

CURRICULUM VITAE

Current address:

Wolfgang Dahmen

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| Name | Wolfgang A. Dahmen |
| Place of Birth: | Linnich, Germany |
| Date of Birth: | Oct. 19, 1949 |
| Marital Status: | Married, One Child |
| Army Service: | 1968 – 1970 |
| Education: | Abitur, Kreisgymnasium Heinsberg, 1968, Diplom in Mathematics/Secondary Physics, RWTH Aachen, 1974 Dr. rer. nat., RWTH Aachen, 1976 Habilitation, Mathematics, University of Bonn, 1981 |

Professional Experience:

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|-------------------|--|
| 1974–1976 | Research Assistant, Lehrstuhl A für Mathematik, RWTH Aachen |
| 1976–1981 | Wissenschaftlicher Assistent, Institute of Applied Mathematics, University of Bonn |
| 1979–1980 | IBM Postdoctoral Fellowship, IBM T.J. Watson Research Center, Yorktown Heights, NY |
| 1981–1987 | Professor (C3), Mathematics, University of Bielefeld |
| 1987–1992 | Professor (C4), Mathematics, Free University of Berlin |
| 1992– | Professor (C4), Institute of Geometry and Practical Mathematics, RWTH Aachen |
| May 1998 | Offer for the directorship at the Center of Applied Mathematics, Purdue University, USA |
| March 2003 | Offer of a professorship at the TU Berlin in connection with the DFG Research Center |
| 2005– | Adjunct Professor, Department of Mathematics, University of South Carolina |

Specialization:

Applied & Numerical Analysis, Approximation Theory, Interdisciplinary Applications

Awards and Honors

Stipend of the Studienstiftung des deutschen Volkes, 1972–1974

Borchers Plakette, RWTH Aachen

IBM Postdoctoral Fellowship, IBM T.J. Watson Research Center, Yorktown Heights, N.Y.

ISI HighlyCited since 2001

Gottfried Wilhelm Leibniz-Prize 2002

Member of the German National Academy of Sciences, Leopoldina, 2009

Chair of the selection committee for the Gauss-Prize 2010 (IMU).

Keck Future Initiative Award (National Academies, USA), May 2011 (together with Thomas Vogt, Peter Binev, University of South Carolina, Columbia).

RWTH Distinguished Professorship, 2013– .

Conferences Organized

- Oberwolfach Conference, Methods and Applications of Approximation Theory (with D. Braess, C.A. Micchelli), Jan 31 –Feb 06, 1988
- NATO Advanced Study Institute, Computation of Curves and Surfaces, Puerto de la Cruz, Spain (with M. Gasca, C.A. Micchelli, L.L. Schumaker), July 10–22, 1989
- Oberwolfach Conference, Algebraic and Combinatorial Aspects of Approximation Theory, (with A. Dress), Oct 21–27, 1990
- Workshop on: Hyperbolic Differential Equations – Theory and Numerical Methods, Schloß Eringfeld, Oct. 4–10, 1993 (with J. Bemelmans)
- Workshop on Constructive Approximation (in FoCM ‘97), Jan. 97, Rio de Janeiro, Brasil,
- Special Session on Multiscale Methods (with C. Canuto), ENUMATH ‘97, Sep. 29 – Oct 3, 97
- Minisymposium on Multiscale Methods during the conference “Curves and Surfaces”, St. Malo, July 1 — July 7, 1999.
- Workshop on: “Multiresolution, Computer Visison and PDEs” during the FoCM meeting (Foundations of Computational mathematics) at Oxford, July 20 — July 28, 1999.
- Workshop: Moving Horizon, at Rolduc, The Netherlands, Nov. 24 – Nov. 25, 1999 (with W. Marquardt)
- Workshop on: “Multiresolution and Adaptivity” during the FoCM meeting (Foundations of Computational Mathematics) at Minneapolis, Aug. 8 – 10, 2002.
- Workshop on Adaptive Methods for Conservation Laws, Strassburg, Nov. 25 – 27, 2002.

- Oberwolfach Conference on “Wavelet and Multiscale Methods”, July 11 – July 17, 2004 (coorganized with A. Cohen (Paris), R. DeVore (Columbia) and A. Kunoth (Bonn))
- Workshop on Multiresolution and Adaptivity in Numerical Solution of PDEs, Foundations of Computational Mathematics, Universidad de Cantabria in Santander, Spain, 30 June - 2 July
- Winterschool on high dimensional problems, Bad Honnef, Dec. 14-18, 2005
- Oberwolfach Conference on “Wavelet and Multiscale Methods”, July 29 – Aug. 04, 2004 (coorganized with A. Cohen (Paris), R. DeVore (Columbia) and A. Kunoth
- Oberwolfach Conference on “Wavelet and Multiscale Methods”, July 29 – Aug. 04, 2007 (coorganized with A. Cohen (Paris), R. DeVore (Columbia) and A. Kunoth
- Workshop “Nonlinear and Adaptive Approximation in High Dimensions” 10.-15.12.2007, Physikzentrum, Bad Honnef, with (A. Kunoth, R. Schneider, C. Schwab).
- Workshop “Imaging in Electron Microscopy”, IMI International Special Research Workshop 2010, jointly organized by IMI and NanoCenter, University of South Carolina, Columbia, Feb 18 –23, 2010.
- Workshop “New Frontiers in Imaging and Sensing”, IMI International Special Research Workshop 2011, jointly organized by IMI and NanoCenter, University of South Carolina, Columbia, Feb 17 –22, 2011.
- Conference on Numerical Analysis and Scientific Computing, Max Planck Institute for Mathematics in the Sciences, Leipzig, Jan. 7 – 9, 2014 (co-organized with Jürgen Jost and Felix Otto).
- BIRS Workshop 14w5048 Imaging and Modeling in Electron Microscopy - Recent Advances (with P. Binev, R. DeVore).

