Oleksandr Vlasiuk

Contact information

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Education

1. Vanderbilt University, Nashville, TN; Mathematics; Ph.D., 2018
2. Université du Sud, Toulon-Var, Toulon, France; Master I Mathématiques, 2013
3. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; B.Sc., 2013

Appointments

2018–present: **Postdoctoral Scholar**, Florida State University, Tallahassee, FL

Publications

1. A. Reznikov and O.V., **Riesz energy on self-similar sets**, Proc. Am. Math. Soc., accepted.
doi:10.1090/proc/14663, arXiv:1810.01557
2. O. V., T. Michaels, N. Flyer, B. Fornberg, **Fast high-dimensional node generation with variable density**, Comput. Math. Appl. 76 (2018), no. 7, 1739–1757.
doi:10.1016/j.camwa.2018.07.026, arXiv:1710.05011
3. A. Reznikov, E. B. Saff and O. V., **A minimum principle for potentials with application to Chebyshev constants**, Potential Anal. 47 (2017), no. 2, 235–244.
doi:10.1007/s11118-017-9618-x
4. D. P. Hardin, E. B. Saff and O.V., **Generating Point Configurations via Hypersingular Riesz Energy with an External Field**, SIAM J. Math. Anal. 49 (2017), no. 1, 646–673.
doi:10.1137/16m107414x
5. D. Leviatan, I. A. Shevchuk and O.V., **Positive results and counterexamples in comonotone approximation II**, J. Approx. Theory 179 (2014), 1–23.
doi:10.1016/j.jat.2013.11.004

Preprints

1. Dmitriy Bilyk, Alexey Glazyrin, Ryan Matzke, Josiah Park, and O.V., **Energy on spheres and discreteness of minimizing measures**, arXiv:1908.10354

2. Dmitriy Bilyk, Alexey Glazyrin, Ryan Matzke, Josiah Park, and O.V., **Optimal measures for p-frame energies on spheres**, arXiv:1908.00885

Papers in preparation

1. D. P. Hardin, E. B. Saff and O.V., **Γ-convergence and the truncated Riesz kernel**, *in preparation.*

Presentations and talks

1. Conference presentations

   1) (upcoming) AMS Sectional meeting, Gainesville, FL, November 2019

   2) "Sparsity of supports of measures minimizing integral", SIAM-SEAS, Knoxville, September 2019

   3) "Properties of minimizers of quadratic functionals over probability measures on homogeneous spaces", Barcelona Analysis Conference, University of Barcelona, June 2019

   4) "Minimizers of quadratic functionals over probability measures on the sphere", Approximation, sampling, and compression in high dimensional problems (workshop), *poster presentation*, INI Cambridge, June 2019

   5) "Minimizing p-frame energies (and other continuous functionals with radial kernels)" Approximation Theory 16, Vanderbilt University, Nashville, May 2019

   6) "Minimizers of quadratic functionals over probability measures on the sphere", Madison Lectures in Fourier Analysis, *poster presentation*, UW Madison, May 2019

   7) "Minimizing continuous functionals over probability measures", Shanks Workshop on Energy, Packing, and Covering, Vanderbilt University, Nashville, May 2019

   8) "Minimizing p-frame energies", SEAM, University of Alabama, Tuscaloosa, March 2019

   9) "Γ-convergence of hypersingular Riesz energy functionals", Multivariate Algorithms and their Foundations in Number Theory, Johann Radon Institute, Linz, November 2018

   10) "Γ-convergence of hypersingular Riesz energy functionals", Texas Analysis and Mathematical Physics Symposium, Baylor University, October 2018

   11) "High-dimensional node generation with variable density", Fast Algorithms for Generating Static and Dynamically Changing Point Configurations, ICERM, March 2018

   12) "Variable density node distribution: Riesz minimizers and irrational lattices", Computational Methods and Function Theory, Lublin, July 2017

   13) "Generating point configurations via hypersingular Riesz energy with an external field", Joint Mathematics Meetings, Atlanta, January 2017

   14) 1st Northeastern Analysis Meeting, the College at Brockport, SUNY, October 2016

   15) Optimal and random point configurations, Institut Henri Poincaré, Paris, June-July 2016, *poster presentation*

2. Seminar and non-research talks

   1) Sphere Packings and Optimal Configurations (summer school), Hausdorff Center for Mathematics, September 2019

   2) "Minimizing p-frame energies", Mathematics Colloquium, Florida State University, Tallahassee, January 2019

   3) "Sumset estimates and the Menger's theorem", Analysis seminar, Florida State University, November 2018

   4) "Variable density node distribution: Riesz minimizers and irrational lattices", Computational and Applied Mathematics seminar, Oak Ridge National Laboratory, January 2018

   5) "Discretizing distributions with Riesz minimizers and irrational lattices", Analysis seminar, Florida State University, November 2017

   6) "Basics of large deviations and Cramér's theorem", Analysis seminar, Vanderbilt University, June 2017,

   7) "Ball multiplier problem", Analysis seminar, Vanderbilt University, April 2017,

   8) "Finite Grassmannian frames, spherical codes, and equiangular lines", Analysis seminar, Vanderbilt University, April 2016,

   9) "Riesz energy with an external field", Analysis seminar, Vanderbilt University, April 2015.

3. Visits

   1) Midwestern Workshop on Asymptotic Analysis, Indiana University in Bloomington, October 2015

   2) Minimal Energy Point Sets, Lattices, and Designs, ESI, Vienna, October 2014

   3) Recent Methods in Sphere Packing and Optimization (workshop), Oberwolfach, June 2014

Teaching

1. Calculus II, Florida State University, Fall 2019
2. Calculus II, Florida State University, Spring 2019
3. Calculus II, Vanderbilt University, Fall 2017 (*TA*)
4. Statistical learning, Vanderbilt University, Fall 2017 (*TA*)
5. Calculus I, Vanderbilt University, Spring 2017 (*TA*)
6. Calculus I, Vanderbilt University, Fall 2016 (*TA*)
7. Calculus I, Vanderbilt University, Spring 2016 (*TA*)
8. Calculus I, Vanderbilt University, Fall 2015 (*TA*)

Grants and awards

1. Florida State University Postdoctoral Travel Award, September 2019
2. Collaborate@ICERM "Codes and Designs: Optimal Discrete Measures" August 10 – 14, 2020
3. Vanderbilt Graduate Travel Award, September 2016

Service

1. (upcoming) Co-organizing the special section "Frames, designs, and optimal spherical configurations", Joint Mathematics Meetings, Denver, January 2020
2. Reviewer for AMS Mathematical Reviews, Constructive Approximation, Journal of Approximation Theory.

Outreach

1. Organizing the Undergraduate Mathematics Seminar at FSU in the Fall 2019
2. Participant of the Math Fun Day at Florida State University in 2018, one of the biggest scientific outreach events at FSU with over 1400 visitors
3. Have given several lectures on diverse topics at the Undergraduate Mathematics Seminar at Vanderbilt University
4. Have given lectures for high school students at the Math Circle at Vanderbilt University

Language proficiency and technical skills

1. Natural languages: English, Russian, Ukrainian (fluent); French (intermediate), Polish (beginner)
2. Programming languages: C/C++, CUDA C, Python, Matlab, R
3. Development tools: Git, Make, Linux development environment

Last updated: October 19, 2019.