

## CURRICULUM VITAE

LUBOŠ PICK

**ORCID:** 0000-0002-3584-1454

**Born:** October 15, 1961 in Prague, Czechoslovakia

**Citizenship:** Czech Republic

**Employer:** Charles University, Prague, Czech Republic

**Position:** Professor

### Education and scientific degrees:

- 1980–1985 master study (Faculty of Mathematics and Physics, Charles University, Prague);
- 1985 RNDr. (Rerum Naturalium Doctor) in mathematics (Charles University, Prague);
- 1990 CSc. (Candidatus Scientiarum - equivalent of Ph.D.) in mathematical analysis (Mathematical Institute of the Czechoslovak Academy of Sciences, Prague);
- 2003 Docent (Associate Professor) in mathematical analysis (Charles University, Prague);
- 2004 DSc. (Doctor Scientiarum) in mathematical analysis (Academy of Sciences, Prague);
- 2009 Professor (Charles University, Prague).

### Prizes and awards:

- The Prize of the Jan Hlávka Foundation for young scientists, 1996,
- Silver Medal of the Faculty of Mathematics and Physics of the Charles University, 2011,
- Merited Member of the Union of Czech Mathematicians and Physicists, 2014,
- Golden Medal of the Faculty of Mathematics and Physics of the Charles University, 2021.

### Professional experience:

1986–1989 Ph.D. student, Mathematical Institute of the Czechoslovak Academy of Sciences in Prague (supervisor Miroslav Krbeč);

1989–1999 Research Fellow, Mathematical Institute of the Czech Academy of Sciences in Prague;

1991–1994 Research Associate, University of Wales College of Cardiff, UK;

1999–2003 Assistant Professor, Charles University, Prague;

2003–2009 Docent (Associate Professor), Charles University, Prague;

2004 Visiting International Professor, Brock University, St. Catharines, ON, Canada;

since 2009 Professor, Charles University, Prague.

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*Date:* April 29, 2024.

**Public service:**

- President of the Czech Mathematical Society (since 2018).

**Research interest:** Function spaces, inequalities, operators.

**Publishing activity:** 1 monograph, 1 lecture notes, 85 papers, 15 contributions to conference proceedings.

**Citations:**

- *Math Sci Net*: 1755 citations in 975 articles by 764 authors,
- *ISI Web of Knowledge*: 1535 citations, 1274 citations without self-citations, 813 citing articles, 756 citing articles without self-citations,
- *h-index*: 22.

**Selected invited lectures:**

- *Function Spaces and Applications*, Freyburg/Unstrut (Germany), July 6-12, 2008,
- *International Symposium on Banach and Function Spaces*, Kitakyushu, Japan, September 14-17, 2009,
- *XXVII Seminar in Differential Equations*, Bořetice, Czech Republic, May 31-June 4, 2010,
- *Inequalities and PDEs, Mate Ciche*, Poland, September 22-25, 2010,
- *Real Analysis Symposium 2010*, Kitakyushu, Japan, November 12-14 2010,
- *New trends in spectral theory and applications*, Cardiff, UK, December 18-20, 2010,
- *2nd International Workshop on Interpolation Theory, Function Spaces and Related Topics*, Santiago de Compostella, Spain, July 18-21, 2011,
- *CIDAMA 2011*, Almería, Spain, September 12-16, 2011,
- *FSDONA 2011*, Tabarz/Thüringen, Germany, September 18-24, 2011,
- *Calculus of Variations and PDEs*, Szczawnica, Poland, July 9-12, 2012,
- *International Conference on Fourier Analysis and Approximation Theory*, Bazaleti, Georgia, October 23–28, 2013,
- *46th Conference of Slovak Mathematicians*, Jasna pod Chopkom, Slovakia, November 20–23, 2014,
- *AIME@CZ - Czech workshop on applied mathematics in engineering*, Prague, Czech Republic, February 24–25, 2015,
- *Mecklenburg Workshop on Approximation Methods and Function Spaces*, Hasenwinkel, Germany, March 16–20, 2015,
- *Function Spaces and Lineability IX*, Paseky nad Jizerou, Czech Republic, May 31–June 6, 2015,
- *Workshop on Geometrical Analysis and Related Fields*, Prague, Czech Republic, February 24–25, September 18–20, 2015,
- *Third Summer School on Harmonic Analysis and PDEs*, BCAM, Bilbao, Spain, July 10–14, 2017,
- *Mathematics Colloquium*, Ohio State University, Columbus, OH, January 30, 2020,
- *Kolloquium zum 65. Geburtstag von Prof. Dr. Winfried Sickel*, Friedrich-Schiller Universität, Jena, Germany, September 18, 2020, <https://ws65.uni-jena.de/>.
- *Geometric and analytic aspects of functional variational principles*, Cetraro (Cosenza), Italy, June 27–June 1, 2022, <https://sites.google.com/unifi.it/cime/c-i-m-e-courses/c-i-m-e-courses-2022/geometric-and-analytic-aspects-of-functional-variational-principles>.
- *Function Spaces and Applications*, Apolda, Germany, October 1–7, 2022, <https://fsa2020.uni-jena.de/>.

- *Calculus of Variations: Regularity Theory and Limiting Spaces*, Konstanz, Germany, March 20–23, 2023, <https://cvgmt.sns.it/event/761/>.
- *GeoCa 23*, Horní Lysečiny - Integrál, Czech Republic, December 6–10, 2023, <https://geoca.cuni.cz/>.

