

Curriculum Vitae of Gitta Kutyniok

Contact and Personal Data

Name: Gitta Kutyniok
Office Address: Institut für Mathematik
Universität Osnabrück
Albrechtstraße 28a
49069 Osnabrück, Germany
Phone: +49-541-969 3516
Fax: +49-541-969 2770
Email: kutyniok@uni-osnabrueck.de
Homepage: www.analysis.uos.de/kutyniok
Website of AAG: www.analysis.uos.de

Educational Background

Sept. 1978 – July 1982 Weerth-Schule in Detmold
Sept. 1982 – July 1991 Stadtgymnasium in Detmold
May 1991 Abitur
Oct. 1991 – March 1996 Studies in Mathematics and Computer Science, Universität Paderborn
March 1996 Diploma in Mathematics and Computer Science, Universität Paderborn

Employment History

April 1996 – July 2001 Wissenschaftliche Assistentin (*Scientific Assistant*), Universität Paderborn
Nov. 2000 Dr.rer.nat. in Mathematics, Universität Paderborn
Aug. 2001 – Dec. 2001 Visiting Assistant Professor, Georgia Institute of Technology, Atlanta, USA
Jan. 2002 – March 2004 Wissenschaftliche Assistentin (*Scientific Assistant*), Universität Paderborn
April 2004 – Sept. 2004 Wissenschaftliche Assistentin (*Scientific Assistant*), Justus-Liebig-Universität Giessen
Oct. 2004 – March 2005 Fellowship holder of the German Research Foundation, Washington University in St. Louis, USA
April 2005 – Sept. 2005 Fellowship holder of the German Research Foundation, Georgia Institute of Technology, Atlanta, USA
Oct. 2005 – March 2007 Wissenschaftliche Assistentin (*Scientific Assistant*), Justus-Liebig-Universität Giessen
Juni 2006 Habilitation in Mathematics, Justus-Liebig-Universität Giessen
April 2007 – Sept. 2007 Heisenberg-Fellow of the German Research Foundation, Princeton University, USA

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| Oct. 2007 – March 2008 | Heisenberg-Fellow of the German Research Foundation, Stanford University, USA |
| April 2008 – Sept. 2008 | Heisenberg-Fellow of the German Research Foundation, Yale University, USA |
| Oct. 2008 – Sept. 2011 | Full Professor for Applied Analysis, Universität Osnabrück, and Head of the Applied Analysis Group (AAG) |
| Since Oct. 2011 | Einstein-Chair at the Technische Universität Berlin |

Honors and Awards

- 1998 Weierstraß Preis des Fachbereichs Mathematik/Informatik der Universität Paderborn für hervorragende Lehre
(Weierstraß Prize for outstanding teaching of the University of Paderborn)
- 2003 Forschungspreis der Universität Paderborn
(Research Prize of the University of Paderborn)
- 2004 Forschungsstipendium der DFG
(Research Fellowship of the German Research Foundation)
- 2006 Preis der Justus-Liebig-Universität Gießen
(Prize of the University of Gießen)
- 2006 Heisenberg-Stipendium der DFG
(Heisenberg-Fellowship of the German Research Foundation)
- 2007 von Kaven-Ehrenpreis der DFG
(von Kaven Prize of the German Research Foundation)
- 2010 Nomination by the University of Osnabrück for the Alfried Krupp-Förderpreis für junge Hochschullehrer
Nomination by the University of Osnabrück for the Alfried Krupp-Advancement Award for Young Professors
- 2011 Offer of an Einstein Chair at the Technische Universität Berlin

Grants

- 2006 – 2008 DAAD-Project “Complex and Harmonic Analysis for Time-Frequency Analysis (CHATIFA)” (313-PPP-N.07-lk) (PPP Germany-Norway) (joint with H. Führ, K. Gröchenig, and K. Seip)
- 2008 – 2011 DFG-SPP-1324, KU 1446/13-1: “Numerical and harmonic analysis of problems with anisotropic features, directional representation systems and the solution of transport equations” (joint with W. Dahmen and C. Schwab)
- 2010 – 2012 DFG Grant, KU 1446/14: “Multiscale representation systems for optimally sparse encoding and analysis of geometric features in 3-dimensional signals for both the continuous and digital setting”
- 2011 – 2014 SFB-Project, SFB 944 Physiology and Dynamics of Cellular Compartments: “Mathematical Image Analysis and Processing”

Invited Research Visits (of at least 1 week length)

2001

- Georgia Institute of Technology, Atlanta, Position as a Visiting Assistant Professor (5 months).

2002

- University of Missouri, Columbia, Invitation by Prof. P. G. Casazza (1 month).
- Washington University, St. Louis, Invitation by Prof. G. L. Weiss (2 weeks).

2003

- University of Arkansas, Fayetteville, Invitation by Prof. J. A. Hogan (1 week).
- Washington University, St. Louis, Invitation by Prof. G. L. Weiss (3 weeks).

2004

- Washington University, St. Louis, Invitation by Prof. G. L. Weiss (3 months).

2005

- Washington University, St. Louis, Invitation by Prof. G. L. Weiss (3 months).
- Georgia Institute of Technology, Atlanta, Invitation by Prof. C. Heil (6 months).
- University of Missouri, Columbia, Invitation by Prof. P. G. Casazza (1 week).
- Vanderbilt University, Nashville, Invitation by Prof. A. Aldroubi (1 week).

2006

- University of Missouri, Columbia, Invitation by Prof. P. G. Casazza (2 weeks).
- Universität Wien, Vienna, Invitation by Prof. H. G. Feichtinger (2 weeks).
- San Francisco State University, San Francisco, Invitation by Prof. S. Li (1 week).

2007

- University of South Carolina, Columbia, Invitation by Prof. W. Dahmen and Prof. P. Petrushev (1 week).
- Princeton University, Princeton, Invitation by Prof. I. Daubechies (6 months).
- Stanford University, Stanford, Invitation by Prof. D. L. Donoho (3 months).
- RWTH Aachen, Aachen, Invitation by Prof. W. Dahmen (1 week).
- Harvard University, Cambridge, Invitation by Prof. V. Tarokh (1 week).

2008

- Stanford University, Stanford, Invitation by Prof. D. L. Donoho (4 months).
- Yale University, New Haven, Invitation by Prof. R. Coifman (5 months).
- Princeton University, Princeton, Invitation by Prof. A. Pezeshki (1 week).
- Georgia Institute of Technology, Atlanta, Invitation by Prof. C. Heil (1 week).
- Cambridge University, Isaac Newton Institute for Mathematical Sciences, Programm “Statistical Theory and Methods for Complex, High-Dimensional Data”, Invitation by Prof. D. M. Titterington (1 month).
- University of South Carolina, Columbia, Invitation by Prof. W. Dahmen und Prof. P. Petrushev (1 week).
- Institute for Mathematical Sciences, National University of Singapore, Invitation by Prof. Z. Shen (1 week).

