Ronny Ramlau

6/2015 – 3/2018 — **Research Assistant (Advisor: Prof. Ronny Ramlau)**, *Doctoral Program "Computational Mathematics", Johannes Kepler University*, Linz, Austria.

Education

6/2015 – 4/2018 — **Ph.D. in Industrial Mathematics**, *Johannes Kepler University*, Linz, Austria.
Title of dissertation: *Fast Gradient-Based Iterative Regularization Methods for Nonlinear Ill-Posed Problems – Theory and Applications* (Supervisor: Prof. Ronny Ramlau)

10/2013 – 5/2015 — **Master in Industrial Mathematics**, *Johannes Kepler University*, Linz, Austria.
Thesis title: *On Stopping Rules For Landweber Iteration for the Solution of Ill-Posed Problems* (Supervisor: Prof. Andreas Neubauer)

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10/2010 – 9/2013 **Bachelor in Technical Mathematics**, *Johannes Kepler University*, Linz, Austria.
Thesis title: *Theorie von CreditRisk*$^+$ (Supervisor: Prof. Gerhard Larcher)

Journal Publications

[26] **X. Li, S. Hubmer, S. Lu, R. Ramlau**, *Regularization of linear inverse problems with irregular noise using embedding operators*, SIAM Journal on Imaging Sciences, 2024, to appear, available from: http://arxiv.org/abs/2401.15945.

[25] **W. Rannetbauer, S. Hubmer, C. Hambrock, R. Ramlau**, *Predictive modelling of critical variables for improving HVOF coating using gamma regression models*, Journal of Mathematics in Industry, Volume 14, Number 7, 2024, doi: 10.1186/s13362-024-00146-9, Gold OA.

[24] **W. Rannetbauer, C. Hambrock, S. Hubmer, R. Ramlau**, *Enhancing Predictive Quality in HVOF Coating Technology: A Comparative Analysis of Machine Learning Techniques*, Proceedia Computer Science, Volume 232, pp.1377–1387, 2024, doi: 10.1016/j.procs.2024.01.136, Gold OA.

[23] **S. Hubmer, E. Sherina, R. Ramlau, M. Pircher, R. Leitgeb**, *Subaperture-based Digital Aberration Correction for OCT: A Novel Mathematical Approach*, SIAM Journal on Imaging Sciences, Volume 16, Number 4, pp.1857–1885, 2023, doi: 10.1137/22M1543240, Green OA.

[22] **S. Hubmer, E. Sherina, R. Ramlau**, *Characterizations of Adjoint Sobolev Embedding Operators with Applications in Inverse Problems*, Electronic Transactions on Numerical Analysis, Volume 59, pp. 116–144, 2023, doi: 10.1553/etna_vol59s116, Gold OA.

[21] **F. Hinterer, M. C. Schneider, S. Hubmer, M. Lopez-Martinez, R. Ramlau, G. J. Schütz**, *Localization of fixed dipoles at high precision by accounting for sample drift during illumination*, Applied Physics Letters, Volume 123, Number 2, pp. 023703, 2023, doi: 10.1063/5.0137834, Green OA.

[20] **M. Quellmalz, L. Weissinger, S. Hubmer, P. D. Erchinger**, *A Frame Decomposition of the Funk-Radon Transform*, In: Scale Space and Variational Methods in Computer Vision, Springer International Publishing, Cham, pp. 42–54, 2023, doi: 10.1007/978-3-031-31975-4_4, Green OA.

[19] **F. Hinterer, S. Hubmer, P. Jeethwa, K. M. Soodhalter, G. van de Ven, R. Ramlau**, *A Projected Nesterov–Kaczmarz Approach to Stellar Population-Kinematic Distribution Reconstruction in Extragalactic Archaeology*, SIAM Journal on Imaging Sciences, Volume 16, Number 1, pp. 192–222, 2023, doi: 10.1137/22M1503002, Green OA.