#### Research grants:

- 119 54, Grant Agency of the Czechoslovak Academy of Sciences, 1992–1993 (research worker),
- 201/94/1066, Czech Science Foundation, 1994–1996 (research worker),
- CRG.930358, NATO, 1993–1996 (research worker),
- EPSRC (UK), 1995 (research worker),
- 201/97/0744, Czech Science Foundation, 1997–1999 (research worker),
- OUTR.CRG.9700071, NATO, 1997–2001 (research worker),
- EPSRC (UK), 1997 (research worker),
- rc/jp/nov, Royal Society (UK), 1998–1999 (research worker),
- F/00407/E, Leverhulme Trust Grant (UK), 2001–2003 (research worker),
- 201/01/0333, Czech Science Foundation, 2001–2003 (research worker),
- NATO grant no. PST.CLG.978798, 2002–2004 (co-investigator),
- 201/03/0935, Czech Science Foundation, 2003–2005 (research worker),
- 201/05/2033, Czech Science Foundation, 2005–2007 (research worker),
- 201/07/0388, Czech Science Foundation, 2007–2009 (research worker),
- 201/08/0383, Czech Science Foundation, 2008–2012 (principal investigator),
- P201-13-14743S, Czech Science Foundation, 2013–2017 (principal investigator),
- Danube Region Grant no. 8X17028 TIFMOFUS, 2017–2018 (principal investigator of the Czech team),
- P201-18-00580S, Czech Science Foundation, 2018–2020 (principal investigator),
- Danube Region Grant no. 8X20043 TIFREFUS, 2020–2022 (principal investigator of the Czech team),
- P202-23-04720S, Czech Science Foundation, 2023–2025 (principal investigator).

#### Teaching experience:

- external teaching, Czech Technical University, 1987–1991
- “Harmonic analysis”, Charles University, Prague, 1990–1991
- “Maths for chemists”, University of Wales, Cardiff, 1991–1994
- “Linear algebra”, “Elementary calculus” and “Advanced calculus”, Brock University, St. Catharines, 2004
- “Mathematical analysis 1–4”, Charles University, Prague, since 1999
- “Theory of interpolation”, Charles University, Prague, since 1999
- “Theory of approximation”, Charles University, Prague, since 2007
- “Banach function spaces”, Charles University, Prague, 2000–2003
- “Selected parts in functional analysis”, Charles University, Prague, 2015–2016
- “Seminar on function spaces”, Mathematical Institute, Czech Academy of Sciences and Charles University, Prague, since 1985
- “Seminar on basic properties of function spaces”, Charles University, Prague, since 2000
- “International Prague seminar on function spaces”, online, Prague, 2020–2022

#### Finished Ph.D. students:

- Jan Vybíral, 2007, currently: Czech Technical University, Prague
- Lukáš Malý, 2014, currently: Linköping University
- Filip Soudský, 2015, currently: Technical University of Liberec
- Lenka Slavíková, 2016, currently: Charles University, Prague
- Tereza Bártlová (history of mathematics), 2016, currently: Charles University, Prague
- Martin Křepela, 2017, currently: Czech Technical University, Prague
- Martin Franců, 2018
- Vít Musil, 2018, currently: Masaryk University, Brno
- Rastislav Olhava, 2019
- Zdeněk Mihula, 2022, currently: Czech Technical University, Prague
- Dalimil Peša, 2024, currently: Technische Universität Chemnitz

#### MSc. Diploma theses supervision:

- David Opěla, *Generalized Morrey and Campanato Spaces*, 2001
- Jan Vybíral, *Integral Operators on Rearrangement-Invariant Spaces*, 2002
- Luboš Dostál, *Weighted inequalities for integral operators*, 2005
- Eva Kaspříková, *Compactness of integral operators and Sobolev embeddings*, 2005
- David Pražák: *Weighted inequalities for Hardy-type operators and their application in the Interpolation Theory*, 2007
- Lukáš Malý, *Interpolation of Operators on Function Spaces*, 2008
- Eva Pernecká, *Compactness of Operators on Function Spaces*, 2010
- Martin Křepela, *Skorokompaktní vnoření prostorů funkcí*, 2011
- Miloslav Holík, *Nerovnosti pro integrální operátory*, 2011
- Rastislav Olhava, *Nové prostory funkcí*, 2011
- Filip Soudský, *Reálná teorie interpolací pomocí  $K$ -funkcionálu*, 2011
- Lenka Slavíková, *Compactness of higher-order Sobolev embeddings*, 2012
- Martin Franců, *Approximation of non-increasing rearrangement of a function*, 2012
- Petra Jirůtková, *Pokryvací věty*, 2013
- Vít Musil, *Positioning of Orlicz Space and Optimality*, 2014
- Eva Buriánková, *Behavior of one-dimensional integral operators on function spaces*, 2016
- Zdeněk Mihula, *Optimality of function spaces for classical integral operators*, 2017
- Dalimil Peša, *Amalgam Spaces*, 2019
- Jan Krejčí, *Optimality of function spaces for a weighted integral operator*, 2020
- Jakub Takáč, *Interpolation of logarithmically convex combinations of operators*, 2021
- David Kubíček, expected to defend 2024
- Tomáš Beránek, expected to defend 2025

