

Peter Balazs

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Personal data	Marital status: married Nationality: Austrian Date of Birth : 11.12. 1970 Compulsory military service completed 1989-1990
Education	1989 Graduation from the grammar school BG/BRG Tulln (with a special emphasis on informatics) 1990 started studying mathematics and physics (for teaching) at Vienna University 1992 started studying (scientific) mathematics 2001 MSc in (scientific) mathematics with distinction 2005 PhD (mathematics) with distinction.
Employment	1985 – 2001: During school and studies: giving private lessons and working on archaeological excavations. 1999 – 2003: Software Developer at the Acoustics Research Institute (ARI) of the Austrian Academy of Science. (Programming: C++, MFC, XML; Design: user interfaces, data bank, algorithms), ancillary scientific services, occasional hardware and network maintenance. 2002 – 2003: working full-time at the ARI and (apart from the above) doing also scientific services (development of the mathematical background of signal processing algorithms) at the ARI. 2003 - 2004: (November 2004 – April 2004) working at the LAMP, University de Provence and the LMA, CNRS Marseille, <i>France</i> , with the European Union Network HASSIP . 2003 – now: working fully scientifically at the ARI as mathematician. 2005: (August) working at the FYMA, UCL Louvain-la-Neuve, Belgium 2006: (March, May and June) working at the LAMP, University de Provence and the LMA, CNRS Marseille, <i>France</i> , with the European Union Network HASSIP
Grants / Fellowship/ Awards	2003/2004: HASSIP fellowship (EU Research Training Network): Marseille (France) 2003: “Stipendium für kurzfristiges wissenschaftliches Arbeiten” (grant of the University Of Vienna for scientific work abroad) 2004: “Top-Stipendium des Landes Niederösterreich” (grant from Lower Austria for best students) 2005: HASSIP fellowship: Louvain-la-Neuve (Belgium) 2005: Leistungsstipendium der Universität Wien (grant from the University of Vienna for best students) 2006: HASSIP fellowship: Marseille (France) 2006: mentioned in “ <i>Who-is-who in Österreich</i> ”
Organisation/ Management:	2005: Organisation of the international workshop “ <i>HASSIP workshop: Application Of Time Frequency Analysis In Acoustics</i> ”, April 26 to 29, 2005, Acoustics Research Institute, Vienna. 2006/2007: project leader of the WTZ project (AMADEUS) ‘ <i>Zeit-Frequenz Darstellungen und auditorische Wahrnehmung</i> ’ (Time-Frequency Representation and Perception), cooperation with the LMA, CNRS Marseille.

Scientific Memberships

IEEE Member (*Signal Processing Society*),
NuHAG member.

Reviewer

Journal , *Applied and Computational Harmonic Analysis*'

Teaching

2005: , *Repetitorium zu Lineare Algebra und Geometrie I*' (Universität Wien, Fakultät für Mathematik)

Publications

Theses:

- "*Polynome über Gruppen*" (polynomials over groups) ; Diplomarbeit Universität Wien ; Master Thesis (2001)
- "*Regular and irregular Gabor frame multipliers with application to psychoacoustical masking*"; PhD thesis (2005)

Publications in Journals:

- P. Balazs, H.G. Feichtinger, M. Hampejs, G. Kracher; "*Double Preconditioning for Gabor Frames*"; accepted IEEE Trans. Sign. Proc. (2006)
- W. Kreuzer, P. Balazs, H. Waubke, "*A stochastic 2D-model for calculating vibrations in liquids and soils*", submitted (2005)
- P. Balazs, "*Bessel, Frame and Riesz Multipliers*", J. Math. Anal. Appl. (2006, in press)
- P. Balazs, "*Matrix Representation of Operators Using Frames*", submitted (2006)

Publications at Conferences (with proceedings):