Grants, Research Projects

- 1974–1976** DFG Grants, Informatikgruppe 14
- 1976–1981** Sonderforschungsbereich 72
- 1991–1992** Graduiertenkolleg,
Algorithms in Discrete Mathematics, FU Berlin
- 1992–2001** Graduiertenkolleg,
Analysis and Construction in Mathematics, RWTH Aachen
- 1993–2002** Graduiertenkolleg,
Transport Processes in Hypersonic Flow Problems,
RWTH Aachen

- 1982–1984** Constructive Approximation and Applications,
University of Bielefeld
- 1984–1987** Smoothing Techniques for the Solution of Linear Systems
(with L. Elsner), University of Bielefeld
- 1984–1986** NATO Grant DJ 639/84 (with C.A. Micchelli)
- 1984–1987** Renewed
- 1989** US NAVY Grant No N0014-89-J-9023
- 1988–1991** Research assistant Position Funded by Elf-Aquitaine
- 1987–1993** DFG-Grant, DNA Modeling
- 1994–1997** DFG-Grant, Multiskalen-Methoden für Operatorgleichungen (with S. Prössdorf)
- 1995–1998** VW-Stiftung, Reduzierte Modellierung und Simulation von Vielstoffprozessen
mit Multiskalenverfahren (with W. Marquardt)
- 1995–2001** DFG-Grant, Echtzeitoptimierung großer Systeme (with W. Marquardt)
- 1997–1999** DAAD VIGONI-Projekt, (mit Turin, Pavia),
Multilevel-Zerlegungsverfahren
- 1997–2000** DAAD PROCOPE-Project (mit Paris VI)
Multiskalen-Methoden
- 1997–2000** DFG-Grant, Adaptive Wavelet-Multilevelverfahren
für Operatorgleichungen
- 1997–2000** DFG-Grant, Erhaltungsgleichungen (conservation laws) (with S. Müller)
- 1997–2000** TMR Res.-Network, European Commission, Wavelets in Numerical Simulation
- 1997–2009** DFG Collaborative Research Initiative 401
TP A4: Multiscale solvers for flow problems
TP B2: Mesh generation for flows around flexible structures
TP B3: Well posedness of coupled fluid structure interaction
- 2002–2005** Graduiertenkolleg (DFG),
Hierarchie und Symmetrie in
Mathematischen Modellen
- 2002–2005** IHP Res.-Network, European Commission, Breaking Complexity
- 2005–2008** DAAD-PROCOPE Grant, Data Representation, Nonlinear Approximation
- 2007–2010** Office of Naval Research grant # N00014-07-1-0978
Capturing Sparsity In High Dimensional Data,
R. DeVore (joint PI), W. Dahmen (joint PI) and P. Binev (co-PI)
- 2008–** DFG Priority Programm SPP 1324, Adaptive Anisotropic Discretization Concepts
with G. Kutyniok, C. Schwab
- 2008–** SFB / Transregio 40 “Technologische Grundlagen für den Entwurf
thermisch und mechanisch hoch- belasteter Komponenten zukünftiger Raumtransport
systeme”, TPA1: Multiskalentechniken für hochaufgelöste Wirbelstrukturen (with S. Müller)
- 2009–2012** National Science Foundation Grant # DMS-0915104
Collaborative Research: An ATD Proposal: Fast Point Cloud Surface Reconstruction
Algorithms. R. Sharpley (PI), P. Binev (co-PI), W. Dahmen (co-PI)
- 2011–** DFG Research Group FOR 1779, Active Drag Reduction, Project: Numerical
fluid-structure coupling schemes for high-frequency surface motion (with S. Müller)

- 2012– DFG project: Optimal preconditioners of spectral Discontinuous Galerkin methods for elliptic boundary value problems
- 2012– DFG project: Effiziente und robuste Algorithmen zur fertigungsgerechten Auslegung von optischen Freiformoberflächen und deren experimentelle Erprobung, pending
- 2012– NSF grant 1222390, ATD Collaborative Research: Theory and Algorithms for High Dimensional Learning (with P. Binev PI)