#### BSc. theses supervision:

- Eva Pernecká, 2007
- Ján Marko, 2008
- Martin Křepela, 2009
- Miloslav Holík, 2009
- Martin Franců, 2009
- Rastislav Olhava, 2009
- Kristýna Kuncová, 2009
- Filip Soudský, 2009

- Jaroslav Dufek, 2010
- Dominik Mokriš, 2010
- Lenka Slavíková, 2010
- Jakub Marian, 2012
- Vít Musil, 2012
- Eva Buriánková, 2013
- Zdeněk Mihula, 2015
- Dalimil Peša, 2017
- Jan Krejčí, 2017
- Adam Zaplatílek, 2017
- Jakub Takáč, 2019
- Lucie Wintrová, 2022
- Pavel Berkman, 2022
- Tomáš Beránek, 2023
- Anna Kneselová, expected to defend 2024

**Participation and lectures** at conferences in Bulgaria, Canada, Czech Republic, Finland, Georgia, Germany, Hungary, Israel, Italy, Japan, Kazakhstan, Pakistan, Poland, Portugal, Russia, Slovakia, Spain, Sweden, Turkey, UK and USA.

**Organization of Conferences:**

- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 4”, Roudnice nad Labem, 1990
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 5”, Prague, 1994
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 6”, Prague, 1998
- Spring School “Function Spaces and Applications”, Paseky nad Jizerou, 1999
- Spring School “Function Spaces and Interpolation”, Paseky nad Jizerou, 2001
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 7”, Prague, 2002
- Spring School “Function Spaces and Applications”, Paseky nad Jizerou, 2003
- Spring School “Function Spaces and Applications”, Paseky nad Jizerou, 2005
- Spring School “Function Spaces and Applications”, Paseky nad Jizerou, 2007
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 8”, Prague, 2006
- Miniconference “Spaces Between Us”, Třešť, 2008
- Spring School “Function Spaces and Applications”, Paseky nad Jizerou, 2009
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 9”, Třešť, 2010
- Spring School “Function Spaces. Approximation, Inequalities and Lineability”, Paseky nad Jizerou, 2011
- Spring School “Function Spaces and Inequalities”, Paseky nad Jizerou, 2013
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 10”, Třešť, 2014
- Spring School “FSDONA (Function Spaces, Differential Operators and Nonlinear Analysis) 8”, Prague, 2016

- Spring School “Function Spaces, Embeddings and Extrapolation X”, Paseky nad Jizerou, 2017
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 11”, Prague, 2018
- Spring School “Function Spaces, Embeddings and Extrapolation XI”, Paseky nad Jizerou, 2019
- International Conference “QIND60” (Qualitative Improvement and New Dimensions), Špindlerův Mlýn, 2020
- Spring School “NAFSA (Nonlinear Analysis, Function Spaces and Applications) 12”, Prague, 2022
- International Conference “Geometric and functional inequalities, function spaces and PDEs”, Prague, 2023
- Spring School “Function Spaces and Application XII”, Paseky nad Jizerou, 2023

#### Editorial work:

- Editor of “Mathematical Inequalities and Applications” since 1997
- Editor of “Mathematica Bohemica” 2008–2013
- “Function Spaces”, proceedings of the spring school in Analysis, Paseky nad Jizerou 1999, MATFYZPRESS, Prague 1999, 120 pp, ISBN 80-85863-39-1 (jointly with Jaroslav Lukeš)
- “Function Spaces and Interpolation”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2001, MATFYZPRESS, Prague 2001, 86 pp, ISBN 80-85863-66-9 (jointly with Jaroslav Lukeš)
- “Function Spaces and Applications”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2003, MATFYZPRESS, Prague 2003, 104 pp, ISBN 80-86732-04-5 (jointly with Jaroslav Lukeš)
- “Function Spaces and Applications”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2005, MATFYZPRESS, Prague 2005, 136 pp, ISBN 80-86732-46-0 (jointly with Jaroslav Lukeš)
- “Function Spaces and Applications”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2007, MATFYZPRESS, Prague 2007, 60 pp, ISBN 80-7378-009-7 (jointly with Jaroslav Lukeš)
- “Function Spaces. Inequalities and Interpolation”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2009, MATFYZPRESS, Prague 2009, 146 pp, ISBN 978-80-7378-085-2 (jointly with Jaroslav Lukeš)
- “Function Spaces. Approximation, Inequalities and Lineability”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2011, MATFYZPRESS, Prague 2011, 106 pp, ISBN 978-80-7378-169-9 (jointly with Jaroslav Lukeš)
- “Function Spaces and Inequalities”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2013, MATFYZPRESS, Prague 2013, xii+152 pp, ISBN 978-80-7378-233-7 (jointly with Jaroslav Lukeš)
- “Function Spaces, Embeddings and Extrapolation X”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2017. MATFYZPRESS, Prague 2017, xiv+155 pp, ISBN 978-80-7378-341-9 (jointly with Jaroslav Lukeš)
- “Function Spaces and Applications XI”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2019. MATFYZPRESS, Prague 2019, xiv+135 pp, ISBN 978-80-7378-385-3 (jointly with Jaroslav Lukeš).
- “Function Spaces and Applications XII”, proceedings of the spring school in Analysis, Paseky nad Jizerou 2023. MATFYZPRESS, Prague 2023,

ix+136 pp, ISBN 978-80-7378-485-0 (jointly with Jaroslav Lukeš, Zdeněk Mihula and Hana Turčinová).