[18] **L. Krainz, E. Sherina, S. Hubmer, M. Liu, W. Drexler, O. Scherzer**, *Quantitative Optical Coherence Elastography: A novel Intensity-based Inversion Method versus Strain-based Reconstructions*, IEEE Journal of Selected Topics in Quantum Electronics, Volume 29, Number 4, pp. 1–16, 2022, doi: 10.1109/JSTQE.2022.3225108, Gold OA.

[17] **S. Hubmer, E. Sherina, S. Kindermann, K. Raik**, *A numerical comparison of some heuristic stopping rules for nonlinear Landweber iteration*, Electronic Transactions on Numerical Analysis, Volume 57, pp. 216–241, 2022, doi: 10.1553/etna_vol57s216, Gold OA.

[16] **R. Wagner, D. Saxenhuber, R. Ramlau, S. Hubmer**, *Direction dependent Point Spread Functgion Reconstruction for Multi-Conjugate Adaptive Optics on Giant Segmented Mirror Telescopes*, Astronomy and Computing, Volume 40, pp. 100590, 2022, doi: 10.1016/j.ascom.2022.100590, Green OA.

[15] **S. Hubmer, R. Ramlau, L. Weissinger**, *On Regularization via Frame Decompositions with Applications in Tomography*, Inverse Problems, Volume 38, Number 5, pp. 055003, 2022, doi: 10.1088/1361-6420/ac5b86, Green OA.

[14] **F. Hinterer, M. C. Schneider, S. Hubmer, M. Lopez-Martinez, P. Zegler, A. Jesacher, R. Ramlau, G. Schütz**, *Robust and bias-free localization of individual fixed dipole emitters achieving the Cramér Rao bound*, PLOS ONE, Volume 17, Number 2, pp. 1–15, 2022, doi: 10.1371/journal.pone.0263500, Green OA.

[13] **S. Hubmer, A. Ploier, R. Ramlau, P. Fosodeder, S. van Frank**, *A mathematical approach towards THz tomography for non-destructive imaging*, Inverse Problems and Imaging, Volume 16, Number 1, pp. 68–88, 2022, doi: 10.3934/ipi.2021041, Green OA.

[12] **E. Sherina, L. Krainz, S. Hubmer, W. Drexler, O. Scherzer**, *Challenges for Optical Flow Estimates in Elastography*, In: Eighth International Conference on Scale Space and Variational Methods in Computer Vision, Springer International Publishing, pp. 128–139, 2021, doi: 10.1007/978-3-030-75549-2_11, Green OA.

[11] **P. Fosodeder, S. Hubmer, A. Ploier, R. Ramlau, S. VanFrank, C. Rankl**, *Phase-contrast THz-CT for non-destructive testing*, Optics Express, Volume X29, Number 10, pp. 15711–15723, 2021, doi: 10.1364/OE.422961, Hybrid OA.

[10] **S. Hubmer, and R. Ramlau**, *Frame Decompositions of Bounded Linear Operators in Hilbert Spaces with Applications in Tomography*, Inverse Problems, Volume 37, Number 5, pp. 055001, 2021, doi: 10.1088/1361-6420/abe5b8, Hybrid OA.

[9] **E. Sherina, L. Krainz, S. Hubmer, W. Drexler, and O. Scherzer**, *Displacement field estimation from OCT images utilizing speckle information with applications in quantitative elastography*, Inverse Problems, Volume 36, Number 12, pp. 124003, 2020, doi: 10.1088/1361-6420/abaf65, Hybrid OA.

[8] **S. Hubmer, and R. Ramlau**, *A Frame Decomposition of the Atmospheric Tomography Operator*, Inverse Problems, Volume 36, Number 9, pp. 094001, 2020, doi 10.1088/1361-6420/aba4fe, Hybrid OA.

[7] **F. Hinterer, S. Hubmer, and R. Ramlau**, *A note on the minimization of a Tikhonov functional with ℓ^1-penalty*, Inverse Problems, Volume 36, Number 7, pp. 074001, 2020, doi: 10.1088/1361-6420/ab89c2, Hybrid OA.

