Dariusz Mirosław Kosz

Ph.D. in Mathematics

PERSONAL DATA

Date of birth:	December 30, 1991
Place of birth:	Nysa, Poland
E-mail:	dariusz.kosz@pwr.edu.pl
Webpage:	prac.im.pwr.edu.pl/~kosz/
Community:	ORCID, arXiv, MathGenealogy

POSITIONS

2021– **Postdoctoral Fellow**, Basque Center for Applied Mathematics.

2020– **Assistant Professor**, Wrocław University of Science and Technology, Faculty of Pure and Applied Mathematics.

2019–2020 **Research-and-teaching Assistant**, Wrocław University of Science and Technology, Faculty of Pure and Applied Mathematics.

EDUCATION AND THESES

2015–2019 **Ph.D. in Mathematics**
Wrocław University of Science and Technology
Faculty of Pure and Applied Mathematics
branch: Harmonic Analysis
Maximal operators in non-doubling metric measure spaces
advisor: professor Krzysztof Stempak

2013–2015 **Master of Sciences in Mathematics**
Wrocław University of Science and Technology
Faculty of Fundamental Problems of Technology
specialty: Theoretical Mathematics
Maximal operators
advisor: professor Krzysztof Stempak

2010–2013 **Bachelor Degree in Mathematics**
Wrocław University of Science and Technology
Faculty of Fundamental Problems of Technology

PUBLICATIONS AND PREPRINTS

[18] *Weak-type maximal function estimates on the infinite-dimensional torus*,
preprint, arXiv:2211.11641, with G. Rey, L. Roncal.

[17] *Sharp estimates for Jacobi heat kernels in conic domains*,
preprint, arXiv:2210.14590, with D. Hanrahan.

[16] *On the doubling condition in the infinite-dimensional setting*,
preprint, arXiv:2210.01250.

[15] *The maximal function of the Devil's staircase is absolutely continuous*,
preprint, arXiv:2210.00385, with C. González-Riquelme.

[14] *Boundedness properties of maximal operators on Lorentz spaces*,
preprint, arXiv:1905.03232.

[13] A_∞ *condition for general bases revisited: complete classification of definitions*,
Proc. Amer. Math. Soc. (accepted), arXiv:2105.14852.

[12] *Maximal operators on the infinite-dimensional torus*,
Math. Ann. (2022), arXiv:2109.04811, with J. Martínez-Perales, V. Paternostro, E. Rela, L. Roncal.

[11] *Some remarks on dimension-free estimates for the discrete Hardy–Littlewood maximal functions*,
Israel J. Math. (2022), arXiv:2010.07379, with M. Mirek, P. Plewa, B. Wróbel.

[10] BV *continuity for the uncentered Hardy–Littlewood maximal operator*,
J. Funct. Anal. **281** (2021), arXiv:2009.05729, with C. González-Riquelme.

[9] *On differentiation of integrals in the infinite-dimensional torus*,
Studia Math. **251** (2021), arXiv:2003.01633.

[8] *Maximal operators on Lorentz spaces in non-doubling setting*,
Math. Z. **298** (2021), arXiv:1903.12013.

[7] BMO *spaces for nondoubling metric measure spaces*,
Publ. Mat. **64** (2020), arXiv:1903.12169.

[6] *Dichotomy property for maximal operators in non-doubling setting*,
Bull. Aust. Math. Soc. **31** (2019), arXiv:1903.11938.

[5] *On relations between weak and strong type inequalities for modified maximal operators on non-doubling metric measure spaces*,
Forum Math. **31** (2019), arXiv:1903.11897.

[4] *On relations between weak and restricted weak type inequalities for maximal operators on non-doubling metric measure spaces*,
Studia Math. **241** (2018), arXiv:1809.08038.

[3] *On relations between weak and strong type inequalities for maximal operators on non-doubling metric measure spaces*,
Publ. Mat. **62** (2018), arXiv:1709.06357.

[2] *On the discretization technique for the Hardy–Littlewood maximal operators*,
Real Anal. Exchange **41** (2016).

[1] *Corrigendum to "On a discrete version of Tanaka's theorem for maximal function"*, Proc. Amer. Math. Soc. **143** (2015), with J. Bober, E. Carneiro, K. Hughes, L.B. Pierce.