Memberships/Scientific Services:

- 1994–2009 Scientific Board of the ZIF
(Center for Interdisciplinary Research) Bielefeld
- 1995– Executive Committee of FoCM (Foundations of Computational Mathematics)
- 1997 Selection Committee for 1997 Best Paper Award, Journal of Complexity
- 2000–2005 DFG Reviewer/Applied Mathematics
- 2005–2011 Senate of the DFG
- 2001– Nordrhein-Westfälische Akademie der Wissenschaften
- 2003 Selection Committee for the Cantor-Medal
- 2004 Panel for Section 16,
ICM06 (International Congress of Mathematicians)
“Numerical Analysis and Scientific Computing”
- 2006–2010 European Research Council Panel PE1: *Mathematics, Physical Sciences*
- 2007–2011 Advisory Board of the Cluster of Excellence
“Future Ocean”, University of Kiel
- 2008–2011 Advisory Board of the Department of Mathematics
University of Aveiro, Portugal
- 2009– Leopoldina - German National Academy of Sciences
- 2011– Centre de Recerca Matemàtica (CRM), Barcelona, Spain
- 2015– Scientific Steering Committee of the Isaac Newton Institute in Cambridge
- 2015– Chair of the board of: Foundations of Computational Mathematics

Editorship

- Editor-in-Chief (with E. Saff) of **Constructive Approximation**, Springer, 2004–, Associate Editor 1985– since 2004
- Associate Editor of **Journal of Approximation Theory and Applications**, Peking University, 1984–
- Associate Editor of **Advances in Computational Mathematics**, Baltzer, 1992–2004
- Associate Editor of **Applied Computational and Harmonic Analysis**, Academic Press, 1992–
- Associate Editor of **SIAM Journal Math. Anal.**, 1996–2010
- Associate Editor of **SIAM Journal Numer. Anal.**, 1999–2010
- Associate Editor of **J. Foundations of Comp. Math.**, 1999–

- Associate Editor of **J. Approx. Theory**, 2000 –
- Associate Editor of **Numer. Math.**, 2004 –
- Member of Editorial Board of **Acta Numerica**, 2008–
- Associate Editor of **M2AN**, 2008–
- Associate Editor of **ASCI** Advanced Structural and Chemical Imaging, 2014–
- Associate Editor of **JUQ** SIAM Journal of Uncertainty Quantification, 2015–

Edited Books:

- Co-Editor of **Computation of Curves and Surfaces**, NATO Asi-Series, Kluwer Academic Publishers, (with M. Gasca, C.A. Micchelli), 1990
- Co-Editor of **Curves and Surfaces**, Monografias de la ACADEMIA DE CIENCIAS de Zaragoza (with M. Gasca, C.A. Micchelli), 1990
- Co-Editor of **Special Issue on Mathematical Aspects of CAGD**, Constructive Approximation, (with C. de Boor, C.A. Micchelli, L.L. Schumaker), Springer, 1991
- Editor of the **Special Issue on Multiscale Techniques**, AICM, 1995
- Co-Editor of **Multiresolution Analysis and Partial Differential Equations**, Wavelet Analysis and Applications, Academic Press, San Diego 1997 (with A. Kurdila and P. Oswald)
- Co-Editor of **Multiscale Problems and Methods in Numerical Simulation**, Lecture Notes in Mathematics, Vol. 1825, Springer 2003 (with J.H. Bramble, A. Cohen).
- Co-Editor of **Modeling Nanoscale Imaging in Electron Microscopy**, Series: Nanostructure Science and Technology, Springer-Verlag, ISBN 978-1-4614-2190-0, 2012, (with T. Vogt, P. Binev)

Visiting Positions, Invitations

- IBM T.J. Watson Research Center, Yorktown Heights, N.Y., Sep. 89 – Aug. 80, Sep. 82,83, 84, 85, 86, 87, Feb./March 88, Sep. 89, 90, 91, 92
- Center of Approximation Theory, Texas A& M University, Feb 1984
- University of tel Aviv, March 84
- University of Amsterdam, Feb/March 84
- Banach Center Warsaw, March 86
- Lecturing at Universities in PR of China (Dalian, Beijing, Xian, Hefei, Guangzhou), Sep/Oct. 88