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[6] **S. Hubmer, A. Neubauer, R. Ramlau, and H. U. Voss**, *A conjugate-gradient approach to the parameter estimation problem of magnetic resonance advection imaging*, Inverse Problems in Science & Engineering, Volume 28, Number 8, pp. 1154–1165, 2020, doi: 10.1080/17415977.2019.1708911, Green OA.

[5] **S. Hubmer, K. Knudsen, C. Li, and E. Sherina**, *Limited-angle acousto-electrical tomography*, Inverse Problems in Science & Engineering, Volume 27, Number 9, pp. 1298–1317, 2019, doi: 10.1080/17415977.2018.1512983, Hybrid OA.

[4] **S. Hubmer and R. Ramlau**, *Nesterov's accelerated gradient method for nonlinear ill-posed problems with a locally convex residual functional*, Inverse Problems, Volume 34, Number 9, 2018, doi: 10.1088/1361-6420/aacebe, Hybrid OA.

[3] **S. Hubmer, E. Sherina, A. Neubauer, and O. Scherzer**, *Lamé parameter estimation from static displacement field measurements in the framework of nonlinear inverse problems*, SIAM Journal on Imaging Sciences, Volume 11, Number 2, pp. 1268–1293, 2018, doi: 10.1137/17M1154461, Green OA.

[2] **S. Hubmer, A. Neubauer, R. Ramlau, and H. U. Voss**, *On the parameter estimation problem of magnetic resonance advection imaging*, Inverse Problems and Imaging, Volume 12, Number 1, pp. 175–204, 2018, doi: 10.3934/ipi.2018007, Green OA.

[1] **S. Hubmer and R. Ramlau**, *Convergence analysis of a two-point gradient method for nonlinear ill-posed problems*, Inverse Problems, Volume 33, Number 9, 2017, doi: 10.1088/1361-6420/aa7ac7, Green OA.
Named as one of the highlights of 2017 of the journal.

Preprints/Technical Reports

[31] **L. Weissinger, S. Hubmer, B. Stadler, R. Ramlau**, *Singular Value and Frame Decomposition-based Reconstruction for Atmospheric Tomography*, submitted, 2024, available from: https://arxiv.org/abs/2405.01079.

[30] **S. Kindermann, S. Hubmer**, *Norms in sinogram space and stability estimates for the Radon transform*, submitted, 2024, available from: http://arxiv.org/abs/2403.07466.

[29] **L. Weissinger, S. Hubmer, R. Ramlau, H. U. Voss**, *An Inverse Problems Approach to Pulse Wave Analysis in the Human Brain*, submitted, 2024, available from: http://arxiv.org/abs/2402.09803.

[28] **W. Rannetbauer, C. Hambrock, S. Hubmer, R. Ramlau**, *Databased Optimization of Coating Characteristics – Challenges and Possible Solution*, submitted, 2024.

[27] **W. Rannetbauer, C. Hambrock, S. Hubmer, R. Ramlau**, *Predicting interaction phenomena in HVOF thermal spraying of WC-CoCr: a hybrid experimental-statistical approach*, submitted, 2024.

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[22½] **E. Sherina, L. Krainz, S. Hubmer, O. Scherzer, W. Drexler**, *Inversion Methods For Strain And Stiffness Reconstruction In Quantitative Optical Coherence Elastography*, In: Tomographic Inverse Problems: Mathematical Challenges and Novel Applications, 2023, Eds.: S. Arridge, M. Burger, B. Hahn, E. T. Quinto, 2023, Mathematisches Forschungsinstitut Oberwolfach, doi: 10.4171/OWR/2023/21.

[14½] **F. Kagerer, M. Beinhofer, S. Hubmer, R. Ramlau**, *Myopic Approaches for a Real World Palletizing Problem*, In: Proceedings of the Austrian Robotics Workshop 2021, Eds.: W. Kubinger, M. Brandstötter, C. Schöffmann, M. Vincze, June 2021, Vienna, ISBN 978-3-200-07799-7.

Manuscripts in Preparation

[33] **S. Hackl, S. Hubmer, R. Ramlau**, *An Adapted Ultrasound Focusing Algorithm and Parameter Reconstruction for Layered Media*, in preparation, 2024.