2009

- Colorado State University, Fort Collins, Invitation by Prof. A. Pezeshki (1 week).
- National University of Singapore, Singapore, Invitation by Prof. Z. Shen (1 week).
- University of Missouri, Columbia, Invitation by Prof. P. G. Casazza (1 week).
- Renaissance Technologies, East Setauket, Invitation by Prof. D. L. Donoho (1 month).
- Stony Brook University, Stony Brook, Invitation by Prof. D. Geller (1 month).

- University of Houston, Houston, Invitation by Prof. B. G. Bodmann and Prof. D. Labate (1 week).
- Oxford University, Oxford, Invitation by Prof. R. Hauser (1 week).

2010

- KAUST (King Abdullah University of Science and Technology), Jeddah, Invitation by Prof. Helmut Pottmann and Dr. Grohs (1 week).
- Vanderbilt University, Nashville, Invitation by Prof. A. Aldroubi (1 week).
- University of Heidelberg, Invitation by Prof. M. Leinert (2 weeks).
- University of Houston, Houston, Invitation by Prof. B. G. Bodmann and Prof. D. Labate (1 weeks).
- University of South Carolina, Columbia, Invitation by Prof. W. Dahmen und Prof. P. Petrushev (1 week).
- Princeton University, Princeton, Invitation by Prof. R. Calderbank and Prof. A. Pezeshki (1 week).
- Stanford University, Stanford, Invitation by Prof. D. L. Donoho (1 week).
- Colorado State University, Fort Collins, Invitation by Prof. A. Pezeshki (1 week).
- Stanford University, Stanford, Invitation by Prof. B. Rajaratnam (1 week).
- University of Missouri, Columbia, Invitation by Prof. P. G. Casazza (1 week).

2011 (up to now)

- University of Newcastle, Invitation by Prof. J. Hogan (1 week).
- Duke University, Invitation by Prof. M. Maggioni (1 week).
- Yale University, Invitation by Prof. R. Coifman (1 week).
- Colorado State University, Fort Collins, Invitation by Prof. A. Pezeshki (1 week).

Invited Talks

1997

- Colloquium, GSF–Forschungszentrum für Umwelt und Gesundheit, München, 7.10.1997.

1999

- Colloquium, GSF–Forschungszentrum für Umwelt und Gesundheit, München, 23.7.1999.

2000

- Graduate-Colloquium, TU München, 18.12.2000.

2001

- Colloquium, Universität zu Lübeck, 25.6.2001.
- Analysis Seminar, Georgia Institute of Technology, Atlanta, 28.11.2001.

2002

- Conference on “Frames, Wavelets, and Operator Theory”, Texas A&M University, 15.7.–19.7.2002.

2003

- AMS National Meeting, Baltimore, 15.1.–18.1.2003.
- Workshop on “Wavelets, Frames, and Operator Theory”, University of Maryland, 19.1.–21.1.2003.
- Analysis Seminar, University of Arkansas, Fayetteville, 23.1.2003.
- Colloquium, University of Arkansas, Fayetteville, 23.1.2003.

- International Symposium on Optical Science and Technology, SPIE's 48th Annual Meeting, Conference "Wavelets X", San Diego, 3.8.–8.8.2003.
- 25. Nordwestdeutsches Funktionalanalysis-Kolloquium, Universität Duisburg–Essen, Campus Essen, 8.11.2003.

2004

- Oberwolfach–Mini–Workshop "Wavelets and Frames", Mathematisches Forschungsinstitut Oberwolfach, 15.2.–21.2.2004.
- "Second International Conference of Computational Harmonic Analysis", Vanderbilt University, Nashville, 24.–30.5.2004.
- Seminar "Approximationstheorie und Numerik", Philipps–Universität Marburg, 3.6.2004.
- Wavelet Seminar, Washington University in St. Louis, St. Louis, 12.11.2004.

2005

- Analysis Seminar, University of Arkansas, Fayetteville, 17.2.2005.
- Colloquium, University of Arkansas, Fayetteville, 17.2.2005.
- Analysis Seminar, Washington University in St. Louis, St. Louis, 23.2.2005.
- Computational Analysis Seminar, Vanderbilt University, Nashville, 29.3.2005.
- Analysis Seminar, Georgia Institute of Technology, Atlanta, 13.4.2005.
- CSCAMM-Workshop "Sparse Representation in Redundant Systems", University of Maryland, College Park, 9.5.–13.5.2005.
- (2 talks) International Symposium on Optical Science and Technology, SPIE's 50th Annual Meeting auf der Konferenz "Wavelets XI", San Diego, 31.7.–4.8.2005.
- Banff–Workshop "Time-Frequency-Analysis and Non-Stationary Filtering", Banff International Research Station, 24.9.–29.9.2005.

2006

- Symposium about Applied Mathematics, Universität Zürich, Zürich, 23.1.2006.
- Oberseminar "Wissenschaftliches Rechnen und Modellbildung", TU München, München, 30.1.2006.
- Analysis Seminar, University of Missouri, Columbia, 28.2.2006.
- Wavelet Seminar, Washington University, St. Louis, 10.3.2006.
- Banff–Workshop "Coarsely Quantized Redundant Representations of Signals", Banff International Research Station, 11.3.–16.3.2006.
- NuHAG Seminar, Universität Wien, Wien, 27.3.2006.
- Colloquium, Justus-Liebig-Universität Gießen, 7.7.2006.
- Deutsches EEG/EP Mapping Meeting, Workshop über Wavelet-Analyse, Schloss Rauischholzhausen, 20.10.–22.10.2006.
- Workshop "The Kadison-Singer Problem", American Institute of Mathematics, Palo Alto, 25.9.–29.9.2006.
- Seminar, San Francisco State University, San Francisco, 5.10.2006.
- Oberseminar "Aktuelle Themen aus der Numerik", RWTH Aachen, 9.11.2006.
- Seminar "Angewandte Mathematik", Universität Potsdam, 14.11.2006.
- Oberseminar Marburg–Gießen "Approximationstheorie, Numerik und Optimierung", Universität Marburg, 28.11.2006.
- Rhein-Ruhr Seminar, Universität Duisburg-Essen, 1.12.2006.

2007

- Colloquium, GSF-Forschungszentrum für Umwelt und Gesundheit, Munich, 31.1.2007.
- (2 talks) Twelfth International Conference on Approximation Theory, San Antonio, Texas, 4.3.–8.3.2007.