- Department of Applied Mathematics and Theoretical Physics, Cambridge University, England, Nov. 88
- Department of Mathematics, University of South Carolina, Columbia, March 89
- Department of Computer Science, University of Waterloo, Canada, March 90
- Department of Mathematics, University of South Carolina, Columbia, March 91
- Department of Mathematics, Purdue University, March 91
- Department of Mathematics, University of Alberta, Edmonton, Canada, April 91
- Department of Mathematics, University of Zaragoza, Spain, April 92
- Department of Mathematics, University of South Carolina, Columbia, USA, February 94
- Department of Mathematics, University of South Carolina, Columbia, USA, August 94
- Department of Mathematics, University of Cagliari, CNRS4, Italy, April 1995
- Department of Mathematics, Paris 6, November 1995
- Department of Mathematics, University of South Carolina, Columbia, February 1996
- Department of Mathematics, Université Pierre et Marie Curie (Paris 6), April 1997
- Department of Mathematics, University of Princeton, October 1997
- Department of Mathematics, Technical University of Chemnitz, December 1997, January 1998.
- Department of Mathematics, University of South Carolina, Columbia, January 1999, Nov. 1999, Aug 2000 (1 week).
- Department of Mathematics, Université Marie et Pierre Curie (Paris VI), July 1999.
- Department of Mathematics, DTU Copenhagen, Danmark, August 2000 (1 week)
- Department of Mathematics, University of South Carolina, Columbia, USA, November 2000, March 2001 (one week each)
- Institute of Mathematics and Applications, University of Minnesota, Minneapolis, USA, March 2001, March 22 - April 5, 2001.
- Department of Mathematics, University of South Carolina, Columbia, USA, Sep. 23 – Nov. 10. 2001.
- Department of Mathematics, University of South Carolina, Columbia, USA, Oct. 1, 2003 – Feb. 28, 2004.
- Department of Mathematics, University of South Carolina, Columbia, USA, Feb. 5, 2006 – April 15, 2006.

- Department of Mathematics, University of South Carolina, Columbia, USA, Feb. 12, 2007 – April 12, 2007.
- Toyota Institute of Technology, University of Chicago, April 12 – April 18, 2007.
- Laboratoire Jacques-Louis Lions, Université Pierre et Marie Curie, Paris, May 14, – June 10, 2007.
- Department of Mathematics, Charles University of Prague, Oct 1. – Oct. 6, 2007.
- Department of Mathematics, Australian National University, Canberra, Australia, Oct 1-8, 2010.
- Visiting Professor, Laboratoire Jacques-Louis Lions, Université Pierre et Marie Curie, Paris, Sep. 10 –Oct 11, 2013

Invited Addresses, Plenary Lectures

- Special session on Multivariate Splines, AMS Conference, Cincinnati, Jan 82
- International Symposium on Approximation Theory IV, College Station, Texas, Jan 83
- International Symposium on Surface Approximation, Gargnano, University of Milano, Italy, June 83
- SIAM Conference on Mathematical and Computational Methods in Computer Aided Design, Rensselaer Polytechnic Institute, Troy, New York, July 83
- IMA Conference on Algorithms for the Approximation of Functions and Data, Royal Military College of Science, Shrivenham, UK, July 85
- Dutch seminar on Numerical Mathematics, Woudschoten, The Netherlands, Oct 85
- International Conference on Functional Analytic Methods in Approximation Theory, Bombay (invitation), Dec 85
- XIXième Congrès National D’Analyse Numérique, Port Baccres, France, May 26–30, 86
- ACM SIGGRAPH ‘86, 13th Annual Conference on Computer Graphics and Interactive Techniques, Dallas, Texas, Aug 18–22, 86
- International Workshop on Multivariate approximation, Santiago de Chile, Dec 15–19, 86
- Symposium on Computer Aided Design and Shape Preserving Approximation, Göteborg, Sweden, March 26–27, 87
- Approximation and Surface Design, (invitation) International Mathematical Research Center (C.I.R.M.) of Luminy, France, March 23–27, 87
- Symposium on Topics in Computer Aided Geometric Design (invitation), Jerusalem, Israel, May 30 –June 2, 88

- Conference on Mathematical Methods of CAGD, Oslo, June 16–22, 88
- Recent developments in Scientific Software and Systems, Shrivenham, UK, July 11, 88
- Second IMA Conference on Algorithms for the Approximation of Functions and Data, Royal Military College of Science, Shrivenham, UK, July 13–16, 88
- IMACS World Congress ‘88 (invitation to special session), July 88
- An International Symposium on Asymptotic and Computational Analysis, University of Manitoba, Winnipeg, Canada (invitation), June 5–7, 89
- NATO Advanced Study Institute, Computation of Curves and Surfaces, Puerto de la Cruz, Tenerife, July 10–22, 89
- International Workshop on Multivariate Approximation and Interpolation, Duisburg, Aug 14–18, 89
- Approximation Theory and finite Elements, (invitation), Jabalpur, India, Dec 16–18, 89
- 3rd Workshop and Conference TOPICS IN CAGD ‘90, Erice, Sicily, May 12–19, 90
- Curves and Surfaces, Chamonix, France, June 21–28, 90
- Conference on Functional Analysis, Holomorphy, and Approximation Theory, Campinas, Brasil, July 23–27, 90
- ‘Topological Chemistry’ (invitation) Oct 28– Nov 01, 91, ZIF, Bielefeld
- Minisymposium ‘Free Form Volumes in Solid Modeling’ (invitation) Tempe, Arizona, Nov 4.–8. , 91
- Radial Basis Function Workshop, Cambridge, July 15–19, 91
- ‘Interaction of Harmonic Analysis, Signal Processing, and Computational Mathematics’ (Special session) 98th Annual AMS Meeting, Baltimore, USA, Jan 08–11, 92
- 3rd International Conference on Algorithms for Approximation, NATO Advanced Workshop, Oxford, UK, July 27–31, 92
- International Symposium on Operatorgleichungen und Numerische Analyse, (invitation), Gosen, Sep 28–Oct 2, 92
- Conference on ‘Advances in Computational Mathematics’, New Delhi, Jan 5–9, 93
- Wavelet Minisymposium, Annual Dutch Math. Congress, Amsterdam, April 16, 93
- Curves and Surfaces, Chamonix, France, June 10–16, 93
- Invitation to: AMS-IMS-SIAM Summer Research Conference “Continuous Algorithms and Complexity” June 14 – 18, 93, Mt. Molyoke College, Massachusetts, USA.

