

Simon Bortz

EDUCATION

University of Missouri Ph.D. in Mathematics, Advisor: Steve Hofmann	Columbia, MO 2012-2016
Indiana University B.S. in Mathematics	Bloomington, IN 2006-2010

APPOINTMENTS

University of Alabama Assistant Professor	Tuscaloosa, AL 2020-
University of Washington Acting Assistant Professor	Seattle, WA 2018-2020
University of Minnesota Postdoc	Minneapolis, MN 2016-2020
Mathematical Sciences Research Institute (MSRI) Postdoc	Berkeley, CA 1/17/17 - 5/26/17

PUBLICATIONS

- (with Olli Tapiola) ϵ -Approximability of Harmonic Functions in L^p Implies Uniform Rectifiability, Proc. Amer. Math. Soc. 147 (2019), no. 5, 2107-2121.
- (with Steve Hofmann) Quantitative Fatou Theorems and Uniform Rectifiability. Potential Anal. 53 (2020), no. 1, 329–355.
- (with Pascal Auscher, Moritz Egert and Olli Saari) Non-local self-improving properties: A functional analytic approach. Tunisian J. Math. 1 (2019), no. 2, 151-183.
- (with Pascal Auscher, Moritz Egert and Olli Saari) Non-local Gehring lemmas. J. Geom. Anal. (2019)
- (with Pascal Auscher, Moritz Egert and Olli Saari) On regularity of weak solutions to parabolic systems, J. Math. Pures Appl. (9) 121 (2019) 216–243.
- (with Murat Akman, Steve Hofmann and José Maria Martell) Rectifiability, interior approximation and Harmonic Measure, Ark. Mat. 57 (2019), no. 1, 1-22.
- (with Steve Hofmann) A singular integral approach to a two phase free boundary problem, Proc. Amer. Math. Soc. 144 (2016), no. 9, 3959-3973. (preprint).
- (with Steve Hofmann) Harmonic measure and approximation of uniformly rectifiable Sets, Rev. Mat. Iberoam. 33 (2017), no. 1, 351–373.

PREPRINTS

- (with S. Hofmann, J.L. Luna Garcia, S. Mayboroda, B. Poggi) Perturbations for Second Order Elliptic Operators. Part I: Square function bounds for layer potentials. arXiv:2003.02703
- (with M. Egert and O. Saari) Note on time-regularity for weak solutions to parabolic systems of p-Laplace type. arXiv:1912.07449.
- (with M. Egert and O. Saari) Sobolev contractivity of gradient flow maximal functions. arXiv:1910.13150.

- (with M. Engelstein, M. Goering, T. Toro and Z. Zhao) Two Phase Free Boundary Problem for Poisson Kernels. arXiv:1908.03033.

SEMINAR AND COLLOQUIUM TALKS

- University of Alabama Colloquium, January 29, 2019.
- SIAM Central States Section, October 19, 2019.
- University of Alabama Analysis Seminar, September 13, 2019.
- University of Oregon Analysis Seminar May 28, 2019.
- AMS Sectional Hartford, CT, April 13, 2019.
- University of Nebraska Colloquium, March 8, 2019.
- AMS Sectional: Nonlocal PDEs via Harmonic Analysis, SFSU, October 2018.
- University of Connecticut Analysis Seminar, March 2018.
- Harmonic Analysis in Winter, ICMAT-Madrid, January 2018.
- Nonsmooth Analysis: a Workshop for Postdocs, November 2017.
- Rainwater Seminar, University of Washington, October, 2017.
- MSRI Postdoc Seminar, MSRI, May 2017.
- AMS Sectional Meeting, Stony Brook University, March 2016.
- University of Missouri Analysis Seminar, February 2016.
- University of Minnesota PDE Seminar, November 2015.
- University of Missouri Analysis Seminar, September, 2015.
- Workshop in Harmonic Analysis, PDE, and Geometric Measure Theory, ICMAT- Madrid, January, 2015.
- University of Missouri Analysis Seminar, November, 2014.

SEMINARS AND WORKSHOPS ORGANIZED

- University of Alabama Analysis Seminar Fall 2020 -
- University of Washington Rainwater Seminar Spring 2019 - Winter 2020
- AMS Sectional Meeting, Special Session : Harmonic Analysis and Partial Differential Equations. November 3-4, 2018.
- Research Term on Real Harmonic Analysis and Its Applications to Partial Differential Equations and Geometric Measure Theory, ICMAT-Madrid, May 7, 2018 - June 8, 2018.
- Workshop on Real Harmonic Analysis and its Applications to Partial Differential Equations and Geometric Measure Theory, ICMAT-Madrid, May 28, 2018 - June 1, 2018.
- Graduate Student Analysis Seminar at University of Missouri, Fall 2015-Spring 2016.
- Graduate Student Seminar at University of Missouri, Fall 2013-Spring 2014.

OTHER SERVICE

- Referee for: Advances in Math, Complex Analysis and its Synergies, Journal of Mathematical Analysis and Applications, Potential Analysis, Proceedings of the AMS, Rocky Mountain Journal of Mathematics, SIAM Journal on Mathematical Analysis.

TEACHING

- Mathematical Analysis Spring 2020
- Mathematical Analysis II Win 2020
- Mathematical Analysis Aut 2019
- Ordinary Differential Equations Spring 2019
- Ordinary Differential Equations Winter 2019
- Ordinary Differential Equations Aut 2018
- Calculus 2 Spring 2018
- Partial Differential Equations Fall 2017
- Calculus 2 Fall 2016
- Advanced Calculus (TA) Spring 2016
- Calculus 3 Fall 2015
- Calculus 3 Spring 2015
- Business Calculus Fall 2014
- Calculus 2(TA) Fall 2014
- Calculus 1 (TA) Fall 2013