- IMI Seminar, University of South Carolina, 12.3.2007.
- Norbert Wiener Center Seminar, University of Maryland, 19.4.2007.
- 2007 von Neumann "Symposium on Sparse Representations and High-Dimensional Geometry", Snowbird, Utah, 8.7.–12.7.2007.
- Oberwolfach-Workshop "Wavelet and Multiscale Methods", Mathematisches Forschungsinstitut Oberwolfach, 29.7.–4.8.2007.
- Brown Bag-Seminar, PACM, Princeton University, 22.8.2007.
- International Symposium on Optical Science and Technology, SPIE's 52th Annual Meeting, Conference "Wavelets XII", San Diego, 26.8.–30.8.2007.
- Banff-Workshop "Trends in Applied Harmonic Analysis", Banff International Research Station, 23.9.–28.9.2007.
- Applied Math Seminar, Stanford University, 9.11.2007.
- SAM Colloquium, ETH Zurich, 14.11.2007.
- Oberseminar "Aktuelle Themen aus der Numerik", RWTH Aachen, 22.11.2006.
- Colloquium, Universität Osnabrück, 23.11.2006.
- EE Seminar, Harvard University, 30.11.2007.
- Seminar, University of British Columbia, 12.12.2007.

2008

- (Poster) Workshop "Contemporary Frontiers in High-Dimensional Statistical Data Analysis", Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, 7.1.–11.1.2008.
- Lineare Algebra & Optimization-Seminar, Stanford University, 6.2.2008.
- Net/Comm/DSP Seminar, University of California, Berkeley, 11.2.2008.
- Conference on Information Sciences and Systems (CISS 2008), Princeton University, 19.3.–21.3.2008.
- Workshop on "Sparsity in High Dimensional Statistics and Learning Theory", Georgia Institute of Technology, 22.3.–24.3.2008.
- Analysis Seminar, Georgia Institute of Technology, 26.3.2008.
- IMI Seminar, University of South Carolina, 31.3.2008.
- Colloquium, Drexel University, 3.4.2008.
- Statistics Seminar, Stanford University, 6.5.2008.
- Colloquium, San Francisco State University, 7.5.2008.
- Applied Math Seminar, University of California, Davis, 8.5.2008.
- Workshop on "Nonlinear Approximation Techniques Using ℓ_1 ", Texas A&M University, 16.5.–18.5.2008.
- Applied Math Seminar, Yale University, 20.5.2008.
- Chinese-French-Singaporean Joint Workshop on "Wavelet Theory and Applications", Singapore, 9.6.–13.6.2008.
- 7th Conference on "Mathematical Methods for Curves and Surfaces", Toensberg, Norway, 26.6.–1.7.2008.
- Workshop "Frames for the finite world: Sampling, coding and quantization", American Institute of Mathematics, Palo Alto, 18.8.–22.8.2008.
- Alumni Meeting, Universität Osnabrück, 29.11.2008.
- Dagstuhl-Seminar "Structured Decompositions and Efficient Algorithms", Schloß Dagstuhl, Leibniz Zentrum für Informatik, 30.11.–5.12.2008.
- Talk Series "Jahr der Mathematik", Universität Osnabrück, 16.12.2008.
- Colloquium, Universität Münster, 18.12.2008.

2009

- Meeting of FNRS Contact Group "Wavelets and applications", Brussels, 19.1.2009.
- Tag der Berufspraxis, Universität Bielefeld, 23.1.2009.

- Neurobiology Departmental Seminar, Universität Osnabrück, 3.3.2009.
- Banff-Workshop “Frames from First Principles”, Banff International Research Station, 16.3.–20.3.2009.
- Mathematics-Electrical Engineering Seminar, Colorado State University, 24.3.2009.
- Colloquium, Universität Paderborn, 28.5.2009.
- Colloquium in Applied Mathematics, Universität Münster, 6.5.2009.
- (2 talks) SampTA09, CIRM, Marseille, 18.5.–22.5.2009.
- Conference “Strobl09”, Strobl, Austria, 15.6.–19.6.2009.
- SFB-Colloquium, Universität Bonn, 7.7.2009.
- Seminar, Universität des Saarlandes, 10.7.2009.
- Mathematics-Electrical Engineering Seminar, Nanyang Technological University, 24.7.2009.
- (2 talks) International Symposium on Optical Science and Technology, SPIE’s 54th Annual Meeting, Conference “Wavelets XIII”, San Diego, 2.8.–6.8.2009.
- Colloquium, Stony Brook University, 3.9.2009.
- Analysis Seminar, Stony Brook University, 8.9.2009.
- Analysis Seminar, University of Houston, 5.10.2009.
- Computational Mathematics and Applications Seminar, Oxford University, 15.10.2009.
- Antrittsvorlesung, Universität Osnabrück, 13.11.2009.
- Colloquium, Institute of Biomathematics and Biometry, Helmholtz Zentrum München, 25.11.2009.
- Colloquium on Applied Mathematics, Universität Hamburg, 26.11.2009.

2010

- AMS National Meeting, San Francisco, 13.1.–16.1.2010.
- Satellite Conference of the AMS Meeting, Workshop on “Optimal Frames and Operator Algebras”, San Francisco State University, 17.1.–19.1.2010.
- Applied Mathematics Seminar, KAUST, 14.2.2010.
- IMI Seminar, University of South Carolina, 3.3.2010.
- 13th International Conference on Approximation Theory, San Antonio, 7.3.–10.3.2010.
- Analysis Seminar, University of Houston, 9.10.2009.
- Conference on Information Sciences and Systems (CISS 2010), Princeton University, 17.3.–29.3.2010.
- (2 talks) Interdisciplinary Workshop on “Sparsity and Modern Mathematical Methods for High Dimensional Data”, Brussels, Belgium, 6.4.–10.4.2010.
- SIAM Conference on Imaging Science (IS10), Chicago, 12.4.–14.4.2010.
- Seminar, Universität Münster, 28.4.2010.
- Colloquium, Universität Frankfurt, 7.5.2010.
- Conference in Honor of Pete Casazza’s 65th Birthday, “From Banach Spaces to Frame Theory and Applications”, University of Maryland, 20.5.–23.5.2010.
- Colloquium, Universität Oldenburg, 2.6.2010.
- Workshop “Sparsity and Computation”, Universität Bonn, 7.6.–11.6.2010.
- Conference Noko 2010, Universität Oldenburg, 12.6.2010.
- (2 talks) Seventh International Conference on Curves and Surfaces, Avignon, France, 24.6.–30.6.2010.
- Conference “New Trends in Harmonic and Complex Analysis”, Bremen, 29.6.–3.7.2010.
- Seminar, TU Berlin, 9.7.2010.
- Oberwolfach-Workshop “Wavelet and Multiscale Methods”, Mathematisches Forschungsinstitut Oberwolfach, 1.8.–7.8.2010.
- ECE Seminar, Rice University, 14.9.2010.
- Colloquium, San Francisco State University, 17.9.2010.