- 2nd Gauss Symposium, International Conference, Munich, Aug 2–6, 93
- ‘International Conference on Applied Analysis, August 26–30, 1993, Hanoi, Vietnam, (invitation)
- 2nd International Conference on Approximation and Optimization, Havana, Sep 26–Oct 1, 93
- International Conference on Wavelets, Taormina, Sicily, Oct 14–20, 93
- 3rd SIAM Conference on Geometric Design, Tempe, Arizona, Oct 30– Nov 5, 93
- Workshop on Scientific Computing in Theoretical Physics, Berlin, March 16–18, 1994
- Workshop on Wavelets, National University of Singapore, June 29– July 3, 1994
- International Conference on Computer Aided Geometric Design, Penag, Malaysia, July 4–8, 94
- Third International Conference on Mathematical Methods in Computer Aided Geometric Design, Ulvik, Norway, June 16–21, 94
- **ICM 94, International Congress of Mathematicians**, Invited Lecture, Section Numerical Analysis and Scientific Computing, Aug., 3–11, 94
- Plenary Lecture DMV–Tagung, Duisburg, 18–24. 9. 94
- Wavelet–Galerkin Methods in Computational Mechanics, Special Session in: *Society of Engineering Science 31st Annual Technical Meeting*, Oct 10–12, 1994, Texas A&M University, College Station
- Eighth International Conference on Approximation Theory, College Station, Jan. 8–12, 1995
- Recent Advances in Numerical Methods for Partial Differential Equations, Politecnico de Torino, Italy, Feb. 14–16, 1995
- Multiscale Phenomena: Modelling and Computation, Gauss Minerva Center for Scientific Computation, Feb. 20–24, 1995, Eilat, Israel
- Workshop on multiscale methods, Berlin, March 27 –April 1, 1995
- Third US National Congress on Computational Mechanics, Dallas, June 12 –14, 1995
- AMS–SIAM Summer Seminar, Mathematics of Numerical Analysis, Real Number Algorithms, Park City, Utah, July 23 – Aug 5, 1995
- Spline Functions and the Theory of Wavelets, Montreal, University of Montréal, March 4—8, 1996
- 9th International GAMM–Workshop on Parallel Multigrid Methods, Strobl, Austria, May 13—17, 1996

- AMS–Benelux Congress on Mathematics, Numerical Analysis Session, Antwerp, Belgium, May 22–25, 1996
- Functional Analysis and Partial Differential Equations, Han-sur-Lesse, Belgium, June 10–11, 1996.
- Invitation to: AMLI’96 Conference, Nijmegen, The Netherlands, June 13–15, 1996
- Third Conference on Curves and Surfaces, Chamonix, France, June 27–July 3, 1996
- Invitation to: Advances in Computational Mathematics, Huddersfield, England, July 22–24, 1996
- Invitation to: Seventh International Colloquium on Differential Equations, Plovdiv, Bulgaria, Aug. 18–23, 1996
- Fifth European Multigrid Conference, Stuttgart, Germany, Oct. 1–4, 1996
- Ist Workshop on Large Scale Scientific Computations, Varna, Bulgarien, 7.6.–11.6., 1997
- Prism ‘97, Preconditioned Iterative Solution Methods for Large Scale Problems in Scientific Computations, 27.–29.5. 1997
- Chemnitzer FEM–Symposium: Parallele Algorithmen in der Festkörpermechanik, Sep 1. – 3., 1997
- GAMM Conference 1998, 5.4.–9.4. 1998, Bremen.
- Invitation to: International Conference on Approximation Theory and Harmonic Analysis, Tula, Russia, May 26–29, 1998.
- Conference on CAGD and Wavelet Methods, Montecatini, June 15 – 17, 1998.
- Invitation to: International Workshop on Self–Similar Systems, Dubna, July 30 – Aug. 7, 1998
- Invitation to: Workshop on Multivariate Approximation and Interpolation with Applications in CAGD, Eilat, Sept. 7–11, 1998
- Invitation to: International Conference on Multivariate Approximation, Bommerholz, Sep. 28 – Oct. 2, 1998.
- 1998 Conference of Dutch Numerical Mathematicians, Woudschoten, Netherlands, 23 - 25 September 1998
- Invitation to: Workshop on Wavelets and Applications, Sept. 28 – Oct. 2 1998, Monte Verita, Ascona, Ticino, Switzerland.
- International Conference on Multivariate Approximation, Bommerholz, Germany, Sep. 27–Oct. 2, 1998.
- FoCM Workshop “Wavelets and Multiresolution”, Nov 29 – Dec 3, 1999, City University of Hong Kong.