- P. Balazs, A. Noll, W.A.Deutsch, B.Laback; "*Concept of the integrated signal analysis software system STX*"; ÖPG 2000
- P. Balazs, H. Waubke, W.A. Deutsch; "*Phasenanalyse mit akustischen Anwendungsbeispielen*"; DAGA 2003
- H. Waubke, P. Balazs; "*Verwendung der zeitliche Rücktransformation zur Berücksichtigung der Kausalität in Spektren mehrdimensionaler Fourier Transformationen*"; DAGA 2003
- H. Waubke, P. Balazs, B. Gilge, W. Kreuzer; "*Waves in Random Layers with Arbitrary Covariance Functions*", 12th International Congress on Sound and Vibration, Lisbon , (2005)

Publications at Conferences (with published abstracts):

Many presentations at conference and workshops with published abstracts. As an example in the last year (2005):

- P. Balazs, H.G. Feichtinger, M. Hampejs, G. Kracher; "*Double Preconditioning of the Gabor Frame Operator*", HASSIP Workshop 'Application Of Time Frequency Analysis In Acoustics', April 26 to 29, 2005
- P. Balazs, "*Double Preconditioning for Gabor Frames*", ESI05: Special Semester "Modern Methods of Time-Frequency Analysis", Fourth Workshop on "Noncommutative Computational Harmonic Analysis", Monday, July 4. - Thursday, July 7. 2005
- P. Balazs, "*Gabor Multipliers with Application to Psychoacoustics*", Workshop on "Time-frequency analysis and nonstationary filtering" at the Banff International Research Station (BIRS), Saturday, September 24. - Thursday, September 29. 2005

Posters:

- P. Balazs, A. Noll; "*Masking filter, phase vocoder and STX – an introduction*"; SAMPTA 2003
- W.A. Deutsch, S. Moosmüller, A. Noll, P. Balazs & J. White; "*What is S_Tools-STx? PC based Software Package for Intelligent Sound Processing,,*"; Eurospeech 2003
- P. Balazs; "*Regular And Irregular Gabor Multipliers With Application To Psychoacoustic Masking*" Modern Methods of Time-Frequency Analysis, Strobl, Austria (2005)

Others:

- P. Balazs, W. A. Deutsch, A. Noll, J. Rennison, J. White, *STx Programmer Guide*, Version: 3.6.2, http://www.kfs.oeaw.ac.at/software/stx_manual/programmerguide/Programmer%20Guide.pdf (2005)
- A. Noll, W. A. Deutsch, Balazs, P. & J. White ; "*Intelligent Sound Processing S_TOOLS - STX User's Guide*" ; Acoustics Research Institute, Austrian Academy of Sciences Vienna. (2001)

Presentations / Talks: Many talks and presentations at conference and workshops. As an example in the last year (2005):

- "Double Preconditioning for the Gabor Frame Operator", Mini Gabor-workshop Vienna, January 2005
- "Regular And Irregular Gabor Multipliers With Application To Psychoacoustic Masking", Defensio, Juni 2005
- "Regular And Irregular Gabor Multipliers With Application To Psychoacoustic Masking", Mitarbeiter-Evaluation , Juni 2005
- "Gabor Multipliers With Application To Psychoacoustic Masking", at the LMA, CNRS Marseille, November 2005

Special skills / memberships

Computer: vast knowledge due to school and university education, working experience and private interest:

- Applications:
working experience: Microsoft (Office, Visual Studio), Matlab;
good knowledge: Maple, MathCad, statistics (SPSS) and many more
- Operating systems:
working experience: DOS, Windows (all),
basic knowledge of Unix
- Programming languages:
working experience: C++ (plus MFC),
good knowledge: Visual Basic, Java,
basic knowledge of Fortran, assembler and others
- working experience with HTML, XML and TeX

Kunstwerkstatt Tulln: commitment to this art-club for years (1988-1996). For one year (1996) president.

Ravens Tulln: commitment to this baseball club for years (1999-now), member of the board (2000-2005), team player.

Manual Skills: wooden floor installation, wall repairs, plastering, ancillary electrical and network installation.

Experience as sound and light engineer

Languages

German: native tongue
English: fluent
Russian: 4 years at high school
French: very basic knowledge

Other hobbies and interests

Music: playing the drums
Sport: baseball, skiing, sailing
Games: of all kinds, especially computer, roleplaying and card games