#### Translation of books from English to Czech:

- Lewis Carroll: *A Tangled Tale*, in Czech: *Zamotaný příběh*, Volvox Globator, Prague, 1996, Dokořán Ltd., Prague, 2009.
- Simon Singh: *Fermat's Last Theorem*, in Czech: *Velká Fermatova věta*, Academia, Prague, 2000 (joint translation with Mirko Rokyta and Jiří Rákosník), Dokořán Ltd., Prague, 2007.
- Barry Cipra: *Mistakes*, in Czech: *Chibičky*, Dokořán Ltd., Prague, 2002.
- Keith Devlin: *The Millenium Problems*, in Czech: *Problémy pro třetí tisíciletí*, Dokořán Ltd., Prague, 2005.
- David Acheson: *1089 and All That*, in Czech: *1089 a další parádní čísla*, Dokořán Ltd., Prague, 2006.
- Ian Stewart: *How to Cut a Cake*, in Czech: *Jak nakrájet dort*, Dokořán Ltd., Prague, 2009.
- Douglas Hofstadter: *Gödel, Escher, Bach. An Eternal Golden Braid*, in Czech: *Gödel, Escher, Bach. Existenciální gordická balada*, Dokořán Ltd., Prague, 2012 (joint translation).
- Ian Stewart: *Professor Stewart's Cabinet of Mathematical Curiosities*, in Czech: *Kabinet matematických kuriozit profesora Stewarta*, Dokořán Ltd., Prague, 2013.
- Burkhard Polster: *Q.E.D. Beauty in Mathematical Proof*, in Czech: *Q.E.D. Krása matematického důkazu*, Dokořán Ltd., Prague, 2014.
- Simon Singh: *Simpsons and Their Mathematical Secrets*, in Czech: *Simpsonovi a jejich matematická tajemství*, Dokořán Ltd., Prague, 2015 (joint translation with Petr Holčák).
- Raymond Smullyan: *The Lady or the Tiger and Other Logical Puzzles*, in Czech: *Dáma s tygříkem a další logické hry*, Dokořán Ltd., Prague, 2017).
- Marcus du Satoy: *Music of the Primes*, in Czech: *Hudba prvočísel*, Dokořán Ltd., Prague, 2019 (joint translation with Mirko Rokyta).
- Jamie Hewlett, Alan Martin: *The Tank Girl*, in Czech: *Tankerka*, Argo/Dokořán Ltd., Prague, 2020 (joint translation with Zdeněk Kárník).

#### MONOGRAPHS AND BOOKS

- [1] L. Pick, *Optimal Sobolev Embeddings*, Rudolph–Lipschitz–Vorlesungsreihe no. 43, Rheinische Friedrich–Wilhelms–Universität Bonn, 2002, x+144 pp.
- [2] L. Pick, A. Kufner, O. John and S. Fučík, *Function Spaces, Volume 1*, 2nd Revised and Extended Edition, De Gruyter Series in Nonlinear Analysis and Applications 14, Walter De Gruyter GmbH, Berlin/Boston 2013, ISBN 978-3-11-025041-1, xv+479 pp. MR3024912

#### PAPERS IN ACADEMIC JOURNALS

- [1] A. Nekvinda and L. Pick, *A note on the Dirichlet problem for the elliptic linear operator in Sobolev spaces with weight  $d_M^\xi$* , Comment. Math. Univ. Carolinae **29,1** (1988), 63–71. MR 89h:35097
- [2] L. Pick, *Two weight weak type maximal inequalities in Orlicz classes*, Studia Math. **100,3** (1991), 207–218. MR 94k:42033
- [3] M. Krbeč and L. Pick, *On imbeddings between weighted Orlicz spaces*, Z. Anal. Anwend. **10,1** (1991), 107–117. MR 93k:46021
- [4] P. Gurka and L. Pick,  *$A_\infty$  type conditions for general measures in  $\mathbf{R}^1$* , Real Anal. Exchange **17,2** (1991/2), 706–727. MR 93h:26024, errata 95c:26017
- [5] A. Nekvinda and L. Pick, *Characterization of traces of the weighted Sobolev space  $H_{\varepsilon, M}^{1,p}$* , Functiones & Approximatio **20** (1992), 143–151. MR 94a:46038

