

MAXIM GILULA

C320 Wells Hall ◊ Department of Mathematics
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EMPLOYMENT

Michigan State University
Postdoc

August 2016 -

EDUCATION

University of Pennsylvania
Ph.D in Mathematics
Adviser: Philip Gressman

August 2011 - May 2016

University of California, Irvine
B.S. in Mathematics (honors)

September 2007 - June 2011

RESEARCH INTERESTS

My interests lie mainly in harmonic analysis. In particular, estimates of scalar oscillatory integrals and oscillatory integral operators. I am currently studying stability of oscillatory integral estimates. Other interests include geometric measure theory and Muckenhoupt weights.

TEACHING EXPERIENCE

MTH 234: Multivariable Calculus
Instructor

Michigan State University
Spring 2017

- Multivariable calculus course covering Chapters 12-16 of Stewart's Calculus.
- 159 students.

MTH 234: Multivariable Calculus
Instructor

Michigan State University
Fall 2016

- 26 students

MTH 234: Multivariable Calculus
Instructor

Michigan State University
Fall 2016

- 24 students.

Math 241: Calculus IV
Instructor

University of Pennsylvania
Summer 2015

- A differential equations course for engineers.

Math 610: Functional analysis
Grader

University of Pennsylvania
Spring 2014

- A graduate-level functional analysis course.

Math 608: Complex analysis
Grader

University of Pennsylvania
Fall 2013

- A graduate-level complex analysis course.

Math 104: Calculus I
Instructor

University of Pennsylvania
Summer 2013

- Second semester calculus course covering integration techniques and infinite series.

Math 509: Advanced analysis
Teaching Assistant

University of Pennsylvania
Spring 2013

- A second semester master's level analysis course.

Math 114: Calculus II
Teaching Assistant

University of Pennsylvania
Fall 2012

- A multivariable calculus course covering the geometry of 2 and 3-dimensional space, as well as multivariate differentiation, integration, and Green's theorem.

PUBLICATIONS AND WORK IN PROGRESS DIRECTLY RELATED TO MY RESEARCH

1. "Some oscillatory integral estimates via real analysis," *submitted 10/16*. Can be found at <https://arxiv.org/abs/1611.00107>.
2. "Higher decay inequalities for multilinear oscillatory integrals," joint work with Philip T. Gressman and Lechao Xiao," *submitted 11/16*. Can be found at <https://arxiv.org/abs/1611.00107>.
3. "Van der Corput, the hard way," in progress.
4. "An analytic perspective for stability of oscillatory integrals," in progress.

OTHER PUBLICATIONS

1. "A class of simple rearrangements of the alternating harmonic series," to appear in *American Mathematical Monthly*.

GRANTS AND FELLOWSHIPS

Benjamin Franklin Fellowship 2011-2016
Awarded at UPenn. Funds two years of graduate school without teaching.

AWARDS AND HONORS

Good teaching award Fall 2014
Awarded at UPenn to five highest rated TA's the previous semester.

RECENT TALKS

Geometry of Measures in \mathbb{R}^n : Distribution, Rectifiability, and Densities *Michigan State*
Spring 2017
Planned for end of March

- Plan to discuss chapter 4 of the paper with the same name as the title. The goal is to study tangent measures and their applications. In particular, how to apply tools of tangent measures to study flat and non-flat uniform measures.

An analytic perspective on stability for oscillatory integrals in higher dimensions *ORAM*
March 2017
Conference Talk

- Plan to discuss new results and points of view relating to stability of asymptotics for oscillatory integrals in higher dimensions.

On Kirchheim-Preiss Theorem

Series of three talks

Michigan State University

Fall 2016

- Discussed “Uniformly Distributed Measures in Euclidean Spaces,” including a simple proof of Marstrand’s Theorem.

RECENT CONFERENCES

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|---|----------------------------|
| Introductory Workshop: Harmonic Analysis MSRI, Berkeley, CA | <i>January 23-27, 2017</i> |
| Ohio River Analysis Meeting Univ. Cincinnati, Cincinnati, Ohio | <i>March 25-26, 2017</i> |
| Geometry, Analysis and Probability (registered) KIAS, Seoul, South Korea | <i>May 8-12, 2017</i> |
| Recent Developments in Harmonic Analysis (registered) MSRI, Berkeley, CA | <i>May 15-19, 2017</i> |
| Harmonic Analysis and its Interactions (registered) ICMS, Edinburgh, Scotland | <i>July 17-21, 2017</i> |

MISCELLANEOUS

Languages:

- English: Fluent;
- Russian: Fluent;
- French: some reading proficiency;
- Spanish: some reading proficiency.

Citizenship: United States.

REFERENCES

- **Philip Gressman**, University of Pennsylvania. gressman@math.upenn.edu
- **Ignacio Uriarte-Tuero**, Michigan State University. ignacio@math.msu.edu
- **Alexander Volberg**, Michigan State University. volberg@math.msu.edu
- **Ryan Maccombs**, Michigan State University. maccomb1@math.msu.edu (teaching)