AWARDS

2022 START Scholarship (Foundation for Polish Science).

2022 Secundus Scientific Award (WUST).

2021 Dionizy Smoleński Scientific Award (Rector of WUST).

2019 The Prize of the Rector of WUST.

2018 The Prize of the Rector of WUST.

2017 Hugo Steinhaus Scholarship (Wrocław Academic Centre).

2017 The Prize of the Rector of WUST.

2016 The Prize of the Rector of WUST.

2015 III prize in the LIX Józef Marcinkiewicz Competition (Polish Academy of Sciences).

PARTICIPATION IN RESEARCH PROJECTS

2022–2025 SONATINA 6 **Harmonic analysis on the infinite-dimensional torus**, Grant Manager, 2022/44/C/ST1/00015, National Science Centre of Poland, declined.

2022– Researcher, BERC 2022-2025, Basque Government.

2021–2022 Researcher, Severo Ochoa SEV-2017-0718, Spanish State Research Agency.

2021 Researcher, BERC 2018-2021, Basque Government.

2019 Researcher, Faculty grant #049U/0052/19, WUST.

2017–2021 PRELUDIUM 11 **Maximal operators**,
Grant Manager, 2016/21/N/ST1/01496, National Science Centre of Poland.

CONFERENCE TALKS

Sep 2022 *On the doubling condition in the infinite-dimensional setting*, Probability and Analysis 2022, Wrocław (Poland).

Jun 2022 *Maximal operators on the infinite-dimensional torus*, 11th International Conference on Harmonic Analysis and Partial Differential Equations, El Escorial (Spain).

May 2019 *Hardy–Littlewood maximal operators in non-doubling setting*, Probability and Analysis 2019, Będlewo (Poland).

RESEARCH SEMINAR TALKS

Dec 2021 *Maximal operators on the infinite-dimensional torus*, Analysis and PDE, BCAM (Bilbao, Spain).

Dec 2021 *Threshold bases for maximal operators on the infinite-dimensional torus*, Analysis and Applications, UAM (Madrid, Spain).

Nov 2021 *On differentiation bases for maximal operators on the infinite-dimensional torus*, Harmonic Analysis and Orthogonal Expansions, WUST (Wrocław, Poland).

Dec 2020 *Relations between optimal constants in maximal inequalities on* $\mathbb{R}^d$ *and* $\mathbb{Z}^d$, HA&OE, WUST.

Dec 2020 BV*-continuity of the centered Hardy–Littlewood maximal operator*, HA&OE, WUST.

Oct 2019 *On differentiation of integrals in the infinite-dimensional torus*, HA&OE, WUST.

Mar 2019 *Boundedness properties of maximal operators on Lorentz spaces in non-doubling setting* (parts I and II), HA&OE, WUST.

Oct 2018 *Maximal operators on Lorentz spaces in non-doubling setting*, HA&OE, WUST.

Mar 2018 *Dichotomy property for maximal operators in non-doubling setting*, HA&OE, WUST.

Oct 2017 BMO *spaces for non-doubling metric measure spaces* (parts I and II), HA&OE, WUST.

Apr 2017 *On relations between weak and strong type inequalities for modified maximal operators on non-doubling metric measure spaces* (parts I and II), HA&OE, WUST.

Aug 2016 *On weak and restricted weak type inequalities for maximal operators on non-doubling metric measure spaces*, HA&OE, WUST.

Nov 2015 *On relations between weak and strong type inequalities for maximal operators on non-doubling metric measure spaces* (parts I and II), HA&OE, WUST.

May 2015 *Discretization technique for maximal operators*, HA&OE, WUST.

Oct 2014 *Remarks on a discrete version of Tanaka's theorem for the non-centered Hardy–Littlewood maximal operator*, HA&OE, WUST.

REFEREE FOR JOURNALS

Colloquium Mathematicum, Mathematische Annalen, Mathematische Nachrichten, Studia Mathematica, Transactions of the American Mathematical Society.

HOBBIES

Playing scrabble, playing the piano, mountain running, reading books, solving chess puzzles.