[32] **S. Hubmer, V. Hutterer, R. Ramlau, E. Sherina, B. Stadler**, *On Phase Unwrapping via Digital Wavefront Sensors*, in preparation, 2023.

Research Projects/Funding

3/2022 – 2/2026 **SFB Tomography Across the Scales**, *(Phase II), Subproject: Tomography in Astronomy*, funded by the FWF and headed by Prof. Otmar Scherzer and Prof. Ronny Ramlau, Project work and support of proposal writing.

2022/1 – 2028/12 **CD laboratory for mathematical modelling and simulation of next-generation medical ultrasound devices**, *External Module "Aberration Corrections"*, funded by the Christian Doppler Forschungsgesellschaft in cooperation with GE Healthcare Austria GmbH & Co OG, and headed by Prof. Otmar Scherzer and Prof. Ronny Ramlau, Project work and support of proposal/report writing.

2019 – 2020 **Terahertz computer tomography for plastics extrusion (TACTICS)**, *Mathematical project partner in cooperation with RECENDT GmbH*, funded by ATTRACT (Horizon 2020) and headed by Prof. Ronny Ramlau, Project work.

3/2018 – 2/2022 **SFB Tomography Across the Scales**, *(Phase I), Subproject: Tomography in Astronomy*, funded by the FWF and headed by Prof. Otmar Scherzer and Prof. Ronny Ramlau, Project work and support of report writing.

Presentations

Workshop, conference, and minisymposium talks

05/2024 **On Phase Unwrapping via Digital Wavefront Sensors**, *11th International Conference "Inverse Problems: Modeling and Simulation"*, Mellieha, Malta.

05/2024 **Digital Wavefront Sensors for Aberration Correction and Phase Unwrapping**, ..., Lyngby, Denmark.

12/2023 **Quasi-Invariant Basis Functions with a Numerical Application**, *Linz Algebra Research Day 2023*, Linz, Austria.

11/2023 **On Phase Unwrapping and Phase Retrieval**, *15th Internal SFB Meeting*, Obergurgl, Austria.

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9/2023 **Retrieving Phase Information From Time-Series Measurements**, *6th SFB Member Meeting*, Wildalpen, Austria.

9/2023 **Frame Decompositions and Inverse Problems**, *11th Applied Inverse Problems Conference (AIP)*, Göttingen, Germany, Talk 2/2.

9/2023 **Phase-contrast THz-CT for non-destructive testing**, *11th Applied Inverse Problems Conference (AIP)*, Göttingen, Germany, Talk 1/2.

7/2023 **Phase Unwrapping with Digital Wavefront Sensors**, *14th Internal SFB Meeting*, Wildalpen, Austria.

5/2023 **Phase-contrast THz-CT for non-destructive testing**, *Isaac Newton Institute, scientific programme "Rich and Nonlinear Tomography - a multidisciplinary approach"*, Cambridge, United Kingdom.

4/2023 **The SFB Tomography Across the Scales**, *RICAM Advisory Board Meeting*, Linz, Austria.

2/2023 **Phase-contrast THz-CT for non-destructive testing**, *13th Internal SFB Meeting*, Windischgarsten, Austria.

12/2022 **Phase-contrast THz-CT for non-destructive testing**, *Inverse Days 2022*, Tahko, Kuopio, Finland.

12/2022 **Subaperture-based Digital Aberration Correction for Optical Coherence Tomography**, *12th Internal SFB Meeting*, Obergurgl, Austria.

10/2022 **Subaperture-based Digital Aberration Correction for Optical Coherence Tomography**, *RICAM Special Semester "Tomography Across the Scales", Workshop 1: Medical Imaging*, Linz, Austria.

9/2022 **Incomplete Survey on Fourier Phase Retrieval**, *SFB Member Meeting*, Gmunden, Austria.

9/2022 **Subaperture-based Digital Aberration Correction for Optical Coherence Tomography**, *Symposium on Inverse Problems: From experimental data to models and back*, Potsdam, Germany.