- [6] M. Krbeč, B. Opic and L. Pick, *Imbedding theorems for weighted Orlicz–Sobolev spaces*, Jour. London Math. Soc. **46** (1992), 543–556. MR 94g:47041
- [7] A. Gogatishvili and L. Pick, *Weighted inequalities of weak and extra-weak type for the maximal operator and the Hilbert transform*, Czechoslovak Math. J. **118** (1993), 547–566. MR 95i:42013
- [8] P. Ortega and L. Pick, *Two-weight weak and extra-weak type inequalities for the one-sided maximal operator*, Proc. Royal Soc. Edinburgh **123A**, **6** (1993), 1109–1118. MR 95e:42018
- [9] F.J. Martín-Reyes, A. de la Torre and L. Pick, *The  $A_\infty^+$  condition*, Canad. J. Math. **45**, **6** (1993), 1231–1244. MR 94m:42042
- [10] L. Pick, *Weighted estimates for the Hilbert transform of odd functions*, Proc. Georgian Acad. Sci. Math. **1** (1993), 87–107. MR 94k:42020
- [11] Q. Lai and L. Pick, *The Hardy operator,  $L_\infty$  and BMO*, J. London Math. Soc. **48** (1993), 167–177. MR 94e:47042
- [12] L. Pick and W. Sickel, *Several types of intermediate Besov–Orlicz spaces*, Math. Nachr. **164** (1993), 141–165. MR 95c:46050
- [13] D.E. Edmunds, B. Opic and L. Pick, *Poincaré and Friedrichs inequalities in abstract Sobolev spaces*, Proc. Cambridge Phil. Soc. **113** (1993), 355–379. MR 94e:46057
- [14] L. Pick and B. Opic, *On the geometric mean operator*, J. Math. Anal. Appl. **183** (1994), 652–662. MR 95c:47038
- [15] D.E. Edmunds, P. Gurka and L. Pick, *Compactness of Hardy type integral operators in weighted Banach function spaces*, Studia Math. **109** (1994), 73–90. MR 95c:47033
- [16] W.D. Evans, D.J. Harris and L. Pick, *Weighted Hardy and Poincaré inequalities on trees*, J. London Math. Soc. **152** (1995), 121–136. MR 96i:26020
- [17] W.D. Evans, B. Opic and L. Pick, *Interpolation of integral operators on scales of generalized Lorentz–Zygmund spaces*, Math. Nachr. **182** (1996), 127–181. MR 97m:46041
- [18] J. Lang and L. Pick, *The Hardy operator and the gap between  $L_\infty$  and BMO*, J. London Math. Soc. **57** (1998), 196–208. MR 2000c:47063
- [19] A. Cianchi and L. Pick, *Sobolev embeddings into BMO, VMO and  $L_\infty$* , Ark. Mat. **36** (1998), 317–340. MR 99k:46052
- [20] B. Opic and L. Pick, *On generalized Lorentz–Zygmund spaces*, Math. Inequal. Appl. **2** (1999), 391–467. MR 2000m:46067
- [21] D.E. Edmunds, R. Kerman and L. Pick, *Optimal Sobolev imbeddings involving rearrangement-invariant quasinorms*, J. Funct. Anal. **170** (2000), 307–355. MR 2000m:46070
- [22] P. Gurka, F.J. Martín-Reyes, P. Ortega, L. Pick, M.D. Sarrión and A. de la Torre, *Good and bad measures*, J. London Math. Soc. **61** (2000), 123–138. MR 2001e:26022
- [23] A. Cianchi, R. Kerman, B. Opic and L. Pick, *A sharp rearrangement inequality for fractional maximal operator*, Studia Math. **138** (2000), 277–284. MR 2001h:42029
- [24] A. Gogatishvili and L. Pick, *Duality principles and reduction theorems*, Math. Ineq. Appl. **3** (2000), 539–558. MR 2002c:46056
- [25] W.D. Evans, D.J. Harris and L. Pick, *Ridged domains, embedding theorems and Poincaré inequalities*, Math. Nachr. **221** (2001), 41–74. MR 2001k:46045
- [26] M. Carro, L. Pick, J. Soria and V. Stepanov, *On embeddings between classical Lorentz spaces*, Math. Inequal. Appl. **4** (2001), 397–428. MR 2002d:46026
- [27] L. Pick and M. Růžička, *An example of a space  $L^{p(x)}$  on which the Hardy–Littlewood maximal operator is not bounded*, Expo. Math. **19** (2001), 369–371. MR 2002m:42016
- [28] J. Malý and L. Pick, *An elementary proof of sharp Sobolev embeddings*, Proc. Amer. Math. Soc. **130** (2002), 555–563. MR 2002j:46042
- [29] W.D. Evans, B. Opic and L. Pick, *Real interpolation with logarithmic functors*, J. of Inequal. et Appl. **7** (2002), 187–269. MR 2003k:46105
- [30] J. Malý and L. Pick, *The sharp Riesz potential estimates in metric spaces*, Indiana Univ. Math. J. **51** (2002), 251–268. MR 2003d:46045
- [31] A. Cianchi and L. Pick, *Sobolev embeddings into spaces of Campanato, Morrey and Hölder type*, J. Math. Anal. Appl. **282** (2003), 128–150. MR 2004e:46039
- [32] A. Gogatishvili and L. Pick, *Discretization and anti-discretization of rearrangement-invariant norms*, Publ. Mat. **47** (2003), 311–358. MR 2005f:46053
- [33] M. Cwikel, A. Kamińska, L. Maligranda and L. Pick, *Are generalized Lorentz “spaces” really spaces?*, Proc. Amer. Math. Soc. **132** (2004), 3615–3625. MR 2005f:46056
- [34] M. Carro, A. Gogatishvili, J. Martín and L. Pick, *Functional properties of rearrangement invariant spaces defined in terms of oscillations*, J. Funct. Anal. **229**, **2** (2005), 375–404. MR 2006g:46051
- [35] A. Gogatishvili and L. Pick, *Embeddings and duality theorems for weak classical Lorentz spaces*, Canad. Math. Bull. **49** (1) (2006), 82–95. MR 2006k:26024