- Oberwolfach-Mini-Workshop “Shearlets”, Mathematisches Forschungsinstitut Oberwolfach, 4.10.–8.10.2010.
- Illinois/Missouri Applied Harmonic Analysis Seminar, University of Illinois, 16.10.2010.
- Colloquium, Jacobs-University Bremen, 8.11.2010.
- Conference of the Canadian Mathematical Society in Vancouver, Canada, 4.12.–6.12.2010.

2011 (up to now)

- Keynote Talk, International Conference on Harmonic Analysis and Applications, Sydney, 7.2.–11.2.2011.
- Kolloquium, University of Newcastle, Newcastle, 14.2.2011.
- Workshop “New Frontiers in Imaging and Sensing”, University of South Carolina, 17.2.–23.2.2011.
- Analysis Seminar, Duke University, 28.2.2011.
- Analysis Seminar, Yale University, 15.3.2011.
- Invited Survey Talk, 82nd Annual Meeting of the International Association of Applied Mathematics, Graz University of Technology, 18.4.–21.4.2011.
- Invited Talk, 82nd Annual Meeting of the International Association of Applied Mathematics, Graz University of Technology, 18.4.–21.4.2011.
- Invited Talk, SampTA 2011, Nanyang Technological University, Singapore, 2.5.–6.5.2011.
- Invited Talk, International Symposium in Approximation Theory, Vanderbilt University, 17.5.–21.5.2011.
- Keynote Talk, International Conference on Applied Harmonic Analysis and Multiscale Computing, Edmonton, Canada, 25.7.–28.7.2011.
- Mathematics-Electrical Engineering Seminar, Colorado State University, 29.7.2011.
- Colloquium, University of Colorado, 5.8.2011.
- (3 talks) International Symposium on Optical Science and Technology, SPIE’s 54th Annual Meeting, Conference “Wavelets and Sparsity XIV”, San Diego, 21.8.–25.8.2011.
- ILAS 2011, TU Braunschweig, Germany, 22.8.–26.8.2011.
- Keynote Talk, “Bommerholz Conference on Multivariate Approximation”, Bommerholz, Germany, 24.9.–27.9.2011.
- Plenary Talk, International Workshop on Wavelets, Frames and Applications, University of Delhi, India, 15.12.–21.12.2011.

2012 (up to now)

- Plenary Talk, Conference “Mathematics and Image Analysis 2012”, Paris, 16.1.–18.1.2012.

Further Invitations/Honors

- 2009 Guest on the Red Sofa in the Mathematikum, Gießen
- 2009 Nomination for Program Chair for the SIAM Activity Group on Imaging Science
- 2010 Inscription in the Internet Portal “AcademiaNet” for Excellent Female Researchers
- 2010 Invitation for Panel of the FWO

Refereeing and Reviewing Work

- Member of the Advisory Boards for the following book series:
 - Applied and Numerical Harmonic Analysis (Birkhäuser-Springer)
- Editor for the journals:
 - Acta Applicandae Mathematicae (Corresponding Editor)

- Journal of Wavelet Theory and Applications (Associate Editor)
- Referee for the journals:
 - Acta Applicandae Mathematicae
 - Advances in Computational Mathematics
 - Applied and Computational Harmonic Analysis
 - Bulletin of Iranian Mathematical Society
 - Constructive Approximation
 - Contemporary Mathematics
 - EURASIP Journal on Applied Signal Processing
 - Glasnik Matematički
 - IEEE Transactions on Image Processing
 - IEEE Transactions on Information Theory
 - IEEE Transactions on Signal Processing
 - Illinois Journal of Mathematics
 - Indian Journal of Mathematics
 - International Journal of Wavelets, Multiresolution and Information Processing
 - Journal of Applied Functional Analysis
 - Journal of Approximation Theory
 - Journal of Computational Mathematics
 - Journal of Computational Physics
 - Journal of Fourier Analysis and Applications
 - Journal of Functional Analysis
 - Journal of Geometric Analysis
 - Journal of Inequalities and Applications
 - Journal of Mathematical Analysis and Applications
 - Journal of Mathematical Imaging and Vision
 - Journal of the Belgian Mathematical Society
 - Journal of Visual Communication and Image Representation
 - Linear Algebra and its Applications
 - Mathematische Nachrichten
 - Methods and Applications of Analysis
 - Monatshefte für Mathematik
 - Proceedings of the AMS
 - Proceedings of the EMS
 - Rocky Mountain Journal of Mathematics
 - Sampling Theory in Signal and Image Processing
 - SIAM Journal on Imaging Sciences
 - SIAM Journal on Mathematical Analysis
 - SIAM Journal on Numerical Analysis
 - SIAM Journal on Scientific Computing
 - Signal, Image, and Video Processing
 - Signal Processing
- Reviewer for international science foundations:
 - Deutsche Forschungsgemeinschaft (DFG).
 - European Commission (EC).
 - French National Research Agency (ANR). Icelandic Centre for Research (Rannis).
 - Israel Science Foundation (ISF).
 - National Science Foundation in den USA (NSF).
 - German-Israeli Foundation for Scientific Research and Development (GIF).

- Deutsche Mathematiker Vereinigung (DMV).
- Dutch National Science Foundation (NWO).
- Vienna Science and Technology Fund (WWTF).
- Reviewer for the *Mathematical Reviews*.
- 2008: Panelist for the *National Science Foundation (NSF)*.
- 2008: Reviewer for the Conference on Information Sciences and Systems (CISS 2008).
- 2009: Juror for *Jugend forscht* auf Bundesebene.
- Reviewer for several Ph.D. and Habilitation Theses.

Organization of Meetings

2006

- Summer Meeting of the Oberseminar Marburg – Gießen “Approximationstheorie und Numerik”, Justus-Liebig-Universität Gießen, 6.6.2006.
- Workshop on Wavelet-Analyse at the Deutsche EEG/EP Mapping Meeting, Schloss Rauischholzhausen, 20.10.–22.10.2006 (joint with A. Klein and T. Sauer).

2008

- Special Session “Sparse Representations, Frames, and Signal Processing”, CISS 2008 (Conference on Information Sciences and Systems), Princeton University, 19.3.–21.3.2008 (joint with A. Pezeshki).
- 6th International Conference on “Wavelet Analysis and Pattern Recognition” (ICWAPR 2008), Hong Kong, 29.8.–31.8.2008 (Member of the Program Committee).
- Dagstuhl-Seminar “Structured Decompositions and Efficient Algorithms”, Schloß Dagstuhl, Leibniz Zentrum für Informatik, 30.11.–5.12.2008 (joint with S. Dahlke, I. Daubechies, M. Elad and G. Teschke).