6/2022 **Fourier Optics in Microscopy and Digital Aberration Correction**, *11th Internal SFB Meeting*, Windischgarsten, Austria.

5/2022 **Frame Decompositions and Inverse Problems**, *10th International Conference "Inverse Problems: Modeling and Simulation"*, Mellieha, Malta.

4/2022 **Adjoint Sobolev Embedding Operators and Inverse Problems**, *2nd Lanczos Workshop "Continuous and discrete iterative methods for image and signal reconstruction", A Hamilton Mathematics Institute Workshop*, Dublin, Ireland, Invited Lecturer.

4/2022 **Frame Decompositions and Inverse Problems**, *2nd Lanczos Workshop "Continuous and discrete iterative methods for image and signal reconstruction", A Hamilton Mathematics Institute Workshop*, Dublin, Ireland, Invited Lecturer.

9/2021 **Frame Decompositions and Inverse Problems**, *2nd Alps-Adriatic Inverse Problems Workshop 2021 (AAIP 2021), Chemnitz Inverse Problems Symposium on tour*, Klagenfurt, Austria.

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12/2020 **Frames for Tomography and Galactic Kaczmarz**, *Sixth Internal SFB Meeting*, Online Seminar.

9/2020 **A Frame Decomposition for Bounded Linear Operators with Applications in Tomography**, *Fifth Internal SFB Meeting*, Online Seminar.

12/2019 **A Frame Decomposition of the Atmospheric Tomography Operator**, *Third Internal SFB Meeting*, Obergurgl, Austria.

7/2019 **A Tangential Cone Condition for Linear Elastography**, *Applied Inverse Problems*, Grenoble, France.

7/2019 **A Two-Point Gradient Method for Nonlinear Ill-Posed Problems**, *Applied Inverse Problems*, Grenoble, France.

12/2018 **Singular Value Decompositions for Atmospheric Tomography – A Status Report**, *SFB 2nd Workshop*, Obergurgl, Austria.

9/2018 **Feeling the Flow with Singular Values**, *SFB Member Workshop*, Altenmarkt i.P., Austria.

7/2018 **Two-Point Gradient Methods for Nonlinear Ill-Posed Problems**, *SFB Internal Meeting*, Vienna, Austria.

7/2018 **A Two–Point Gradient Method for Nonlinear Ill-Posed Problems**, *SIAM Conference on Imaging Science*, Bologna, Italy.

3/2018 **Two–Point Gradient methods in Medical Imaging and MRAI**, *Inverse Problems in the Alps II*, Obergurgl, Austria.

2/2018 **Various Ways of Learning and More**, *DK Mini-Workshop Computational Mathematics in Numerical Analysis and Symbolic Computation*, Linz, Austria.

9/2017 **MRAI, TPG and Lamé**, *DK Statusseminar*, Strobl, Austria.

8/2017 **Two-Point Gradient Methods for solving Nonlinear Ill-Posed Problems**, *PCH60: Computational Inverse Problems - Insight and Algorithms*, Copenhagen, Denmark.

7/2017 **A Royal Road to Lost Causes or How to Solve Inverse Problems**, *DK Mini-Workshop Computational Mathematics in Numerical Analysis and Symbolic Computation*, Linz, Austria.

5/2017 **Pulse wave velocity estimation via Magnetic Resonance Advection Imaging**, *Applied Inverse Problems*, Hangzhou, China.

12/2016 **Pulse Wave Velocity Estimation via Magnetic Resonance Advection Imaging**, *IFIP WG 7.4 Workshop on Inverse Problems and Imaging*, Mülheim a.d. Ruhr, Germany.

9/2016 **MRAI and TPG**, *DK Statusseminar*, Strobl, Austria.

9/2016 **Inverse Problems and MRAI – Mapping the pulse wave velocity**, *Chemnitz Symposium on Inverse Problems*, Chemnitz, Germany.

3/2016 **Inverse Problems and MRAI – Mapping the pulse wave velocity**, *Inverse Problems in the Alps*, Obergurgl, Austria.

