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Curriculum vitae

Field of research: Theory of Integral operators, Approximation numbers, Theory of Function spaces and applications to PDE's.

Education:

1992-1996: PhD study at the Faculty of Mathematics and Physics at the Charles University, Prague, Czech republic, degree Doctor (PhD equivalent)

1987-1992: Faculty of Mathematics and Physics at the Charles University, Prague, Czech republic, degree Magister (MS equivalent)

Professional experience:

since 2007: Associate Prof. at the Department of Mathematics, Ohio State University

2001-2007: Assistant Prof. at the Department of Mathematics, Ohio State University

2001: Assistant Prof., Department of Math. Anal., Charles University, Prague, Czech Republic

1998-2001: Post Doct. Fellow at the Department of Mathematics, University of Missouri, Columbia, USA

1997-1998: NATO and the Royal Society Postdoctoral Fellowship at the School of Mathematics of the University of Wales, Cardiff, UK, (12 months)

1996: DAAD Scholarship at the Mathematical Institute of the University of Cologne, Cologne, Germany, (3 months)

1995-2000: Research Fellow at the Mathematical Institute of the Czech Academy of Sciences, Prague

1994-1995: External lecturer at the Department of Mathematics, Technical University, Prague

1993-1994: TEMPUS Fellowship at the University of Complutense, Madrid, Spain (9 months)

1991 : International Summer Semester at the University of Jyväskylä, Finland (1 month)

Awards and prizes:

1995: The Bolzano Prize of the Faculty of Mathematics and Physics at Charles University, Prague

1995: The Prize of the Hlávka Foundation for the best young scientists, Prague

Publishing activity: 21 published papers and 3 preprints.

List of talks:

- 2007 (June): Isaac Newton Institute at the University of Cambridge, Cambridge, UK
(series of seminar talks)
- 2007 (February): Isaac Newton Institute at the University of Cambridge, Cambridge, UK (short communication)
- 2006 (November): Real and Complex Analysis Seminar at Math. Dept. Of OSU (Columbus)
- 2006 (April): Mini-Conference on Approximation Theory at Math. Dep. of the Ohio State University, Columbus, USA
- 2005 (November): Colloquium talk, Department of Mathematics, University of Texas, El Paso, USA
- 2005 (July): EPSRC Meeting: Differential and Integral operators in L^p space, Gregynog, Wales, UK
- 2005 (July): Seminar talk at University of Sussex, Brighton, UK
- 2004 (June): Fourth World Congress of Nonlinear Analysis (WCNA-2004), Orlando, Florida
- 2003 (November): Centrum of applied math., Faculty of Applied Sciences, University of West Bohemia, Pilsen, Czech republic
- 2003 (November): The Prague seminar on function space (series of talks), Mathematical Institute of the Czech academy of Sci., Prague, Czech Republic
- 2003 (October): Analysis seminar, Department of Mathematics, Florida International University, Miami, Florida
- 2003 (September): Colloquium talk, Department of Mathematics, University of Alabama-Birmingham, Alabama
- 2003 (September): Seminar in problems of modern analysis, Department of Mathematics, Technion - Israel Institute of Technology, Haifa, Israel
- 2003 (September): Special Guest Lecture, The Weizmann Institute of Science Faculty of Mathematics and Computer Science, Rehovot, Israel
- 2003 (July): Colloquium talk, Mathematical Institute, University of Cologne, Cologne, Germany
- 2003 (July): Analysis seminar workshop, School of Mathematics, University of Wales-Cardiff, Wales, UK
- 2002 (November): AMS Sectional Meeting, Orlando, 2002, (November 9-10 2002)
- 2002 (November-December): The Ohio State University, Columbus, Unofficial Spectral theory seminars (series of talks)
- 2002 (November): Real and Complex Analysis Seminar at Math. Dep. Of OSU (Columbus)
- 2002 (July): EPSRC Workshop, Computation and Analytic Problems in Spectral Theory, Gregynog, Wales, UK (July 21-26 2002)
- 2002 (July): Analysis Seminar at the School of Mathematics, University of Sussex, Brighton, UK

2002 (May): Real and Complex Analysis Seminar at Math. Dep. Of OSU (Columbus)

2002 (May): Harmonic Analysis/Partial Differential Equations Conference at the University of Missouri-Columbia, (May 8-11 2002)