- [36] R. Kerman and L. Pick, *Optimal Sobolev imbeddings*, Forum Math. **18**, **4** (2006), 535–570. MR 2007g:46052
- [37] A. Gogatishvili, B. Opic and L. Pick, *Weighted inequalities for Hardy-type operators involving suprema*, Collect. Math. **57**, **3** (2006), 227–255. MR 2007g:26019
- [38] A. Gogatishvili and L. Pick, *A reduction theorem for supremum operators*, J. Comput. Appl. Math. **208** (2007), 270–279. MR 2009a:26013
- [39] M. Carro, A. Gogatishvili, J. Martín and L. Pick, *Weighted inequalities involving two Hardy operators with applications to embeddings of function spaces*, J. Operator Theory **59**, **2** (2008), 101–124. MR 2009f:26024
- [40] R. Kerman and L. Pick, *Compactness of Sobolev imbeddings involving rearrangement-invariant norms*, Studia Math. **186**, **2** (2008), 127–160. MR 2009g:46061
- [41] A. Cianchi, R. Kerman and L. Pick, *Boundary trace inequalities and rearrangements*, J. Anal. Math. **105** (2008), 241–265. MR 2009m:46048
- [42] R. Kerman and L. Pick, *Optimal Sobolev imbedding spaces*, Studia Math. **192**, **3** (2009), 195–217. MR 2010b:46071
- [43] A. Cianchi and L. Pick, *Optimal Gaussian Sobolev embeddings*, J. Funct. Anal. **256**, **11** (2009), 3588–3642. 2011e:46049
- [44] A. Gogatishvili and L. Pick, *Calderón-type theorems for operators of non-standard endpoint behaviour*, Indiana Univ. Math. J. **58**, **4** (2009), 1831–1852. MR 2010i:46117
- [45] A. Nekvinda and L. Pick, *Optimal estimates for the Hardy averaging operator*, Math. Nachr. **283**, **2** (2010), 262–271. MR2604121
- [46] A. Cianchi and L. Pick, *An optimal endpoint trace embedding*, Anal. Inst. Fourier **60**, **3** (2010), 939–951. MR2680820
- [47] S. Hencl, J. Malý, L. Pick and J. Vybíral, *Weak estimates cannot be obtained by extrapolation*, Expo. Math. **28** (2010), 375–377. MR2734452
- [48] J. Lukeš, L. Pick and D. Pokorný, *On geometric properties of the spaces  $L^{p(x)}$* , Rev. Mat. Complutense **24**, **1** (2011), 115–130. MR2763369
- [49] A. Nekvinda and L. Pick, *Duals of optimal spaces for the Hardy averaging operator*, Z. Anal. Anwend. **30** (2011), 435–456. MR2853965
- [50] R. Kerman and L. Pick, *Explicit formulas for optimal rearrangement-invariant norms in Sobolev imbedding inequalities*, Studia Math. **206**, **2** (2011), 97–119. MR2860302
- [51] A. Gogatishvili, L. Pick and J. Schneider, *Characterization of a rearrangement-invariant hull of a Besov space via interpolation*, Rev. Mat. Complutense **25**, **1** (2012), 267–283. MR2876928
- [52] A.L. Bernardis, A. Gogatishvili, F.J. Martín-Reyes, P. Ortega Salvador and L. Pick, *The one-sided  $A_p$  conditions and local maximal operator*, Proc. Edinburgh Math. Soc. **55** (2012), 79–104. MR2888442
- [53] E. Pernecká and L. Pick, *Compactness of Hardy operators involving suprema*, Boll. Un. Mat. Ital. **9**, **VI**, **1** (2013), 219–252. MR3086798
- [54] F. Cobos, A. Gogatishvili, B. Opic and L. Pick, *Interpolation of uniformly absolutely continuous operators*, Math. Nachr. **286**, **5-6** (2013), 579–599. MR3048133
- [55] R. Kerman, C. Phipps and L. Pick, *Marcinkiewicz interpolation theorems for Orlicz and Lorentz gamma spaces*, Publ. Mat. **58** (2014), 3–30. MR3161506
- [56] A. Gogatishvili, L. Pick and F. Soudský, *Characterization of associate spaces of weighted Lorentz spaces with applications*, Studia Math. **224** (2014), 1–23. MR3277050
- [57] A. Cianchi, L. Pick and L. Slavíková, *Higher-order Sobolev embeddings and isoperimetric inequalities*, Adv. Math. **273** (2015), 568–650. MR3311772
- [58] A. Cianchi and L. Pick, *Optimal Sobolev trace embeddings*, Trans. Amer. Math. Soc. **368** (2016), 8349–8382. MR3551574
- [59] E. Buriánková, D.E. Edmunds and L. Pick, *Optimal function spaces for the Laplace transform*, Rev. Mat. Complutense **30** (2017), 451–465. MR3690749
- [60] A. Gogatishvili, M. Křepela, L. Pick and F. Soudský, *Embeddings of Lorentz-type spaces involving weighted integral means*, J. Funct. Anal. **273**, **9** (2017), 2939–2980. MR3692326
- [61] P. Cavaliere, A. Cianchi, L. Pick and L. Slavíková, *Norms supporting the Lebesgue differentiation theorem*, Commun. Contemp. Math. **20**, **1** (2018), 1750020, 33pp. MR3714837
- [62] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *Sharp Sobolev type embeddings on the entire Euclidean space*, Comm. Pure Appl. Anal. **17**, **5** (2018), 2011–2037. MR3809140
- [63] A. Cianchi, L. Pick and L. Slavíková, *Banach algebras of weakly differentiable functions*, J. Anal. Math. **138** (2019), 473–511. MR3996047
- [64] D.E. Edmunds, Z. Mihula, V. Musil and L. Pick, *Boundedness of classical operators on rearrangement-invariant spaces*, J. Funct. Anal. **278** (2020), no. 4, 108341. MR4044737
- [65] A. Cianchi, L. Pick and L. Slavíková, *Sobolev embeddings, rearrangement-invariant spaces and Frostman measures*, Ann. Inst. H. Poincaré Anal. Non Linéaire **37** (2020), no. 1, 105–144. MR4049918