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Invited colloquium & seminar talks

01/2024 **Phase Retrieval: Basic Results and Applications**, *CSC Seminar, Faculty of Mathematics, University of Vienna*, Vienna, Austria.

7/2020 **Two-Point Gradient Methods for Nonlinear Ill-Posed Problems**, *Joint Fudan-RICAM Seminar on Inverse Problems*, Online Seminar.

4/2017 **Two-Point Gradient Methods for solving Nonlinear Ill-Posed Problems**, *Technical University of Denmark*, Lyngby, Denmark.

Other Talks

2/2017 **Federpendel und Planetenbahnen**, *"Aktuelle Projekte der Angewandten Mathematik" seminar for high school teachers*, Linz, Austria.

Poster presentations

6/2023 **Subaperture-based Digital Aberration Correction for OCT**, *Synergistic workshop on Rich and Nonlinear Tomography*, Isaac Newton Institute, Cambridge, United Kingdom, with E. Sherina, R. Ramlau, M. Pircher, R. Leitgeb.

7/2022 **Off-axis PSF reconstruction for SCAO and MCAO systems**, *Adaptive Optics Systems VIII*, Montreal, Quebec, Canada, with R. Wagner, J. Niebsch, R. Ramlau.

6/2021 **Myopic Approaches for a Real World Palletizing Problem**, *Austrian Robotics Workshop 2021*, Vienna, Austria, with F. Kagerer, M. Beinhofer, R. Ramlau.

5/2021 **Challenges for Optical Flow Estimates in Elastography**, *8th International Conference on Scale Space and Variational Methods in Computer Vision (SSVM)*, Online, with E. Sherina, L. Krainz, W. Drexler, O. Scherzer.

4/2021 **Phase-contrast THz-CT for NDT**, *9th International THz-Bio Workshop*, Online, with P. Fosodeder, A. Ploier, R. Ramlau, S. van Frank, C. Rankl.

12/2018 **SFB Tomography Across the Scales**, *50 Years of TNF*, Linz, Austria.

11/2017 **Fast Pulse Wave Velocity Estimation from Magnetic Resonance Imaging Data**, *Kepler Science Day*, Linz, Austria.

9/2017 **Fast Pulse Wave Velocity Estimation from Magnetic Resonance Imaging Data**, *DK Statusseminar*, Strobl, Austria.

9/2017 **Inverse Problems and MRAI – Mapping the Pulse Wave Velocity**, *6th CMAPT Workshop*, Linz, Austria.

5/2017 **On the Inverse Problem of Linearized Elasticity**, *DTU PhD Bazaar*, Lyngby, Denmark, with E. Sherina.

3/2017 **On the Inverse Problem of Linearized Elasticity**, *100 Years of the Radon Transform*, Linz, Austria, with E. Sherina.

5/2016 **Inverse Problems and MRAI – Mapping the Pulse Wave Velocity**, *2nd International Conference on Mathematical Neuroscience (ICMNS)*, Juan Les Pins, France.

Teaching Experience

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Winter 2023 **Integral Equations and Boundary Value Problems**, *Substitute Lecturer*, in four units of the lecture during leaves of Prof. Ronny Ramlau (main lecturer).

Winter 2020 **Integral Equations and Boundary Value Problems**, *Lecturer*.

Winter 2019 **Integral Equations and Boundary Value Problems**, *Lecturer*.

Winter 2018 **Integral Equations and Boundary Value Problems Exercises**, *Course Instructor*, as well as substitute lecturer in seven units of the corresponding lecture.

Winter 2018 **Integral Equations and Boundary Value Problems Exercises**, *Course Instructor*, as well as substitute lecturer in seven units of the corresponding lecture.

Winter 2016 **Mathematics I for Chemists Exercises**, *Course Instructor*.

Winter 2015 **Mathematics III for Mechatronics Exercises**, *Course Instructor*.

Membership in Professional Society

Since 2024 **Eurasian Association on Inverse Problems (EAIP)**, *steering committee*.