2009

- Banff-Workshop “Frames from first principles: Error correction, symmetry goals, and numerical efficiency”, Banff International Research Station, 15.3.–20.3.2009 (joint with B. Bodmann, P. G. Casazza, V. Paulsen, and O. Yilmaz).
- Special Session “Geometric Multiscale Analysis”, SampTA 2009, Centre International de Rencontres Mathématiques in Marseille, 18.5.–22.5.2009.
- Special Session “From Frames to Fusion Frames”, The International Symposium on Optical Science and Technology, SPIE’s 54th Annual Meeting in San Diego, Wavelets XIII, 2.8.–6.8.2009 (joint with P. G. Casazza).

2010

- Special Session “Compressed Sensing, Sparse Approximation, and Frame Theory”, CISS 2010 (Conference on Information Sciences and Systems), Princeton University, 17.3.–19.3.2010 (joint with A. Pezeshki).
- Mini-Symposium “Microlocal Analysis and Imaging”, SIAM Conference on Imaging Science (IS10), Chicago, 12.4.–14.4.2010 (joint with M. Cheney).
- Birthday Conference in Honor of Pete Casazza’s 65th Birthday, Norbert Wiener Center, University of Maryland, 20.5.–22.5.2010. (Program Chair; joint with B. Bodmann, C. Heil, and T. Strohmer).

- Mini-Symposium “Sparse Approximation”, Curves and Surfaces 2010, Avignon, 24.6.–30.6.2010.
- Special Session “Geometric Multiscale Analysis”, New Trends in Harmonic and Complex Analysis, Bremen, 29.6.–3.7.2010.
- Oberwolfach-Mini-Workshop “Shearlets”, Oberwolfach, 4.10.–8.10.2010. (Organizer; joint with D. Labate).

2011 (up to now)

- Dagstuhl-Seminar “The impact of sparse representations and efficient sensing”, Schloß Dagstuhl, Leibniz Zentrum für Informatik, 30.1.–4.2.2011 (joint with S. Dahlke, M. Elad, Y. Eldar, and G. Teschke).
- Banff-Workshop “Sparse and Low Rank Approximation”, Banff International Research Station, 6.3.–11.3.2011 (joint with H. Rauhut, J. Tropp, and O. Yilmaz).
- Oberwolfach-Conference “Operator Algebras and Representation Theory: Frames, Wavelets and Fractals”, Oberwolfach, 27.3.–2.4.2011. (Organizer; joint with P. Jorgenson, G. Ólafsson, and S. Silvestrov).
- Conference “SampTA11”, Singapore, 2.5.–6.5.2011 (Program Chair; joint with L. Fesquet, B. Torrèssani, and Y. Eldar).
- Special Session “Geometric Multiscale Analysis”, Conference “SampTA11”, Singapore, 2.5.–6.5.2011.
- Joint Seminar University of Osnabrueck – Jacobs University, Bremen, 24.5.2011 (Organizer; joint with G. Pfander).
- 32. Norddeutsches Kolloquium über Angewandte Analysis und Numerische Mathematik, Osnabrück, 27.5.–28.5.2011 (Organizer; joint with S. Kunis).
- Mini-Symposium “Compressed Sensing and Sparse Approximation Algorithms”, Conference ILAS 2011, Braunschweig, 22.8.–26.8.2011 (joint with H. Rauhut).
- Special Session “Frames and Sparse Approximations”, The International Symposium on Optical Science and Technology, SPIE’s 55th Annual Meeting in San Diego, Wavelets and Sparsity XIV, 21.8.–25.8.2011 (joint with R. Balan and B. Bodmann).

2012 (up to now)

- Oberwolfach-Conference “Applied Harmonic Analysis and Sparse Approximation”, Oberwolfach, 10.6.–16.6.2012. (Organizer; joint with I. Daubechies, H. Rauhut, and T. Strohmer).

Committees and Service

Universität Paderborn:

1996 – 2004 Member of numerous committees of the Institute of Mathematics, e.g.,

- some Hiring Committees,
- a committee to plan the annual “Tag der Fakultät”,
- a committee to revise the examination regulation for Ph.D. and “Habilitation”

June 2001 – June 2002 Board member of the alumni association “Die Matiker”
 Nov. 2000 – Aug. 2002 Representative of the scientific assistants in mathematics in the
 Faculty Committee

Justus–Liebig–Universität Gießen:

2004 – 2006 Women’s representative
 2006 Member of two Hiring Committees

Universität Osnabrück:

2008 Chairperson of a Hiring Committee
 2009 Member of three Hiring Committees
 2009 Presentation at the “Parent’s Day”
 Since 2009 Colloquium Organizer
 Since 2009 Member of the Executive Board of the Institute
 Since 2009 Member of the “TaskForce Mathematics”
 Since 2009 Chairperson of the Organization Committee of the annual
 “Day of Mathematics”
 Since 2009 Chairperson of the Committee for Communication and Marketing
 2010 Presentation at the “Mathe Treff” for high school students
 Since 2010 Alternate Member of the Faculty Committee
 2010 Fundraising for the Colloquiums
 2010 Fundraising for the “Day of Mathematics”
 2010 Talk at the “Technology Day of Osnabrück”

Membership in Professional Societies

- American Mathematical Society (AMS)
- Deutsche Mathematiker–Vereinigung (DMV)
- International Association of Applied Mathematics and Mechanics (GAMM)
- Society for Industrial and Applied Mathematics (SIAM)
- SIAM Activity Group on Imaging Science

List of Publications

Journal Publications

1. Zeros of the Zak transform on locally compact abelian groups (joint with E. Kaniuth). *Proc. Amer. Math. Soc.* **126** (1998), 3561–3569.
2. Linear independence of time-frequency shifts under a generalized Schrödinger representation. *Arch. Math.* **78** (2002), 135–144.
3. The Zak transform on certain locally compact groups. *J. of Math. Sciences* **1** (2002), 62–85.
4. The Balian-Low theorem for symplectic lattices in higher dimensions (joint with K. Gröchenig, D. Han, and C. Heil). *Appl. Comput. Harmon. Anal.* **13** (2002), 169–176.
5. Ambiguity functions, Wigner distributions and Cohen’s class for LCA groups. *J. Math. Anal. Appl.* **277** (2003), 589–608.
6. Density of weighted wavelet frames (joint with C. Heil). *J. Geom. Anal.* **13** (2003), 479–493.
7. A qualitative uncertainty principle for functions generating a Gabor frame on LCA groups. *J. Math. Anal. Appl.* **279** (2003), 580–596.
8. A weak qualitative uncertainty principle for compact groups. *Illinois J. Math.* **47** (2003), 709–724.
9. Duality principles in Frame Theory (joint with P. G. Casazza and M. C. Lammers). *J. Fourier Anal. Appl.* **10** (2004), 383–408.
10. Wilson bases for general time-frequency lattices (joint with T. Strohmer). *SIAM J. Math. Anal.* **37** (2005), 685–711.
11. The geometry of the parameters of wave packet frames (joint with W. Czaja and D. Speegle). *Appl. Comput. Harmon. Anal.* **20** (2006), 108–125.
12. The local integrability condition for wavelet frames. *J. Geom. Anal.* **16** (2006), 155–166.
13. Beurling density and shift-invariant weighted irregular Gabor systems. *Sampl. Theory Signal Image Process.* **5** (2006), 131–149.
14. A redundant version of the Rado-Horn Theorem (joint with P. G. Casazza and D. Speegle). *Linear Algebra Appl.* **418** (2006), 1–10.
15. The theory of reproducing systems on locally compact abelian groups (joint with D. Labate). *Colloq. Math.* **106** (2006), 197–220.
16. Construction of Regular and Irregular Shearlet Frames (joint with D. Labate). *J. Wavelet Theory and Appl.* **1** (2007), 1–10.
17. A fundamental identity for Parseval frames (joint with R. Balan, P. G. Casazza, and D. Edidin). *Proc. Amer. Math. Soc.* **135** (2007), 1007–1015.
18. Affine density, frame bounds, and the admissibility condition for wavelet frames. *Constr. Approx.* **25** (2007), 239–253.
19. A generalization of Gram-Schmidt orthogonalization generating all Parseval frames (joint with P. G. Casazza). *Adv. Comput. Math.* **27** (2007), 65–78.
20. The Homogeneous Approximation Property for Wavelet Frames (joint with C. Heil). *J. Approx. Theory* **147** (2007), 28–46.