- Annual Dutch Mathematical Conference, Maastricht, April 27 – 28, 2000.
- Invitation to: Third World Congress of Nonlinear Analysts, Catania, July 19 – 26, 2000, Sicily.
- Invitation to: “Alhambra 2000 Conference”, Granada, July 3 – 7, 2000.
- Invitation to dd13 - 13th International Conference on Domain Decomposition Methods, Oct. 9–12, 2000, Lyon, France
- Invitation to: International Conference of Computational Harmonic Analysis, June 4–8, 2001, Hong Kong
- Invitation to: Optimization of finite-element approximations, splines and wavelets June 25–29, 2001, Saint–Petersburg, Russia
- Invitation to: Armenian conference, Sep. 11 – 18, 2001, Armenia.
- Invitation to: International Conference on Abstract and Applied Analysis to be held in Hanoi from 13 to 17 August, 2002.
- Invitation to the BMBF workshop on “Boundary Element Methods - Modern Algorithms and Industrial Applications”, September 30 - October 2, 2002 at Wissenschaftlichen Kolloquienzentrum Spelzenklamm, Homburg/ Einoed, Germany.
- Invitation to the “International Conference on Abstract and Applied Analysis”, Hanoi, Vietnam, Aug 12 – 17, 2002.
- MULTISCALE MODELLING, MULTIREOLUTION AND ADAPTIVITY, 7 April - 11 April 2003, in association with the Newton Institute programme entitled “Computational Challenges in Partial Differential Equations” (20 January - 4 July 2003)
- Invitation to: Durham Summer school in computational mathematics and scientific computing, July 2004. (11th EPSRC Summer school in Computational Mathematics and Scientific Computing, to be held at the University of Durham, England in July 2004.)
- Invitation to the MGA Workshop II: “Multiscale Geometry in Scientific Computing” and Workshop II Satellite Workshop: IPAM, “Search and Matching in High Dimensions”
- Invitation to “IPSI-2004k at the mountain Kopaonik”, Serbia, April 1 – 4, 2004.
- International Conference on “Wavelet Theory and Applications”, Singapore, August 9 – 13, 2004.
- “Third International Conference on Boundary Integral Methods: Theory and Applications”, Reading, UK, Sep. 14 – 18, 2004.
- “Approximation and Probability Conference on the occasion of the 70th anniversary of Professor Zbigniew Ciesielski” Bedlewo, Poland, 20-24 September 2004

- Invitation to the biannual meeting of Japanese Mathematical Society to be held in Hokkaido from September 19 to 22, 2004
- Invitation to the Second International Conference on “Abstract and Applied Analysis”, the first International Summer School on “Harmonic, Wavelet, p-adic Analysis” (including Oscillatory Integrals, Nonlinear Analysis and Pseudoconvexity), organized at Qui Nhon University, Vietnam , June 4.-9., 10 - 15., 2005.
- Special Semester at the ESI (Erwin Schroedinger Institute), Vienna, June 5 - 9, 2005.
- ENUMATH 2005, Santiago de Compostela, July 18 - 22, 2005.
- 1. German-Chinese Workshop on Computational Mathematics, Berlin, Sep. 5 - 10, 2005.
- International Workshop on Meshfree Methods, University of Bonn, Sep. 12 - 14, 2005.
- invitation to WAVE2006 - Wavelets at EPFL 2006, Lausanne, Switzerland, July 10 - 14, 2006
- invitation to: Annual International Conference “Days on Diffraction” St.Petersburg, Russia May 30 - June 2, 2006.
- Fast Numerical Solution of Partial Differential Equations, Utrecht, the Netherlands, December 20-22, 2005.
- invitation to: International Symposium “Mathematical Methods in Engineering”, Cankaya University, Ankara, Turkey, April 27-29, 2006.
- Sixth International Conference on Curves and Surfaces Organised by SMAI-AFA Avignon, June 29th to July 5th, 2006.
- International Conference on Mathematical Analysis and Its Applications ICMAA 2006, Assiut (Egypt), January 3-6, 2006.
- Abel Symposium 2006, Norway, May 24-27, 2006.
- Invitation to: “Analysis and Applications”, June 28-30, 2006, University of Science and Technology of China, Hefei, China.
- Invitation to: ”Computational Aspects of Stochastic Partial Differential Equations”, Salzburg, Austria (2006) 17th September until Thursday the 22nd September
- The International Conference On Spectral and High Order Methods (ICOSAHOM), June 18-22, 2007.
- International conference in Bath: “Numerical Analysis: multiscale methods, adaptivity and complexity”, Sept. 2, - 6, 2007.
- Invitation to: Domain Decomposition (DD18), Jerusalem January 12 - 17, 2008.

