

# MAXIM GILULA

C320 Wells Hall ◊ Department of Mathematics  
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gilulama@math.msu.edu

## EMPLOYMENT

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**Michigan State University**  
Postdoc

*August 2016 -*

## EDUCATION

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**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

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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

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**MTH 254H: Honors Multivariable Calculus**  
*Instructor*

*Michigan State University*  
*Spring 2018*

- Proof based multivariable calculus course covering Marsden and Tromba's *Vector Calculus*, and more.

**MTH 234: Multivariable Calculus**  
*Instructor*

*Michigan State University*  
*Fall 2017*

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

**MTH 234: Multivariable Calculus**  
*Instructor*

*Michigan State University*  
*Fall 2017*

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

**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** *Michigan State University*  
*Instructor* *Fall 2016*
- 24 students.
- Math 241: Calculus IV** *University of Pennsylvania*  
*Instructor* *Summer 2015*
- A differential equations course for engineers.
- Math 610: Functional analysis** *University of Pennsylvania*  
*Grader* *Spring 2014*
- A graduate-level functional analysis course.
- Math 608: Complex analysis** *University of Pennsylvania*  
*Grader* *Fall 2013*
- A graduate-level complex analysis course.
- Math 104: Calculus I** *University of Pennsylvania*  
*Instructor* *Summer 2013*
- Second semester calculus course covering integration techniques and infinite series.
- Math 509: Advanced analysis** *University of Pennsylvania*  
*Teaching Assistant* *Spring 2013*
- A second semester master's level analysis course.
- Math 114: Calculus II** *University of Pennsylvania*  
*Teaching Assistant* *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 DIRECTLY RELATED TO MY RESEARCH

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1. "Higher decay inequalities for multilinear oscillatory integrals," joint work with Philip T. Gressman and Lechao Xiao," to appear in *Mathematical Research Letters*. Unedited version can be found at <https://arxiv.org/abs/1611.00107>.
2. "Some oscillatory integral estimates via real analysis," to appear in *Mathematische Zeitschrift*. DOI 10.1007/s00209-017-1956-2. Unedited version can be found at <https://arxiv.org/abs/1611.00107>.
3. "Van der Corput, the hard way," in progress.

## OTHER PUBLICATIONS

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1. "A class of simple rearrangements of the alternating harmonic series," to appear in *American Mathematical Monthly*. DOI 10.1080/00029890.2017.1409571.

## GRANTS AND FELLOWSHIPS

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

## AWARDS AND HONORS

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

Fall 2014

## RECENT TALKS

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- TBA** *UW Madison*  
*May 16-18, 2018*  
*Workshop in Fourier Analysis*
- Upcoming talk; content TBA.
- Higher decay inequalities for multilinear oscillatory integral operators** *Univ. of Hong Kong*  
*December 19, 2017*  
*Analysis Seminar*
- Discussed the contents of the paper with the same title, and its relation to recent and past developments in oscillatory integrals.
- Geometry of Measures in  $\mathbb{R}^n$ : Distribution, Rectifiability, and Densities** *Michigan State*  
*Spring 2017*  
*Series of 3 talks*
- 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** *Michigan State University*  
*Fall 2016*  
*Series of three talks*
- 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** *January 23-27, 2017*  
MSRI, Berkeley, CA
- Ohio River Analysis Meeting** *March 25-26, 2017*  
Univ. Cincinnati, Cincinnati, Ohio
- Geometry, Analysis and Probability** *May 8-12, 2017*  
KIAS, Seoul, South Korea
- Recent Developments in Harmonic Analysis** *May 15-19, 2017*  
MSRI, Berkeley, CA
- Harmonic Analysis and its Interactions** *July 17-21, 2017*  
ICMS, Edinburgh, Scotland
- Workshop in Fourier Analysis (*registered*)** *May 16-18, 2018*  
UW Madison, Madison, Wisconsin

## MISCELLANEOUS

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**Languages:**

- English: Fluent;

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

**Citizenship:** United States.

## REFERENCES

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- **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)