- [66] A. Cianchi, L. Pick and L. Slavíková, *Sobolev embeddings in Orlicz and Lorentz spaces with measures*, J. Math. Anal. Appl. **485** (2020), no. 2, 123827. MR4052566
- [67] M. Křepela and L. Pick, *Weighted inequalities for iterated Copson integral operators*, Studia Math. **253** (2) (2020), 163–197. MR4078221
- [68] A. Gogatishvili, M. Křepela, R. Ořhava and L. Pick, *Weighted inequalities for discrete iterated Hardy operators*, Mediterr. J. Math. **17** (132) (2020), 20 pp. MR4132569
- [69] A. Cianchi, V. Musil and L. Pick, *Moser inequalities in Gauss space*, Math. Ann. **377**, no. 3-4 (2020), 1265–1312. MR4126894
- [70] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *On the limit as  $s \rightarrow 0^+$  of fractional Orlicz-Sobolev spaces*, J. Fourier Anal. Appl. **26**, no. 6 (2020), 80. MR4165063
- [71] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *On the limit as  $s \rightarrow 1^-$  of possibly non-separable fractional Orlicz-Sobolev spaces*, Atti Accad. Naz. Lincei Rend. Lincei Mat. Appl. **31**, no. 4 (2020), 879–899. MR4215683
- [72] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *On fractional Orlicz-Sobolev embeddings*, Anal. Math. Phys. **11**, no. 2 (2021), 84. MR4237489
- [73] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *Fractional Orlicz-Sobolev embeddings*, J. Math. Pures Appl. **149**, no. 9 (2021), 216–253. MR4239001
- [74] J. Lang, V. Musil, M. Olřák and L. Pick, *Maximal non-compactness of Sobolev embeddings*, J. Geom. Anal. **31**(9) (2021), 9406–9431. MR4302225
- [75] A. Cianchi, V. Musil and L. Pick, *Sharp exponential inequalities for the Ornstein-Uhlenbeck operator*, J. Funct. Anal. **281** (2021), no. 11, paper no. 109217. MR4319820
- [76] A. Cianchi, V. Musil and L. Pick, *On the existence of extremals for Moser type inequalities in Gauss space*, Int. Math. Res. Not. IMRN **2** (2022), 1494–1537. MR4368892
- [77] A. Gogatishvili, Z. Mihula, L. Pick, H. Turćinová and T. Ŭnver, *Weighted inequalities for a superposition of the Copson operator and the Hardy operator*, J. Fourier Anal. Appl. **28**,2 (2022), Paper No. 24, 24 pp. MR4395122
- [78] J. Lang, Z. Mihula and L. Pick, *Compactness of Sobolev embeddings and decay of norms*, Studia Math. **265**,1 (2022), 1–35. MR4420900
- [79] S. Baena-Miret, A. Gogatishvili, Z. Mihula and L. Pick, *Reduction principle for Gaussian  $K$ -inequality*, J. Math. Anal. Appl. **516**,2 (2022), Paper No. 126522. MR4459008
- [80] A. Gogatishvili, L. Pick and T. Ŭnver, *Weighted inequalities involving Hardy and Copson operators*, J. Funct. Anal. **283**, no. 12 (2022), Paper No. 109719. MR4491358
- [81] A. Gogatishvili, L. Pick and T. Ŭnver, *Weighted inequalities for discrete iterated kernel operators*, Math. Nachr. **295** (2022), 2171–2196. MR4553573
- [82] A. Cianchi, V. Musil and L. Pick, *Optimal Sobolev embeddings for the Ornstein-Uhlenbeck operator*, J. Differential Equations **359** (2023), 414–475. MR4561675
- [83] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *Boundedness of functions in fractional Orlicz-Sobolev spaces*, Nonlinear Anal. **230** (2023), Paper no. 113231. MR4551936
- [84] V. Musil, L. Pick and J. Takáč, *Optimality problems in Orlicz spaces*, Adv. Math. **432** (2023), Paper no. 109273. MR4561675

## PAPERS ACCEPTED FOR PUBLICATION

- [85] A. Gogatishvili and L. Pick, *The two-weight Hardy inequality: a new elementary and universal proof*, Proc. Amer. Math. Soc.