21. A Decomposition Theorem for frames and the Feichtinger Conjecture (joint with P. G. Casazza, D. Speegle, and J. C. Tremain). *Proc. Amer. Math. Soc.* **136** (2008), 2043–2053.
22. Beurling dimension of Gabor pseudo frames of affine subspaces (joint with W. Czaja and D. Speegle). *J. Fourier Anal. Appl.* **14** (2008), 514–537.
23. Fusion frames and distributed processing (joint with P. G. Casazza, and S. Li). *Appl. Comput. Harmon. Anal.* **25** (2008), 114–132.
24. The uncertainty principle associated with the continuous shearlet transform (joint with S. Dahlke, P. Maass, C. Sagiv, H.-G. Stark, and G. Teschke). *Int. J. Wavelets Multiresolut. Inf. Process.* **6** (2008), 157–181.
25. Density of frames and Schauder bases of windowed exponentials (joint with C. Heil). *Houston J. Math.* **34** (2008), 565–600.
26. Landau’s necessary density conditions for LCA groups (joint with K. Gröchenig and K. Seip). *J. Funct. Anal.* **255** (2008), 1831–1850.
27. Robust Dimension Reduction, Fusion Frames, and Grassmannian Packings (joint with A. Pezeshki, A. R. Calderbank, and T. Liu). *Appl. Comput. Harmon. Anal.* **26** (2009), 64–76.
28. Resolution of the wavefront set using continuous shearlets (joint with D. Labate). *Trans. Amer. Math. Soc.* **361** (2009), 2719–2754.
29. Adaptive Directional Subdivision Schemes and Shearlet Multiresolution Analysis (joint with T. Sauer). *SIAM J. Math. Anal.* **41** (2009), 1436–1471.
30. Shearlet Coorbit Spaces and associated Banach Frames (joint work with S. Dahlke, G. Steidl, and G. Teschke). *Appl. Comput. Harmon. Anal.* **27** (2009), 195–214.
31. A Quantitative Notion of Redundancy for Finite Frames (joint with B. G. Bodmann and P. G. Casazza). *Appl. Comput. Harmon. Anal.* **30** (2011), 348–362.
32. Sparse Fusion Frames: Existence and Construction (joint with R. Calderbank, P. G. Casazza, A. Heinecke, and A. Pezeshki). *Adv. Comput. Math.* **35** (2011), 1–31.
33. Sparse Recovery from Combined Fusion Frame Measurements (joint with P. Boufounos and H. Rauhut). *IEEE Trans. Inform. Theory* **57** (2011), 3864–3876.
34. Irregular Shearlet Frames: Geometry and Approximation Properties (joint with P. Kittipoom and W.-Q. Lim). *J. Fourier Anal. Appl.* **17** (2011), 604–639.
35. Compactly Supported Shearlets are Optimally Sparse (joint with W.-Q. Lim). *J. Approx. Theory* **163** (2011), 1564–1589.
36. Adaptive Multiresolution Analysis Structures and Shearlet Systems (gemeinsam mit B. Han und Z. Shen). *SIAM J. Numer. Anal.* **49** (2011), 1921–1946.
37. Optimally Sparse Frames (joint with P. G. Casazza, A. Heinecke, and F. Krahmer). *IEEE Trans. Inform. Theory*, to appear.
38. Construction of Compactly Supported Shearlets (joint with P. Kittipoom and W.-Q. Lim). *Constr. Approx.*, to appear.
39. Microlocal Analysis of the Geometric Separation Problem (joint with D. L. Donoho). Preprint.
40. Sparsity Equivalence of Anisotropic Decompositions. Preprint.
41. ShearLab: A Rational Design of a Digital Parabolic Scaling Algorithm (joint with M. Shahram and X. Zhuang). Preprint.

42. Compactly supported shearlet frames and optimally sparse approximations of functions in $L^2(\mathbb{R}^3)$ with piecewise C^α singularities (joint with J. Lemvig and W.-Q. Lim). Preprint.