2002 (February): Real and Complex Analysis Seminar at Math. Dep. Of OSU (Columbus)

2001 (May): Annual Meeting of Italian Harmonic Anal. (invited main talk), Neaple, Italy

2001 (March): University of Kansas, Lawrence, AMS meeting, USA

2000 (November): University of Alabama, Birmingham, AMS meeting, USA

2000 (October): Department of Mathematics, University of Texas, USA

2000 (June): School of Mathematics, University of Wales, Cardiff, UK

1999 (June): International Conference on Function Spaces, Differential Operators and Nonlinear Analysis, Pudasjarvi Finland

1999 (May): Department of Mathematics, Brock University, Canada

1999 (March): International Conference on Differential Equations and Mathematical Physics, UAB, Birmingham, USA

1998 (December): Department of Mathematics, University of Missouri-Columbia, , USA

1998 (October): Department of Mathematics, UAB, Birmingham, USA

1998 (July): School of Mathematics, University of Wales, Cardiff, UK

1998 (July): Dipartimento di Matematica e Applicazioni, Universita di Napoli

1997 (October): Workshop Differential Equations, Spectral Theory, Function Spaces, Friedrich-Schiller-Universität, Jena, Germany

1996 (December): School of Mathematics, University of Wales, Cardiff, UK

1996 (May): University of Cologne, Germany

1995 (May): Conference on Function Spaces, Linzmühle, Germany

1994 (December): Friedrich-Schiller-Universität, Jena, Germany

1994 (February): University of Málaga, Spain

1994 (February): University of Complutense, Madrid, Spain

1992 (December): Friedrich-Schiller-Universität, Jena, Germany

Teaching Experience:

The Ohio State University, Columbus Campus, Marion Campus, OH (from 2001)
Undergraduate and graduate classes

University of Missouri, Columbia, MO, USA (1998-2001)
Calculus, Discrete Mathematical Structures

Charles University, Prague, Czech Republic, (2001)
Analysis, Linear Algebra

Czech Technical University, Prague, Czech Republic (1992-1996)
Calculus, Discrete Mathematics, Algebra

List of classes taught in the last three years with students evaluation:

2005 Winter Quarter

Math 950, Topic class (Singular Integrals, for PhD students only)

Math 150E, Elementary Functions, (SEI 4.8)

2005 Spring Quarter Math 116, Excursions in Mathematics, (SEI 4.3)

2005 Autumn Quarter

Math 150, Elementary Functions, (SEI 4.5)

2006 Winter Quarter

Math 150E, Elementary Functions, (SEI 5.0)

Math 151, Calculus and Analytic Geometry I, (SEI 4.8)

2006 Spring Quarter

Math 148E, Algebra and Trigonometry and Their Applications, (SEI 4.8)

Math 152, Calculus and Analytic Geometry II, (SEI 4.6)

2006 Autumn Quarter

Math 104, Basic College Mathematics, (SEI 4.6)

Math 148E, Algebra and Trigonometry and Their Applications, (SEI 4.8)

Math 151E, Calculus and Analytic Geometry I, (SEI 4.9)

2007 Winter Quarter

Math 104, Basic College Mathematics, (SEI 4.5)

Math 148E, Algebra and Trigonometry and Their Applications, (SEI 4.4)

Math 150E, Elementary Functions, (SEI 4.2)

2007 Autumn Quarter

Math 148E, Algebra and Trigonometry and Their Applications, (SEI 4.5)

Math 152, Calculus and Analytic Geometry II, (SEI 4.7)

2007 Spring Quarter

Math 863, Topic graduate class (Theory of Potentials, for PhD students only). (SEI 5.0)

Quality of my teaching has been evaluated by anonymous students' evaluation of teaching SEI, with scale 1-5.

Research Grants and participation in research grants:

Professional Development grants

OSU at Marion (2x \$1000).

Period: 2004 - 2006 Proposer: J. Lang

International Research Travel Grant

from the Office of International Affairs of OSU.

Period: 2005 - 2006 Proposer: J. Lang

Untenured Faculty Development and Research Grant OSU

Period: 2002 - 2007 Proposer: J. Lang

International Research Travel Grant

from the Office of International Affairs of OSU.

