

Curriculum Vitae KARLHEINZ GRÖCHENIG

Title: Mag. Dr. rer. nat.

Date and Place of Birth: Febr. 6, 1959, Feldkirch, Austria

Nationality: Austria

Affiliation: Faculty of Mathematics, University of Vienna,
Nordbergstrasse 15, A-1090 Vienna.
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Education: M. S. 1983, University of Vienna
Ph. D. 1985, University of Vienna

Academic Positions:

March 2006 – Professor, Faculty of Mathematics, University of Vienna
2005 – 2009 European Center for Time-Frequency Analysis
University of Vienna, Austria
2004 – 2005 Institute of Biomathematics and Biometry, GSF – National Research
Center for Environment and Health, Munich, Germany
1998 – 2004 Professor, Department of Mathematics, University of Connecticut
2000 – 2002 Visiting Professor, Department of Mathematics, University of Vienna
1993 – 1998 Associate Professor, Department of Mathematics, Univ. of Connecticut
1988 – 1993 Assistant Professor, Department of Mathematics, Univ. of Connecticut
1987 – 1988 Postdoctoral fellow, McMaster University, Hamilton, Ontario.
1985 – 1987 Research assistant, Department of Mathematics, Univ. of Vienna

Honors:

2004 Marie-Curie Excellence Award, European Union, FP6-program
1999 NSF Panel in analysis
1986/87 Ludwig-Wittgenstein research fellow (FFG – Austrian Research Promotion Agency)
1985 Ph. D. graduation sub auspiciis praesidentis

Patent: US patent N0: US 7, 496, 619 B2 “System and methods of nonuniform data sampling and data reconstruction in shift-invariant and wavelet spaces”

Research Grants and Project Experience:

2010 – 2013 “Frames and Harmonic Analysis” (Austrian Science Foundation FWF)
2008 – 2011 National Research Network “Signal and Information Processing
in Science and Engineering”, project part (Austrian Science Foundation FWF)
2005 – 09 Marie-Curie Excellence grant “European Center of
Time-Frequency Analysis” (1.800.000 Euro)
2005 – 08 WWTF grant “Modern Harmonic Analysis Methods
for Advanced Wireless Communications” (500.000 Euro)

2000 – 03 FWF grant “Operator theory and time-frequency analysis”
1993 – 96 NSF grant “Problems in wavelet and sampling theory”, USA.
1990 – 93 DARPA grant “Multidimensional wavelet representations”, USA.

Visiting Professorships.

University of Torino and Politecnico Torino (2003, 2 weeks)
University of Heidelberg (2 weeks in 2000 and in 2003)
University of Buenos Aires, Argentina (2000, 1 month)
University of Rennes (1999, 3 weeks; 1994, 2 months)
Vanderbilt University, Nashville, TN (1998, 1 semester,)
University of Vienna (1995, 1 semester)
University Paris-Dauphine (1994, 6 weeks)

Editorships

Executive Editor “Journal of Fourier Analysis and Applications” (since 2004)
Editor-in-Chief “Sampling Theory in Signal and Image Processing” (since 2005)
Associate Editor “Constructive Approximation” (since 2006)
Associate Editor “Applied and Computational Harmonic Analysis” (since 2005)
Associate Editor “Monatshefte für Mathematik” (since 2007)
Associate Editor “International Journal of Wavelets, Multiresolution and Information Processing” (IJWMIP) and “Journal of Applied Functional Analysis” (JAFA)
Guest Editor of Special Issue “Sampling and Frames in Wavelet Theory and Time-Frequency Analysis” in IJWMIP (International Journal of Wavelets, Multiresolution and Information Processing), 2004
Guest Editor of Special Issue on “Modulation Spaces” in STSIP, 2005

Organization of Conferences

“From abstract to computational harmonic analysis, Strobl 2011, Main organizer.
“Time-Frequency Methods”, Strobl 2009, organizer.
SampTA 2009, Marseille, program committee
“Trends in harmonic analysis”, Strobl, 2007, organizer.
BIRS workshop (Banff International Research Station) “Time-Frequency Analysis and Nonstationary Filtering”, Fall 2005, co-organizer
Special Semester on “Modern Methods of Time-Frequency Analysis” at the Erwin Schrödinger Institute, Vienna, Spring 2005, main organizer
“International Conference on Modern Methods of Time-Frequency Analysis”, Strobl, May 2005, main organizer
Mini Gabor Workshop, January 2005, Vienna, co-organizer
“Third Gabor Workshop” in Vienna”, 2004, co-organizer
SampTA2003 (Sampling Theory and Applications), Strobl, Austria, co-organizer
“Second International Gabor Workshop in Vienna”, 2001, co-organizer