## PAPERS IN CONFERENCE PROCEEDINGS

- [1] L. Pick, *Two weights weak type inequality for the maximal function in  $L(1 + \log L)_+^K$* , Constructive Theory of Functions'87. Proceedings of the Conference held in Varna (Bulgaria), May-June 1987. Publ. House Bulg. Acad. Sci., Sofia, 1988, 377–381. MR 90c:42026
- [2] L. Pick, *Maximal inequalities and imbeddings in weighted Orlicz spaces*, Function Spaces. Proceedings of the 2nd International Conference held in Poznań (Poland), September 1989. J. Musielak et al. (eds.), Teubner-Texte zur Math. 120, B.G. Teubner, Stuttgart, 1991, 35–40. CMP:92 09
- [3] L. Pick, *A remark on continuous imbeddings between Banach function spaces*, Colloq. Math. Soc. János Bolyai, 58. Approximation Theory, Kécskemét (Hungary), 1990, 571–581. MR 94c:46058
- [4] L. Pick, *Three types of weighted inequalities for integral operators*, Fourier Analysis and Partial Differential Equations. Proceedings of the 4th International Conference on Fourier Analysis and PDEs, Miraflores de la Sierra (Spain), June 1992. J. García-Cuerva, E. Hernández, F. Soria, J.-L. Torrea (eds.), Studies in Advanced Mathematics, CRC Press, Boca Raton, 1995, 285–296. MR 96b:42022
- [5] M. Krbec, B. Opic, L. Pick and J. Rákosník, *Some recent results on Hardy type operators in weighted function spaces and related topics*, Function Spaces, Differential Operators

- and Nonlinear Analysis. Proceedings of the 2nd Summer School held in Friedrichroda (Germany), September 1992, H.-J. Schmeisser and H. Triebel (eds.), Teubner-Texte zur Math. 133, B.G. Teubner, Stuttgart, 1993, 158–184. MR 93e:46039
- [6] L. Pick, *Optimal Sobolev embeddings*, Nonlinear Analysis, Function Spaces and Applications 6, Proceedings of the 6th International Spring School held in Prague, Czech Republic, May-June 1998, M. Krbeč and A. Kufner (eds.), Olympia Press, Prague, 1999, 156–199. MR 2001h:46053
- [7] L. Pick, *Supremum operators and optimal Sobolev inequalities*, Function Spaces, Differential Operators and Nonlinear Analysis. Proceedings of the Spring School held in Syöte Centre, Pudasjärvi (Northern Finland), June 1999, V. Mustonen and J. Rákosník (eds.), Mathematical Institute AS CR, Prague, 2000, 207–219. MR 2000m:46075
- [8] L. Pick, *Optimal Sobolev embeddings – old and new*, Function Spaces, Interpolation Theory and Related Topics. Proceedings of the Conference held in Lund (Sweden), August 17-22, 2000, in Honour of Jaak Peetre on his 65th Birthday, A. Kufner, M. Cwikel, L.-E. Persson, G. Sparr, M. Engliš (eds.), W. de Gruyter, Berlin 2002, ISBN 3-11-017117-1, 359–368. MR 2003j:46054
- [9] L. Pick, *Optimality and Interpolation*, Interpolation Theory and Applications. Proceedings of the Conference held in Miami (FL, U.S.A.), March 29-April 2, 2006, in Honour of Michael Cwikel on his 60th Birthday, Laura de Carli, Mario Milman (Eds.), Contemporary Mathematics, Vol. **445**, AMS, Providence, RI 2007, ISBN 978-0-8218-4207-2, 253–264. MR 2009g:46061
- [10] L. Pick, *Optimality of function spaces in Sobolev embeddings*, Sobolev Spaces in Mathematics I. Sobolev Type Inequalities. Vladimir Maz'ya (Ed.), Springer, Tamara Rozhkovskaya Publisher, Novosibirsk, 2009, ISBN 978-0-387-85647-6, xxix+378 pp., 249–280. MR 2010j:46072
- [11] L. Pick, *Weighted Inequalities for Integral and Supremum Operators*, Around the Research of Vladimir Maz'ya III. Analysis and Applications. Ari Laptev (Ed.), Springer, Tamara Rozhkovskaya Publisher, Novosibirsk, 2010, ISBN 978-1-4419-1344-9, xxi+388 pp., 279–330. MR2664713
- [12] L. Pick, *Optimality of function spaces in Sobolev embeddings*, SDE 2010, 1–64, XXVII Seminar in Differential Equations, Bořetice, May 31 - June 4, 2010, Gabriela Holubová and Petr Nečesal (eds.), University of West Bohemia, Pilsen, 2011, ISBN 978-80-261-0186-4.
- [13] A. Cianchi, L. Pick and L. Slavíková, *A sharp iteration principle for higher-order Sobolev embeddings.*, Calculus of variations and PDEs, 37–58, Banach Center Publ., 101, Polish Acad. Sci. Inst. Math., Warsaw, 2014. MR3288648
- [14] L. Pick, *How to find the optimal partner*, Function Spaces and Lineability, Paseky nad Jizerou, 47–109, MATFYZPRESS, Prague, 2015, Jaroslav Lukeš and Petr Pošta (eds.), MATFYZPRESS, Prague 2013, ISBN 978-80-7378-291-7.
- [15] L. Pick, *Optimality of function spaces in Sobolev embeddings*, Advanced Courses of Mathematical Analysis V, World Sci. Publ., Hackensack, NJ, 2016, 49–117, ISBN 978-981-4699-68-6. MR3586571

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