Period: 2002 - 2003 Proposer: J. Lang

Leverhulme Trust grant F/00407/E

Title: Integral operators

Period: 2001 - 2003 Proposer: W.D. Evans

Postdoctoral research grant of the Grant Agency of the Czech republic

Title: Integral operators in Banach function spaces, weight inequalities.

Period: 1998 - 2000 Proposer: Jan Lang

NATO grant, reg.no. OUTF.CRG 970 071

Title: Function spaces and weighted inequalities.

Period: 1997 - 1999 Proposer: D.E. Edmunds

Co-proposer: W.D. Evans, B. Opic, C. Sbordone, G. Talenti

Number of coworkers: 13

Royal Society grant Ref. rc/jp/nov

Title: Weighted inequalities, integral operators and embeddings.

Period: 1998 - 1999 Proposer: D.E. Edmunds

Co-proposer: B. Opic

Number of coworkers: 7

Research grant of the Grant Agency of the Czech Republic

Title: Integral operators, GA CR no. 201/96/0431

Period: 1996 - 1998 Proposer: M.Krbec

Number of coworkers: 5

List of Publications

- [1] J. Lang and A. Nekvinda, *Trace of weighted Sobolev spaces in a singular case*, Czechoslovak Math. Journal **45** (1995), 639–657.
- [2] B. Kawohl and J. Lang, *Are some optimal shape problems convex ?*, Journal of Convex Analysis **4** (1997), No. 2, 1–9.
- [3] M. Krbeč and J. Lang, *Imbeddings between weighted Orlicz–Lorentz spaces*, Georgian Math. J. **4** (1997), 117–128.
- [4] J. Lang and A. Nekvinda, *A difference between the continuous and the absolutely continuous norms in Banach function spaces*, Czechoslovak Math. Journal **47** (122), (1997), 221–232.
- [5] J. Lang and L. Pick, *The Hardy operator and the gap between L^∞ and BMO*, J. London Math. Soc. (2) **57** (1998), 196–208.
- [6] D.E. Edmunds, J. Lang and A. Nekvinda, *On $L^{p(x)}$ norms*, Proc. Roy. Soc. London Ser. A **455** (no.1982), (1999), 219–225.
- [7] W.D. Evans, D.J. Harris and J. Lang, *Two-sided estimates for the approximation numbers of Hardy-type operators in L^∞ and L^1* , Studia Math. **130** (1998), 171–192.
- [8] A. Gogatishvili and J. Lang, *The generalized Hardy operator with kernel and variable integral limits in Banach function spaces*, J. of Inequal. and Appl. **4** (1999), 1–16.
- [9] D.J. Harris and J. Lang, *Approximation numbers of Hardy-type operators on trees*, Function spaces, differential operators and nonlinear analysis (Pudasjrvi, 1999), 113–124.
- [10] W.D. Evans, D.J. Harris and J. Lang, *The approximation numbers of Hardy-type operators on trees*, J. London Math. Soc. (3) **83** (2001), no. 2, 390–418.
- [11] J. Lang, A. Nekvinda and J. Rákosník, *Continuous norm and absolutely continuous norm in Banach function spaces are not the same*, Real Anal. Exchange **26** (2000/01) no.1, 345–364.
- [12] D.E. Edmunds, R. Kerman and J. Lang, *Remainder estimates for the approximation numbers of weighted Hardy operators acting on L^2* , J. Anal. Math. **85** (2001), 225–243.
- [13] D.E. Edmunds and J. Lang, *Behaviour of the approximation numbers of a Sobolev embedding in the one-dimensional case.*, J. Funct. Anal. **206** (2004), 149–166.
- [14] J. Lang, *Improved Estimates for the Approximation Numbers of Hardy-Type Operator.*, J. Approx. Theory **121** (2003), no.1, 61–70.
- [15] J. Lang, A. Nekvinda and O. Mendez, *Asymptotic behavior of the approximation numbers of the Hardy-type operator from L^p into L^q (case $1 < p \leq q \leq 2$ or $2 \leq p \leq q < \infty$)*, Journal of Inequalities in Pure and Applied Mathematics **5** (2004), no. 1, Article 18.
- [16] J. Lang, *Estimates for n -widths of the Hardy-type operators*, J. Approx. Theory **140** (2006), 141–146.
- [17] J. Lang and O. Mendez, *Potential Techniques and Regularity of Boundary Value Problems in Exterior Non-Smooth Domains*, Potential Analysis **24** (2006), no. 4, 385–406.