- Invitation to: 4-th International Conference ” Harmonic analysis and Approximations” in September 19-26, 2008, Thakadzor, Armenia.
- Invitation to: Workshop on Multiscale Modelling, Durham University, March 17–18, 2008.
- Invitation to: “ Chinese-French-Singaporean Joint Workshop on Wavelet Theory and Applications, 9–13 Jun 2008 at the Institute for Mathematical Sciences (IMS), National University of Singapore NUS, Singapore.
- Invitation to: CTAC’08, the 14th Biennial Computational Techniques and Applications Conference, 13-16th July 2008 at the Australian National University.
- Dagstuhl-Seminar “Structured Decompositions and Efficient Algorithms”, Dagstuhl, 30.11.2008 - 05.12.2008.
- Invitation to: “Multiresolution and adaptive methods for convection dominated problems, Paris, Jan 22–23, 2009.
- Dagstuhl-Seminar “Structured Decompositions and Efficient Algorithms” Nov. 30. – Dec. 05. 2008.
- Acatech Symposium: “Produktionsfaktor Mathematik”, 10.11.2008, Berlin.
- Multi-Manifold Data Modeling and Applications, IMA Workshop, Oct. 26 – Oct 30, 2008, Minneapolis, USA.
- SIAM Southeastern-Atlantic Section 2009 annual meeting, April 4-5, 2009, Columbia, South Carolina, USA.
- 50th Birthtday of the Journal “Numerische Mathematik”, June 16, TU Munich.
- Invitation to: 19th International Conference on Domain Decomposition Methods (DD19) to be held at Zhangjiajie, China, August 17-22, 2009.
- Invitation to: Conference on Wavelets and Applications, June 2009, St. Petersburg, Russia.
- Invitation to: 8th European Conference on Numerical Mathematics and Advanced Applications (ENUMATH) in Uppsala, Sweden, in June 29 -July 03, 2009.
- Invitation to: Trilateral Scientific Seminar “Separation of variables and applications”, September 6-12, 2010, Nice (Mandelieu), France.
- Invitation to: “Distinguished Lectures on Frontier of Computational Mathematics”, Aug. 2010, Zhongshan (Sun Yat-sen) University in Guangzhou.
- 54th Annual Conference of the Australian Mathematical Society, at the University of Queensland, Brisbane, on 27-30 September 2010.
- Workshop “Sparsity and Computation”, Hausdorff Center for Mathematics, University of Bonn, Germany, on June 7-11, 2010.

- Eighth International Conference of Numerical Analysis and Applied Mathematics 2010 (ICNAAM 2010), (19-25/9/2010), Rhodes, Greece.
- IMA workshop on Numerical Solutions of Partial Differential Equations: Novel Discretization Techniques, 01.11.-06.11, 2010, University of Minnesota, Minneapolis, USA.
- Invitation to FOURTH INTERNATIONAL CONFERENCE ON COMPUTATIONAL HARMONIC ANALYSIS at City University of Hong Kong scheduled for May 23 through 27, 2011.
- Invitation to: 5th International Conference "Harmonic analysis and Approximations" in September 10-17, 2011, Thakadzor, Armenia.
- International Conference on Domain Decomposition DD20, San Diego, USA, February, 7 – 11, 2011.
- International Symposium in Approximation Theory, May 17–21, 2011, Nashville, Tennessee, USA.
- International Conference on Simulation Technology (ICST 2011), Stuttgart, June 14–17., 2011.
- Invitation to: International Conference on Numerical Analysis & Optimization Theory and Applications, Dec. 17 – 22, 2011, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia.
- Gauß-Vorlesung der DMV, Mainz, Oct. 28.20011
- Approximation Theory Conference, Jan 04-07, 2012, Ein Gedi, Israel.
- Invitation to: The international conference "Wavelets and Applications", at the Euler International Mathematical Institute, July 8-15, 2012, St. Petersburg, Russia.
- Invitation to: Numerical Analysis of Multiscale Problems & Stochastic Modelling, Linz, Dec.12-16, 2011.
- Invitation to: ICREA Conference on Approximation Theory and Fourier Analysis, Centre de Recerca Matemàtica, Barcelona, December 12-16, 2011.
- Invitation to: 1st Annual World Congress of Emerging InfoTech-2012 (WCEIT-2012), August 28-30, 2012, Dalian, China.
- Invitation to: International Conference "Mathematics in our changing world How visions shape reality", 25.9.-27.9.2012, Berlin.
- Invitation to the workshop: SIGMA 2012, November, 19-23, 2012, Centre International de Rencontres Mathématiques 163 avenue de Luminy, Case 916, F-13288 Marseille - Cedex 9
- Invitation to "10th International Conference on Sampling Theory and Applications (SampTA 2013)", July 1st-5th, 2013, Jacobs University Bremen, Germany.