Since 2022 **Inverse Problems International Association**, *member*.

Since 2019 **Gesellschaft für Inverse Probleme e.V. (GIP)**, *member*.

Master Theses Supervised

Ongoing 2023 **Alfred Miksch**, *TBA*, Co-supervisor together with Prof. Ronny Ramlau and Dr. Roland Wagner.

Ongoing 2023 **Nicole Feilmaier**, *TBA*, Co-supervisor together with Prof. Ronny Ramlau.

Winter 2022 **Michaela Lehner**, *Expansion of the Interstellar Density Function using Zernike Polynomials*, Co-supervisor together with Prof. Ronny Ramlau.

Summer 2022 **Christoph Plakolm**, *A Dictionary-based fitting approach for localization in superresolution microscopy*, Co-supervisor together with Prof. Ronny Ramlau.

Summer 2022 **Thomas Augl**, *MRI Pulse Wave Splitting In The Human Brain: An Inverse Problem Approach*, Co-supervisor together with Prof. Ronny Ramlau.

Winter 2021 **Stefan Immler**, *Dynamische Modellierung eines Kommunalfahrzeugs mit leistungsverzweigtem Hybridantrieb*, Co-supervisor together with Prof. Ronny Ramlau.

Winter 2020 **Lukas Weissinger**, *Realization of the Frame Decomposition of the Atmospheric Tomography Operator*, Co-supervisor together with Prof. Ronny Ramlau.

Winter 2020 **Florian Kagerer**, *Myopic Solution Approaches for a Real World Palletizing Problem*, Co-supervisor together with Prof. Ronny Ramlau.

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Summer 2019 **Fabian Hinterer**, *Fast minimization of Tikhonov functionals with sparsity constraints*, Co-supervisor together with Prof. Ronny Ramlau.

PhD Students Supervised

Since 2/2023 **Simon Hackl**, *TBA*, Co-supervisor together with Prof. Ronny Ramlau.

Since 10/2022 **Wolfgang Rannetbauer**, *TBA*, Co-supervisor together with Prof. Ronny Ramlau.

Since 3/2021 **Lukas Weissinger**, *TBA*, Co-supervisor together with Prof. Ronny Ramlau.

6/2019 – 11/2023 **Fabian Hinterer**, *Inverse problems in imaging applications across the scales*, Assistant supervisor together with Prof. Ronny Ramlau.

Research Stays

4/2017 – 5/2017 **Technical University of Denmark**, *visiting Prof. Per Christian Hansen*, Lyngby, Denmark.

3/2017 **Technical University of Denmark**, *visiting Prof. Kim Knudsen*, Lyngby, Denmark.

Awards

2022 **EAIP Young Scientist Award**, *for distinguished contributions to Inverse Problems*, Eurasian Association on Inverse Problems.

2014 **Merit-based Scholarship**, *Johannes Kepler University*, Linz, Austria.

2013 **Merit-based Scholarship**, *Johannes Kepler University*, Linz, Austria.

Activities as Organizer & Service to Profession

5/2022 **Austrian Science Festival *Long Night of Research***, *Presenter*.

2/2017 **Project week "Applied Mathematics" for high school students**, *Project instructor*, Project: Differential Equations, Kefermarkt, Austria.

2/2016 **Project week "Applied Mathematics" for high school students**, *Project instructor*, Project: Numerical Methods, Kefermarkt, Austria.

Editorial & Review Activities

Manuscripts reviewed for

Applied Numerical Mathematics

Electronic Transactions on Numerical Analysis

Inverse Problems (IOP trusted reviewer)

Journal of Complexity

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Journal of Computational and Applied Mathematics
Journal of Inverse and Ill-Posed Problems
Journal of Inverse Problems and Imaging
Journal of Mathematical Imaging and Vision
Mathematics
Numerical Functional Analysis and Optimization
Numerische Mathematik
Radon Series on Computational and Applied Mathematics

Languages

German Native Language
English Written & oral fluency
Russian Communicative abilities

References

Available upon request.

Linz, June 27, 2024

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