

Paweł Bechler

Curriculum vitae

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Personal data

E-mail: P.Bechler@mimuw.edu.pl
Web page: <http://www.mimuw.edu.pl/~pbechler>
Year of birth: 1975
Citizenship: Polish

Mathematical interests

approximation theory, frames and wavelets, function spaces, harmonic analysis.

Degrees

- Ph.D. Degree in Mathematics (2006) with specialization in *Approximation Theory*, Institute of Mathematics of the Polish Academy of Sciences.
 - M.Sc. Degree in Mathematics (2001), diploma with distinction, Faculty of Mathematics, Informatics and Mechanics, University of Warsaw.
 - M.A. Degree in English Studies (1999), diploma with distinction, Faculty of Modern Languages, University of Warsaw.
 - Matura (Polish Secondary School Certificate) (1994)
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Positions

- Since October 2007: Assistant Professor at the Institute of Applied Mathematics, Faculty of Mathematics, Informatics and Mechanics, University of Warsaw.
- September 2006: Post-doctoral Research fellow in NuHAG (Numerical Harmonic Analysis Group), University of Vienna, in the frame of the EU research programme HASSIP (Harmonic Analysis for Statistical Signal and Image Processing).
- October 2005 - September 2007: Instructor at the Institute of Applied Mathematics, Faculty of Mathematics, Informatics and Mechanics, University of Warsaw.
- June 2005: Doctoral Research fellow in NuHAG (Numerical Harmonic Analysis Group), University of Vienna, in the frame of the EU research programme HASSIP (Harmonic Analysis for Statistical Signal and Image Processing).
- October 2001 - September 2005: Doctoral fellow at the Institute of Mathematics of the Polish Academy of Sciences.

Fellowships

- 2003-2006: Stipend funded from the Academic Grant of Prof. P. Wojtaszczyk awarded by the Foundation for Polish Science.
- 2001-2005: Doctoral fellowship at the Institute of Mathematics of the Polish Academy of Sciences.
- 1995-2001: Academic stipend of the University of Warsaw for high grade average.

Participation in funded research projects

- To commence in Q3 2008: *Efficient approximation of functions*, KBN project registered under the no. N201 269 335. Project director: Prof. P. Wojtaszczyk.
- 2003-2005: *Efficient representation of functions*, U.S. National Research Council New Investigators Twinning Program 2003-2004. Director: Guergana Petrova (head), other participants: Ronald A. DeVore, Przemysław Wojtaszczyk, Anna Kamont.

Scientific publications

Journal Papers (authors in alphabetical order):

- P. Bechler, *Wavelet approximation of distributions with bounded variation derivatives*, accepted for publication in J. Fourier Anal. Appl., 2008.
- P. Bechler, R. DeVore, A. Kamont, G. Petrova, P. Wojtaszczyk, *Greedy wavelet projections are bounded on BV*, Trans. Amer. Math. Soc 359 (2007), no. 2, 619-635.
- P. Bechler, *Inequivalence of wavelet systems in $L_1(\mathbb{R}^d)$ and $BV(\mathbb{R}^d)$* , Bull. Polon. Acad. Sci. Math. 53 (2005), no. 1, 25-37.
- P. Bechler, *Lebesgue constant for the Strömberg wavelet*, J. Approx. Theory 122 (2003), no. 1, 13-23.

Theses:

- P. Bechler, *Nonlinear wavelet approximation in BV-type spaces* (Polish), Ph.D. Thesis, Inst. of Mathematics of the Polish Acad. of Sciences, 2006. Supervisor: Prof. Przemysław Wojtaszczyk.
- P. Bechler, *Estimates of norms of orthogonal projections onto subspaces of low order splines* (Polish), M.Sc. Thesis, Faculty of Mathematics, Informatics and Mechanics, Univ. of Warsaw, 2001. Supervisor: Prof. Przemysław Wojtaszczyk.

Translated books:

- Translation from English into Polish of the book J. Oprea, *Differential Geometry and its Applications*, Prentice Hall, 1997. Polish edition: *Geometria różniczkowa i jej zastosowania*, translated by P. Bechler, Wydawnictwo Naukowe PWN SA, 2002.

Participation in conferences and workshops (selection)

- June 2007: Trends in Harmonic Analysis, Strobl, Austria, **Talk:** *Frames and n-term approximation*.
- May 2006: Spaces of Analytic and Smooth Functions II, Będlewo, Poland. **Talk:** *Wavelet approximation of distributions of bounded higher variation*.
- September 2006: Annual HASSIP Conference, Multiscale Methods, Sparse Decompositions and Parsimonious Statistics, GSF-IBB, Muenchen, Germany. **Talk:** *Wavelet approximation of distributions with BV derivatives*.
- August 2006: Workshop in Linear Analysis and Probability: Frames, Signal Processing and Banach Spaces, Texas A&M University, College Station, Texas, USA. **Talk:** *Wavelet approximation of distributions with BV derivatives*.
- September 2005: Harmonic Analysis and Approximations III. Tsahkadzor, Armenia, **Talk:** *Inequivalence of wavelet systems in $L_1(\mathbb{R}^d)$ and $BV(\mathbb{R}^d)$* .

- July 2005: ESI Workshop *Modern Methods of Time-Frequency Analysis – Non-orthogonal Expansions and Greedy Algorithms*. Wien, Austria. **Talk:** *Non-linear wavelet approximation in BV-related spaces*.
- May 2005: Function Spaces, Approximation Theory, Nonlinear Analysis – conference dedicated to the centennial of Sergei Mikhailovich Nikolskii, Moscow, Russia. **Poster:** *Inequivalence of wavelet systems in $L_1(\mathbb{R}^d)$ and $BV(\mathbb{R}^d)$* .
- October 2004: School on Approximation, Complexity and Function Spaces, Friedrich Schiller University, Jena, Germany. **Talk:** *Greedy wavelet approximation of BV functions*.
- September 2004: Approximation and Probability. Conference on the occasion of the 70th anniversary of Professor Zbigniew Ciesielski, Bedlewo, Poland. **Talk:** *Greedy wavelet projections and the space BV*.
- September 2004: Zürich IHP Summerschool 2004: Multiscale Geometric Data Representation — Complexity, Analysis and Applications, ETH, Zurich.
- July 2003: Workshop in Linear Analysis and Probability, Texas A&M University, College Station, Texas, USA. **Talk:** *Lebesgue constant for the Strömberg Wavelet*.

Stays at recognized research centers

- September 2006: Numerical Harmonic Analysis Group, Faculty of Mathematics, University of Vienna.
- July-August 2006: Texas A&M University, College Station, Texas, USA.
- June 2005: Numerical Harmonic Analysis Group, Faculty of Mathematics, University of Vienna.
- February 2005: Texas A&M University, College Station, Texas, USA.
- September-November 2003: Industrial Mathematics Institute, University of South Carolina, Columbia, SC, USA.
- July-September 2003: Texas A&M University, College Station, Texas, USA.

Teaching

Since 2001: Tutor in courses of Mathematical Analysis, Linear Algebra, Functional Analysis, Approximation Theory, Computational Mathematics at the Faculty of Mathematics, Informatics and Mechanics, and the Faculty of Economical Sciences of the University of Warsaw.

Languages

POLISH - native language,
 ENGLISH - proficient,
 GERMAN - intermediate,
 RUSSIAN - basic knowledge.