Refereed Conference Proceedings

1. Computation of the density of weighted wavelet systems. In *Wavelets X* (San Diego, CA, 2003), SPIE Proc. **5207**, M. A. Unser, A. Aldroubi, and A. F. Laine, eds., SPIE, Bellingham, WA (2003), 393–404.
2. Frames of subspaces (joint with P. G. Casazza). In *Wavelets, Frames and Operator Theory* (College Park, MD, 2003), C. Heil, P. E. T. Jorgensen, and D. R. Larson, eds., Contemp. Math. **345**, Amer. Math. Soc., Providence, RI (2004), 87–113.
3. Sparse multidimensional representation using shearlets (joint with D. Labate, W.-Q. Lim, and G. Weiss). In *Wavelets XI* (San Diego, CA, 2005), SPIE Proc. **5914**, M. Papadakis, A. F. Laine, and M. A. Unser, eds., SPIE, Bellingham, WA (2005), 254–262.
4. Accumulative density (joint with G. Ascensi). In *Wavelets XI* (San Diego, CA, 2005), SPIE Proc. **5914**, M. Papadakis, A. F. Laine, and M. A. Unser, eds., SPIE, Bellingham, WA (2005), 188–195.
5. Duality principles, localization of frames, and Gabor theory (joint with P. G. Casazza, and M. C. Lammers). In *Wavelets XI* (San Diego, CA, 2005), SPIE Proc. **5914**, M. Papadakis, A. F. Laine, and M. A. Unser, eds., SPIE, Bellingham, WA (2005), 389–398.
6. Decompositions of frames and a new frame identity (joint with R. Balan, P. G. Casazza, and D. Edidin). In *Wavelets XI* (San Diego, CA, 2005), SPIE Proc. **5914**, M. Papadakis, A. F. Laine, and M. A. Unser, eds., SPIE, Bellingham, WA (2005), 379–388.
7. Sparse Multidimensional Representations using Anisotropic Dilation and Shear Operators (joint with K. Guo und D. Labate). In *Wavelets and Splines* (Athens, GA, 2005), G. Chen and M. J. Lai, eds., Nashboro Press, Nashville, TN (2006), 189–201.
8. Modeling Sensor Networks with Fusion Frames (joint with P. G. Casazza, S. Li, and C. J. Rozell). In *Wavelets XII* (San Diego, CA, 2007), 67011M-1–67011M-11, SPIE Proc. **6701**, D. Van De Ville, V. K. Goyal, and M. Papadakis, eds., SPIE, Bellingham, WA (2007).
9. From Wavelets to Shearlets and back again (joint with T. Sauer). In *Approximation Theory XII* (San Antonio, TX, 2007), M. Neamtu and L. Schumaker, eds., Nashboro Press, Nashville, TN (2008), 201–209.
10. Convolution and Wiener amalgam spaces on the affine group (joint with C. Heil). In *Recent Advances in Computational Science* (Beijing, China, 2005), P. E. T. Jorgensen, X. Shen, C.-W. Shu, and N. Yan, eds., World Scientific, Singapore (2008), 209–217.
11. Robustness of Fusion Frames under Erasures of Subspaces and of Local Frame Vectors (joint with P. G. Casazza). In *Radon transforms, geometry, and wavelets* (New Orleans, LA, 2006), E. L. Grinberg, D. Larson, P.E.T. Jorgensen, P. Massopust, G. Olafsson, E.T. Quinto, and B. Rubi, eds., Contemp. Math. **464**, Amer. Math. Soc., Providence, RI, 2008, 149–160.
12. Fusion frames and Robust Dimension Reduction (joint with A. Pezeshki and A. R. Calderbank). *42nd Annual Conference on Information Sciences and Systems (CISS)* (Princeton University, NJ, 2008), 2008, 264–268.
13. Analysis of ℓ_1 Minimization in the Geometric Separation Problem (joint with D. L. Donoho). *42nd Annual Conference on Information Sciences and Systems (CISS)* (Princeton University, NJ, 2008), 2008, 274–279.

14. Geometric Separation using a Wavelet-Shearlet Dictionary (joint with D. L. Donoho). *SampTA '09* (Marseille, France, 2009), B. Torresani and L. Fesquet, eds., Proc., 2009.
15. Error Correction for Erasures of Quantized Frame Coefficients (joint with B. G. Bodmann, P. G. Casazza, and S. Senger). *SampTA '09* (Marseille, France, 2009), B. Torresani and L. Fesquet, eds., Proc., 2009.
16. Erasure-Proof Coding with Fusion Frames (joint with B. G. Bodmann and A. Pezeshki). *SampTA '09* (Marseille, France, 2009), B. Torresani and L. Fesquet, eds., Proc., 2009.
17. Constructing Fusion Frames with Desired Parameters (joint with R. Calderbank, P. G. Casazza, A. Heinecke, and A. Pezeshki). *Wavelets XIII* (San Diego, CA, 2009), 744612-1 - 744612-10, SPIE Proc. **7446**, D. Van De Ville, V. K. Goyal, and M. Papadakis, eds., SPIE, Bellingham, WA, 2009.
18. Development of a Digital Shearlet Transform Based on Pseudo-Polar FFT (joint with D. L. Donoho and M. Shahram). *Wavelets XIII* (San Diego, CA, 2009), 74460B-1 - 74460B-13 SPIE Proc. **7446**, D. Van De Ville, V. K. Goyal, and M. Papadakis, eds., SPIE, Bellingham, WA, 2009.
19. A Low Complexity Replacement Scheme for Erased Frame Coefficients (joint with B. G. Bodmann, P. G. Casazza, and S. Senger). *Wavelets XIII* (San Diego, CA, 2009), 74460O-1 - 74460O-10, SPIE Proc. **7446**, D. Van De Ville, V. K. Goyal, and M. Papadakis, eds., SPIE, Bellingham, WA, 2009.
20. Erasure-Proof Transmissions: Fusion Frames meet Coding Theory (joint with B. G. Bodmann). *Wavelets XIII* (San Diego, CA, 2009), 74460P-1 - 74460P-11, SPIE Proc. **7446**, D. Van De Ville, V. K. Goyal, and M. Papadakis, eds., SPIE, Bellingham, WA, 2009.
21. Compressed Sensing for Fusion Frames (joint with P. Boufounos and H. Rauhut). *Wavelets XIII* (San Diego, CA, 2009), 744614-1 - 744614-11, SPIE Proc. **7446**, D. Van De Ville, V. K. Goyal, and M. Papadakis, eds., SPIE, Bellingham, WA, 2009.
22. Average Case Analysis of Sparse Recovery from Combined Fusion Frame Measurements (joint with P. Boufounos and H. Rauhut). *43rd Annual Conference on Information Sciences and Systems (CISS)* (Princeton University, NJ, 2010), 2010, to appear.
23. Upper and Lower Redundancy of Finite Frames (joint with B. G. Bodmann and P. G. Casazza). *43rd Annual Conference on Information Sciences and Systems (CISS)* (Princeton University, NJ, 2010), 2010, to appear.
24. Shearlets on Bounded Domains (joint with W.-Q. Lim). *Approximation Theory XIII (San Antonio, TX, 2010)*, Springer, to appear.
25. Compactly Supported Shearlets (joint with J. Lemvig and W.-Q. Lim). *Approximation Theory XIII (San Antonio, TX, 2010)*, Springer, to appear.
26. A Rational Design of a Digital Shearlet Transform (joint with D. L. Donoho, M. Shahram, and X. Zhuang). *SampTA '11* (Singapore, 2011), Proc., to appear.
27. Optimally Sparse Fusion Frames: Existence and Construction (joint with P. G. Casazza and A. Heinecke). *SampTA '11* (Singapore, 2011), Proc., to appear.
28. A Quantitative Notion of Redundancy and its Applications (joint with B. G. Bodmann and P. G. Casazza). *SampTA '11* (Singapore, 2011), Proc., to appear.
29. Optimally Sparse Approximations of Multivariate Functions Using Compactly Supported Shearlet Frames (joint with J. Lemvig and W.-Q. Lim). *SampTA '11* (Singapore, 2011), Proc., to appear.