Refereeing Activity: Acta Math., Adv. Math., Ann. Math., Appl. Comp. Harm. Anal., Constr. Approx., Duke J. Math., Found. Comp. Math., Intern. J. Math., Int. Math. Research Notes, J. Amer. Math. Soc., J. Approx. Theory, J. Fourier Anal. Appl., J. Functional Anal., Math. Nachr., Math. Z., Proc. Amer. Math. Soc., Revista Mat. Iberoam., Rocky Mountain J. Math., Samp. Theory Signal Image Proc., SIAM J. Math. Anal.,

Trans. Amer. Math. Soc.,

Adv. Comp. Anal., App. Math. Letters, IEEE Signal Proc., IEEE Trans. Inform. Theory, J. Appl. Funct. Anal., J. Math. Phys.

Field of Specialization: Harmonic analysis, wavelet theory, time-frequency analysis, Gabor theory, algorithms for (non-uniform) sampling and reconstruction methods, pseudodifferential operators, Banach algebras, mathematical problems in wireless communications.

Ph. D. Students:

Hajanirina Razafinjatovo (1994)

Salti Samarah (1997)

Josip Derado (1998)

Eugen Galperin (1999)

Andreas Klotz (2010)

Selected Talks:

Oberwolfach conferences in 1992, 1995, 2002, 2004, 2007

Workshops at the Banff International Research Station, Canada in 2005, 2006, 2009

Conference on “Wavelets and Fractals”, Pittsburgh, May 94, invited speaker.

Conference on “Space filling structures”, invited speaker, Centre de Physique, Les Houches, January 1995.

“Sampling Theory and Applications 1997”, Aveiro, Portugal, June 1997, invited speaker.

“Spectral Methods in Medical Image Processing”, GSF, Munich, February 1998, invited speaker.

Newton Institute, Cambridge, England, Workshop on Gabor Theory, August 1998.

International Conference on “Curves and Surfaces”, Saint-Malo, France, July 1999, invited speaker for session on “Nonlinear Methods”.

Conference “Foundations of Computational Mathematics”, Minneapolis, August 2002,

International Conference on “Computational Harmonic Analysis”: keynote speaker, Nashville, May 2004.

International Conference on “Wavelet Theory and Applications: New Directions and Challenges”, invited speaker, Singapore, August 2004.

SampTA05 (Sampling Theory and Applications), “Nonuniform sampling in shift-invariant spaces”, invited speaker, Samsun, Turkey, July 2005.

Conference “Recent Progress in Wavelet and Frame Theory”, invited speaker, Bremen, January 2006

Pacific Institute for the Mathematical Sciences, anniversary colloquium, University of Calgary, December 2006.

von Neumann Symposium 2007 of the AMS, invited speaker, Snowbird, Utah, July 2007

Conference “Pseudodifferential operators and Applications”, Växjö, Sweden, plenary speaker, June 2008.

“Wiener’s Lemma: Theme and Variations”, workshop on “Harmonic Analysis: from Foundations to the Real World” at Institute for Science and Technology Austria (ISTA),

September 2009.

“Algebras of infinite matrices with off-diagonal decay”, plenary speaker, Meeting of Mathematical Society of Japan, Osaka, September 2009.

“The range of localization operators and lifting properties of modulation spaces”, Workshop on “Harmonic analysis and partial differential equations”, Göttingen, June 2010.

“Gabor frames and complex analysis”, plenary speaker, “New trends in harmonic and complex analysis, Bremen, July 2010.

Minicourses at Summer school of Univ. of Jena, Univ. of Buenos Aires, Sept. 2000, in Hongkong, July 2001, University of Osaka, Japan, November 2002, Politecnico Torino, Italy, University of Heidelberg, July 2003 (6 hours), at Fields Institute, Toronto, December 2006, summer school in Inzell, 2007, summer school at Berlin Math. School 2008.