- [18] D.E. Edmunds and J. Lang, *Approximation numbers and Kolmogorov widths of Hardy-type operators in a non-homogeneous case*, *Mathematische Nachrichten* **279** (2006), no. 7, 727–742.
- [19] D.E. Edmunds and J. Lang, *Operators of Hardy type*, *Journal of Computational and Applied Mathematics*, 208 (2007), 20-28.
- [20] D.E. Edmunds and J. Lang, *Bernstein widths of Hardy-type operators in a non-homogeneous case*, *Journal of Mathematical Analysis and Applications* **325** (2007), no. 2, 1060–1070.
- [21] B.M. Brown, J. Lang and R.T. Lewis, *Preface [Special issue: 65th birthday of Prof. Desmond Evans], Operators of Hardy type*, *Journal of Computational and Applied Mathematics*, **208** (2007).
- [22] D.E. Edmunds and J. Lang, *Asymptotics for Eigenvalues of a Non-Linear Integral System*, *Bollettion U.M.I, Series IX, I, No. 1*, **105–121** (2008).

Preprints

- [P1] J. Lang, A. Nekvinda and L. Pick, *Boundedness and compactness of integral operators with general kernels from a weighted Banach function space into L_∞* , preprint OSU **02-14**.
- [P2] J. Lang and V.Maz'ya, *Essential norms and localization moduli of Sobolev embeddings for general domains. (Submitted to Journal of the London Mathematical Society, 2007)*.
- [P3] J. Lang, *The best n -dimensional linear approximation of the Hardy operator and the Sobolev Classes on unit circle and on line*, preprint OSU.

Professional Services:

Co-Editor (for a special issue) of Journal of Computational and Applied Mathematics (2005, 2006)

Referee for Integral Equations and Operator Theory, (2006 x 1)

Referee for Mathematische Nachrichten, (2005 x 1)

Referee for Acta Mathematica Universitatis Comenianae, (2005 x 1)

Referee for proceedings of conference "Functions Spaces, Differential operators, Nonlinear Analysis 2004"

Referee for Journal of Mathematical Inequalities and Applications. (2004 x 1, 2003 x 1)

Referee for International Journal of Mathematics and Mathematical Sciences. (2003 x 1)

Referee for Quarterly Journal of Mathematics, (The Queen's College, Oxford) (2003 x 1)

Referee for Czechoslovak Mathematical Journal, (2003 x 1)

Reviewer for American Mathematical Society - Mathematical Reviews. (x 21)

Reviewer of proposals for U.S. Civilian Research and Development Foundation (1 x 2003, 1 x 2005)

Reviewer of proposals for Civilian Research and Development Foundation (CRDF) (1 x 2007)

Member of the organizing committee of the "Nonlinear Analysis, Function Spaces and Applications Vol. 8" (NAFSA8), Prague, Czech Republic, from May 30 to June 6, 2006.

Organizer of Special section on Structure of Function Spaces and Applications at AMS meeting in Miami, Florida, April 2006

Organizer with prof. Malcolm Brown (University of Wales) and prof. Roger Lewis (University of Alabama) of Meeting "Differential and Integral operators in L^p space", Gregynog, Wales, UK, June 2005

Unofficial Spectral theory seminars at the Columbus Campus, 2001-2 (Organized with Prof. Mityagin and Prof. Djakov.)

Member of the organizing committee of the Spring School "Nonlinear Analysis, Function Spaces and Applications Vol. 7" (NAFSA7), Prague, Czech Republic, 2002.

Administrative Services:

Department committees:

Member of the Undergraduate committee (2007/8)

Member of the Text-Book search committee for Math 150 (2005-6)

Member of the Math. search committee 2004/5

College committees:

Member of the Library committee (2002-6)

Chair of the Library committee (2005-6)

Member of the Joint Library committee (OSUM and MTC) (2005)

Member of the Elections committee (2002-6)

Member and co-organization of ad-hoc committee of regional campuses on Journals access (2005)

Member of the Chem. Search committee (2005/6, 2007/8)

Member of the Math. search committee (2004/5)

Member of the Professional Development committee (2005-6)

Member of the budget committee (2005-6)

Member of the Academic Affairs committee (2006-8)

Member of the Academic Excellence Awards committee (2006)

Serving at the Committee on Academic Misconduct (2006)