30. Image Separation using Wavelets and Shearlets (joint with W.-Q Lim). *Curves and Surfaces* (Avignon, France, 2010), Lecture Notes in Computer Science, Springer, to appear.
31. Analysis of Data Separation and Recovery Problems using Clustered Sparsity (joint with E. J. King and X. Zhuang). Preprint.
32. Coarse Quantization with the Fast Digital Shearlet Transform (joint with B. G. Bodmann and X. Zhuang). Preprint.

Non-Refereed Conference Proceedings

1. Geometry of the parameters of wave packet frames. *Oberwolfach Reports* **10** (2004), 513–515.
2. Shearlets: A Wavelet-Based Approach to the Detection of Directional Features. *Oberwolfach Reports* **36** (2007), 35–38.
3. Shearlets: The First Five Years. *Oberwolfach Reports* **44** (2010), 1–5.

Books

1. Affine density in wavelet analysis. *Lecture Notes in Mathematics* **1914**, Springer-Verlag, Berlin, 2007, 142 + xii pp., ISBN: 978-3-540-72916-7.
2. Wavelets and Frames (joint with G. Ólafsson; as Eds.). *Oberwolfach Reports* **10**, 2004.
3. Structured Decompositions and Efficient Algorithms (joint with S. Dahlke, I. Daubechies, M. Elad, and G. Teschke; as Eds.). *Dagstuhl Seminar Proceedings* **08492**, 2008.
4. Shearlets (joint with D. Labate; as Eds.). *Oberwolfach Reports* **44**, 2010.
5. Compressed Sensing: Theory and Applications (joint with Y. Eldar). Cambridge University Press, in preparation.
6. Shearlets (joint with D. Labate). Birkhäuser-Springer, in preparation.
7. Finite Frames (joint with P. G. Casazza). Birkhäuser-Springer, in preparation.

Book Chapters

1. Data Separation by Sparse Representations in *Compressed Sensing: Theory and Applications*, Cambridge University Press, to appear.
2. Introduction to Compressed Sensing (joint with M. Davenport, M. Duarte, and Y. Eldar) in *Compressed Sensing: Theory and Applications*, Cambridge University Press, to appear.
3. Digital Shearlet Transforms (joint with W.-Q Lim and X. Zhuang) in *Shearlets: Multiscale Analysis for Multivariate Data*, Springer, to appear.
4. Shearlets and Optimally Sparse Approximations (joint with J. Lemvig and W.-Q Lim) in *Shearlets: Multiscale Analysis for Multivariate Data*, Springer, to appear.

Survey Papers/Book Reviews

1. Wavelets in Neurophysiology (joint with A. Klein, T. Sauer, and W. Skrandies). *Brain Topography* **20** (2007), 52–53.
2. Time-frequency analysis. *Human Cognitive Neurophysiology* **1** (2008), 12–21.
3. What is Applied Harmonic Analysis? *DMV Mitteilungen* **16** (2008), 78–84.

4. Book Review of “Four Short Courses on Harmonic Analysis” *DMV Mitteilungen*, to appear.

Teaching Activities

Current Students/Post-Docs/Visitors

- Bachelor student: Rafael Reifenhofer.
- Diploma students: Napoleon Schwan.
- Post-docs: Dr. Emily King, Dr. Jakob Lemvig, Dr. Wang-Q Lim, and Dr. Xiaosheng Zhuang.
- Humboldt-Fellow (Senior Researcher): Prof. Dr. Kasso Okoudjou.

Former Students/Post-Docs

- Bachelor student: Sabine Heider (finished 7/2010).
- Diploma students: Mareike Semel (finished 12/2010).
- Doctoral student: Pisamai Kittipoom (graduated 12/2009).

Lectures

WS 10/11	<i>Signal- und Bildverarbeitung</i>
SS 10	<i>Numerische Mathematik</i>
WS 09/10	<i>Reelle und Angewandte Analysis</i>
SS 09	<i>Mathematik II</i>
WS 08/09	<i>Mathematik I</i>
WS 06/07	<i>Mathematik für Physiker I</i>
SS 06	<i>Splinekurven und -flächen im CAGD</i>
WS 05/06	<i>Approximationstheorie</i>
WS 01/02	<i>MATH 2403–Differential Equations (Section A1)</i> <i>MATH 2403–Differential Equations (Section B3)</i> at the Georgia Institute of Technology

Reading Courses

SS 11	<i>Frame Theorie und Compressed Sensing</i>
SS 10	<i>Mathematische Methoden der Bildverarbeitung</i>
SS 09	<i>Signal- und Bildverarbeitung</i>

Exercises (Recitation Sessions)

WS 06/07	<i>Numerik I</i>
SS 06	<i>Signal- und Bildverarbeitung</i>
WS 05/06	<i>Numerik I</i>
SS 04	<i>Optimierung</i>
WS 03/04	<i>Mathematik für Informatiker III.1 (Stochastik)</i>

SS 03	<i>Analysis II</i>
WS 02/03	<i>Mathematik für Informatiker III.1 (Stochastik)</i>
SS 02	<i>Einführung in die Stochastik</i>
SS 01	<i>Mathematik für Informatiker IV (Computeralgebra)</i> <i>Differentialgleichungen</i>
WS 00/01	<i>Mathematik für Informatiker III.2 (Analysis II)</i> <i>Mathematik für Physiker I (Analysis I + Lineare Algebra)</i>
SS 00	<i>Topologie</i> <i>Analysis II</i>
WS 99/00	<i>Analysis I</i>
SS 99	<i>Mathematik für Informatiker II (Analysis I)</i>
WS 98/99	<i>Mathematik für Informatiker I (Lineare Algebra)</i>
SS 98	<i>Topologie</i> <i>Analysis II</i>
WS 97/98	<i>Analysis I</i>
SS 97	<i>Differentialgleichungen</i> <i>Mathematik für Physiker IV (Integraltransformationen)</i>
WS 96/97	<i>Stochastik I</i> <i>Mathematik für Physiker III (Funktionentheorie)</i>
SS 96	<i>Mathematik für Physiker II (Analysis II + Differentialgleichungen)</i>
WS 95/96	<i>Mathematik für Physiker I (Analysis I + Lineare Algebra)</i>

Seminars

SS 11	<i>Hochdimensionale Geometrie</i> <i>Geometrische Multiskalenanalyse</i>
WS 10/11	<i>Ausgewählte Themen aus der Angewandten Analysis</i> <i>Analysis (Proseminar)</i>
SS 10	<i>Angewandte Fourieranalyse</i>
WS 09/10	<i>Angewandte Harmonische Analysis</i> <i>Analysis (Proseminar)</i>
WS 08/09	<i>Signalverarbeitung</i>
SS 06	<i>Numerische Mathematik</i>
WS 05/06	<i>Numerische Mathematik</i>
SS 04	<i>Numerische Mathematik</i>
SS 96	<i>Banachalgebren</i>