

# LENKA SLAVÍKOVÁ

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## CURRENT POSITION

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### Associate Professor

Faculty of Mathematics and Physics, Charles University, Czech Republic

since 2025

## PREVIOUS POSITIONS

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### Assistant Professor

Faculty of Mathematics and Physics, Charles University, Czech Republic  
(on leave from September 2019 until August 2020)

2019 – 2024

### Hausdorff Postdoc

University of Bonn, Germany

2019 - 2020

### Postdoctoral Fellow

University of Missouri, Columbia, MO, USA

2016 - 2019

## EDUCATION

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### Ph.D. in Mathematical Analysis

Faculty of Mathematics and Physics, Charles University, Czech Republic  
Thesis: *Weighted inequalities and properties of operators and embeddings on function spaces*  
Advisor: Luboš Pick

2016

### Master in Mathematical Analysis

Faculty of Mathematics and Physics, Charles University, Czech Republic

2012

### Bachelor in Mathematics

Faculty of Mathematics and Physics, Charles University, Czech Republic

2010

## PUBLICATIONS AND PREPRINTS

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- [32] P. Honzík, S. Lappas and L. Slavíková, *Bilinear singular integral operators with kernels in weighted spaces*, preprint, arXiv:2412.07014.
- [31] G. Dosidis, B. Park and L. Slavíková, *Bilinear rough singular integrals near the critical integrability via sharp Fourier multiplier criteria*, Trans. Amer. Math. Soc., to appear.
- [30] P. Durcik, L. Slavíková and C. Thiele, *Norm-variation of triple ergodic averages for commuting transformations*, Anal. PDE **19** (2026), no. 3, 539–586.
- [29] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *Fractional Orlicz-Sobolev embeddings into Campanato type spaces*, Nonlinear Anal. Real World Appl. **87** (2026), Paper No. 104455, 26 pp.
- [28] A. Cianchi, G. Y. Diebou and L. Slavíková, *Strongly nonlinear Robin problems for harmonic and polyharmonic functions in the half-space*, Adv. Calc. Var. **18** (2025), no. 3, 773–806.
- [27] K. Domelevo, P. Durcik, V. Fragkiadaki, O. Klein, D. Oliveira e Silva, L. Slavíková and B. Wróbel, *Dimension-free inequalities for low and high degree functions on the Hamming cube*, Studia Math. **280** (2025), no. 2, 161–173.
- [26] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *On the modulus of continuity of fractional Orlicz-Sobolev functions*, Math. Ann. 391 (2025), no. 2, 2429–2477.
- [25] P. Cavaliere, A. Cianchi, L. Pick and L. Slavíková, *Higher-order Sobolev embeddings into spaces of Campanato and Morrey type*, Nonlinear Anal. **251** (2025), Paper No. 113678, 31 pp.
- [24] G. Dosidis and L. Slavíková, *Multilinear singular integrals with homogeneous kernels near  $L^1$* , Math. Ann. **389** (2024), 2259 – 2271.
- [23] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *Boundedness of functions in fractional Orlicz-Sobolev spaces*, Nonlinear Anal. **230** (2023), Paper No. 113231, 26 pp.

- [22] P. Durcik, L. Slavíková and C. Thiele, *Local bounds for singular Brascamp-Lieb forms with cubical structure*, Math. Z. **302** (2022), 2375–2405.
- [21] J. Chen, L. Grafakos, D. He, P. Honzík and L. Slavíková, *Bilinear maximal functions associated with surfaces*, Proc. Amer. Math. Soc. **150** (2022), no. 4, 1635–1639.
- [20] L. Grafakos, M. Mastyo and L. Slavíková, *A sharp variant of the Marcinkiewicz theorem with multipliers in Sobolev spaces of Lorentz type*, J. Funct. Anal. **282** (2022), no. 3, Paper No. 109295.
- [19] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *Fractional Orlicz-Sobolev embeddings*, J. Math. Pures Appl. **149** (2021), 216–253.
- [18] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *On fractional Orlicz-Sobolev spaces*, Anal. Math. Phys. **11** (2021), no. 2, Paper No. 84, 21 pp.
- [17] L. Slavíková, *Bilinear Fourier multipliers and the rate of decay of their derivatives*, J. Approx. Theory **261** (2021), 105485, 25pp.
- [16] 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** (2020), no. 4, 879–899.
- [15] 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** (2020), no. 6, Paper No. 80, 19pp.
- [14] L. Slavíková, *On the failure of the Hörmander multiplier theorem in a limiting case*, Rev. Mat. Iberoam. **36** (2020), no. 4, 1013 – 1020.
- [13] L. Grafakos, D. He and L. Slavíková,  *$L^2 \times L^2 \rightarrow L^1$  boundedness criteria*, Math. Ann. **376** (2020), no. 1 – 2, 431 – 455.
- [12] 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, 31 pp.
- [11] 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.
- [10] L. Grafakos and L. Slavíková, *A sharp version of the Hörmander multiplier theorem*, Int. Math. Res. Not. IMRN 2019, no. 15, 4764 – 4783.
- [9] A. Cianchi, L. Pick and L. Slavíková, *Banach algebras of weakly differentiable functions*, J. Anal. Math. **138** (2019), no. 2, 473 – 511.
- [8] L. Grafakos, D. He and L. Slavíková, *Failure of the Hörmander kernel condition for multilinear Calderón-Zygmund operators*, C. R. Math. Acad. Sci. Paris **357** (2019), no. 4, 382 – 388.
- [7] L. Grafakos and L. Slavíková, *The Marcinkiewicz multiplier theorem revisited*, Arch. Math. (Basel) **112** (2019), no. 2, 191 – 203.
- [6] A. Alberico, A. Cianchi, L. Pick and L. Slavíková, *Sharp Sobolev type embeddings on the entire Euclidean space*, Comm. Pure Appl. Anal. **17** (2018), no. 5, 2011 – 2037.
- [5] P. Cavaliere, A. Cianchi, L. Pick and L. Slavíková, *Norms supporting the Lebesgue differentiation theorem*, Commun. Contemp. Math. **20** (2018), no. 1, 1750020, 33pp.
- [4] L. Slavíková, *On the necessity of bump conditions for the two-weighted maximal inequality*, Proc. Amer. Math. Soc. **145** (2017), 109 – 118.
- [3] L. Slavíková, *Compactness of higher-order Sobolev embeddings*, Publ. Mat. **59** (2015), no. 2, 373 – 448.
- [2] A. Cianchi, L. Pick and L. Slavíková, *Higher-order Sobolev embeddings and isoperimetric inequalities*, Adv. Math. **273** (2015), 568 – 650.
- [1] L. Slavíková, *Almost-compact embeddings*, Math. Nachr. **285** (2012), 1500 – 1516.