- Invitation to: International Conference on Numerical Analysis and Scientific Computations with Applications, 17-18-19 June 2013 at the University of the “Littoral Cote d’Opal” Calais, France.
- “Sparse Representation of Functions: Analytic and Computational Aspects”, TU-Berlin, December 10 - December 14, 2012.
- International Conference for Applied Mathematics, ICAM2013, September 16-20, Heraklion, Crete.
- Numerical Analysis and Scientific Computing, Max-Planck Institute Leipzig, Oct. 28-30, 2013.
- Invitation to: “Nonlinear Approximations and Applications”, Moscow, Oct. 29–Nov. 1, 2013.
- Workshop on “Least Squares and DPG Methods”, University of Austin, Texas, Nov. 4-5, 2013.
- Conference on “Analysis and numerical approximation of PDEs” at ETH Zurich, September 8 – 10, 2014.
- Workshop: “Approximation, Integration, and Optimization”, ICERM, Sep. 29 – Oct 3, 2014.
- Workshop: “Numerical methods for high-dimensional problems”, Ecole des Ponts Paristech, Marne-La-Vallée, April 14th to 18th 2014.
- “Royal Society International Scientific Seminar workshop” “Computations in infinite dimensions: challenges in a continuous world”, Kavli Royal Society International Centre at Chicheley Hall, 30 June - 1 July, 2014.
- “Numerical Analysis for Partial Differential Equations”, University of Sussex, UK, June 18–20, 2014.
- Invitation to the international conference “Applied Mathematics and Approximation Theory 2015”, Ankara, Turkey, May 28–31, 2015.
- ICERM’s semester workshop “Approximation, Integration, and Optimization” September 29 – October 3, 2014, Brown University, USA.
- Invitation to the 2015 SIAM Conference on Computational Science and Engineering (CSE15) Salt Lake City, Utah, USA, from Saturday, March 14, to Wednesday, March 18, 2015.
- Invitation to: International Conference on Wavelets, June18–23, 2015, St. Petersburg, Russia.
- Invitation to the conference: “ Information-based Complexity”, April 26, 2015 to May 2, 2015, Mathematical Research and Conference Center in Bedlewo, Poland,
- More than 40 invitations to Oberwolfach meetings

Lecture Series:

- Department of Mathematics, Dalian Technical University, China, August 1988 (3 lectures).
- Department of Mathematics, University of Guangzhou, China, September 1988 (3 lectures).
- Instructional Conference on Computational Methods and Finite Element Methods, Inira Ghandi Open National University, New Delhi, India, Oct 21– Nov 02, 92 (7 lectures).
- Frontier Lecture Series in Mathematics, Department of Mathematics, Texas A& M University, College Station, Texas, Feb 20– Feb 26, 94 (3 lectures),
- EPSRC – LMS Instructional Short Course on Wavelets, Lancaster, England, July 20th – 26th, 1997 (7 lectures).
- University of Chemnitz, December 1997, January 1998 (4 lectures).
- Summer School on Multiscale Methods for PDEs (ERASMUS) , Luminy, Marseille, June 1998, (6 lectures).
- Borel Seminar, University of Bern, June 1998 (2 lectures).
- Minicourse on Multilevel/Multiscale Methods, ETH Zürich, June 28 – July 10, 1998, (2 lectures).
- CIME course “Multiscale Problems and Methods in Numerical Simulation”, Sept 9 – 15, 2001, Martina Franca, Italy
- LMS Course, University of Cambridge, March 2002, England
- 32nd CFD Lecture Series of the von Karman Institute, Brussels, Sep 9–13, 2002.
- Special Lecture Series, Penn State University, Nov. 2004.
- Invitation to Lecture series at the “BIRS Workshop on adaptive wavelet and multi-scale methods for PDEs” ., June 3 – 5, 2004.
- Invitation to the 11th EPSRC Summer school in Computational Mathematics and Scientific Computing, to be held at the University of Durham, England in July 2004.
- Lecture Series on “Adaptive Wavelet methods for Boundary Integral Equations”, Zurich Summer School (ETH Zürich/University of Zürich), “Advanced Methods for integral operator”, Sep. 6 – 9, 2004.

Textbook: W. Dahmen, A. Reusken, Numerik für Ingenieure und Naturwissenschaftler, Springer-Lehrbuch ISSN 0937-7433, ISBN 978-3-540-76492-2 Springer-Verlag, Berlin-Heidelberg, 2005, 2nd edition 2008.

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3. (with E. Görlich) Best approximation with exponential error orders and intermediate spaces, *Math. Z.*, **148** (1976), 7-21.
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9. (with K. Scherer) Best approximation with piecewise polynomials with variable knots and degrees, *J. Approx. Theory*, **26** (1979), 1-13.
10. Multivariate B -splines - recurrence relations and linear combinations of truncated powers, in: *Multivariate Approximation Theory*, ed. by W. Schempp, K. Zeller, Birkhäuser, Basel, (1979), 64-82.
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