## AWARDS

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The Learned Society of the Czech Republic Award for Young Researchers	2024
Neuron Prize for Promising Scientists in Mathematics, awarded by the Neuron Foundation, Czech Republic	2023
The Czech Mathematical Society Prize for Young Researchers	2022

Forbes 30 Under 30 in the Czech Republic	2017
Third prize at International Mathematics Competition for University Students	2009
Bronze medal at International Mathematical Olympiad	2007

## GRANTS

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Grant no. 26-21107S from the Czech Science Foundation (principal investigator)	2026 - 2028
Primus grant PRIMUS/21/SCI/002 from Charles University (principal investigator)	2021 - 2025
Grant no. 23-04720S from the Czech Science Foundation (team member)	2023 - 2025
University center for mathematical modeling, applied analysis and computational mathematics, funded by Charles University (junior researcher)	2023 - 2024
Grant No. 62315 from the Grant Agency of Charles University (principal investigator)	2015 - 2016

## SHORT RESEARCH STAYS

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PhD student internship, BCAM, Bilbao, Spain (three-month stay)	2016
Visiting PhD student, University of Florence, Italy (one-month stay)	2014

## INVITED TALKS AT CONFERENCES AND WORKSHOPS

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Novel methods of PDEs and function spaces, Warsaw, Poland	June 2025
Nonlocal Equations: Analysis and Numerics, Bielefeld, Germany	March 2025
Analysis and Geometry on Discrete Spaces, HIM, Bonn, Germany	October 2024
Contemporary Harmonic Analysis and its Synergies, Warsaw, Poland	September 2024
IWOTA 2023, special session on Harmonic Analysis, Helsinki, Finland	August 2023
Nonlocal Equations: Analysis and Numerics, Bielefeld, Germany	March 2023
Regularity theory for elliptic and parabolic systems and problems in continuum mechanics, Telč, Czech Republic	September 2022
Nonuniformly elliptic problems, IMPAN, Warsaw, Poland	September 2022
Nonlinear Analysis, Function Spaces and Applications (NAFSA 12), Praha, Czech Republic	June 2022
Nonlocal Equations: Analysis and Numerics, Bielefeld, Germany	February 2022
2021 Canadian Mathematical Society Winter Meeting, special session on Harmonic Analysis and Fractal Geometry, Vancouver, Canada (online)	December 2021
Nonlinear Elliptic and Parabolic Partial Differential Equations, Levico Terme, Italy (online)	October 2021
8th European Congress of Mathematics, section Geometric-functional inequalities and related topics, Portorož, Slovenia (online)	June 2021
Congress of Young Researchers RSME, Real Analysis session, Castellón, Spain	January 2020
Siegmundsburg Seminar on Analysis and Theoretical Numerics, Siegmundsburg, Germany	August 2019
10th Function Spaces, Differential Operators and Nonlinear Analysis (FSDONA 2019), Turku, Finland	June 2019
AMS Spring Central Sectional Meeting, Special Session on Recent Advances in Approximation Theory and Operator Theory, Ohio State University, Columbus, OH, USA	March 2018
AMS Spring Eastern Sectional Meeting, Special Session on Current Trends in Function Spaces and Nonlinear Analysis, Hunter College, City University of New York, New York, NY, USA	May 2017
Geometric and Analytic Inequalities, Banff International Research Station, Alberta, Canada	July 2016
Geometric aspects of PDE's and functional inequalities, Cortona, Italy	April 2016

## INVITED SEMINAR TALKS

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Intensive Research Programme on Modern Trends in Fourier Analysis, CRM Barcelona, Spain	<i>May 2025</i>
University of Wroclaw, Poland	<i>May 2024</i>
Analysis Seminar, Clemson University, USA (online)	<i>January 2023</i>
Nonlinear Analysis Seminar Series, online	<i>September 2022</i>
Discrete harmonic and harmonic analysis seminar, University of Würzburg, Germany (online)	<i>July 2022</i>
Bi.discrete seminar, University of Bielefeld, Germany (online)	<i>December 2020</i>
CDT PDE Lunchtime Seminar, Mathematical Institute, University of Oxford, United Kingdom	<i>March 2020</i>
Analysis Seminar, University of Nantes, Nantes, France	<i>February 2020</i>
Analysis Seminar, The Ohio State University, Columbus, OH, USA	<i>May 2019</i>
Analysis Seminar, California Institute of Technology, Pasadena, CA, USA	<i>April 2019</i>
Colloquium, Washington University in St. Louis, MO, USA	<i>November 2018</i>
Analysis Seminar, Georgia Institute of Technology, Atlanta, GA, USA	<i>October 2018</i>
Analysis Seminar, University of Wisconsin-Madison, Madison, WI, USA	<i>April 2018</i>
Analysis Seminar, Kansas State University, Manhattan, KS, USA	<i>April 2018</i>

## ORGANIZATION OF SCIENTIFIC MEETINGS

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Co-organizer, Workshop on Harmonic Analysis and Related Topics, Joint Meeting of the Czech, Slovenian, Austrian, Slovak and Catalan Mathematical Societies (CSASC 2026), Plzeň, Czech Republic	<i>February 2026</i>
Scientific committee member, 11th International Conference on Function Spaces, Differential Operators, and Nonlinear Analysis (FSDONA 2024), Oberhof, Germany	<i>September 2024</i>
Co-organizer, Minisymposium on Function spaces and related topics, 9th European Congress of Mathematics, Sevilla, Spain	<i>July 2024</i>
Main organizer, Geometric and functional inequalities, function spaces and PDEs Prague, Czech Republic	<i>February 2023</i>
Co-organizer, Luboš 60, a conference on the occasion of 60th birthday of Luboš Pick, Železná Ruda, Czech Republic	<i>September 2021</i>

## INSTITUTIONAL RESPONSIBILITIES

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Co-organizer of International Prague seminar on function spaces (online), Charles University	<i>since 2022</i>
Co-organizer of Analysis and PDE seminar, University of Bonn, Germany	<i>2019 – 2020</i>
Co-organizer of Analysis seminar, University of Missouri, USA	<i>2017</i>

## EDITORIAL WORK

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The Journal of Geometric Analysis, associate editor	<i>since 2025</i>
Collectanea Mathematica, associate editor	<i>since 2024</i>

## REVIEWING ACTIVITIES

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Grant proposal reviewer for the German Research Foundation (DFG) and the National Science Center, Poland

Peer review of scientific papers for various journals, including Anal. PDE, Proc. London Math. Soc., J. Funct. Anal., Trans. Amer. Math. Soc., Int. Math. Res. Not IMRN, J. Differential Equations, J. Geom. Anal., Math. Z., Potential Anal., Israel J. Math., Nonlinear Anal.

## MENTORSHIP OF POSTDOCTORAL FELLOWS

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Stefanos Lappas (Charles University)	<i>2024 – 2025</i>
Georgios Dosidis (Charles University)	<i>2021 – 2023</i>

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**PHD THESES SUPERVISION**

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Andrew Haar (Charles University)	<i>2024 – present</i>
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**MASTER THESES SUPERVISION**

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Jan Moldavčuk (Charles University)	<i>2026 – present</i>
Anna Musilová (Charles University)	<i>2024 – 2025</i>
Alexandra Havelková (Charles University)	<i>2024 – 2025</i>

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**BACHELOR THESES SUPERVISION**

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Veronika Krušinová (Charles University)	<i>2025 – present</i>
Jan Moldavčuk (Charles University)	<i>2024 – 2025</i>
Anna Musilová (Charles University)	<i>2022 – 2023</i>
Radan Vincenec (Charles University)	<i>2020 – 2022</i>

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**TEACHING EXPERIENCE**

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Courses taught at Charles University: Advanced Differentiation and Integration 1, Introduction to Interpolation Theory 2, Selected Topics in Harmonic Analysis 1 - 2, Measure and Integration Theory 1 - 2, Calculus 1 - 3  
*2020 – present*

Courses taught at University of Missouri, USA: Applied Analysis, Differential Equations, Calculus III  
*2016 – 2019*