

# Lei Zhang

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EDUCATION **Ph.D.** in Math., The University of Minnesota 2011  
◊ Adviser: Dihua Jiang  
**B.S.** in Math., Peking University 2005

ACADEMIC APPOINTMENTS ◊ Assistant Professor, National University of Singapore 2014–present  
◊ Visiting Assistant Professor, Boston College 2011–2014  
Mentor: Solomon Friedberg

RESEARCH INTERESTS Automorphic Forms, Number Theory, Representation Theory, Harmonic Analysis, and Finite Groups of Lie Type.

- PUBLICATIONS AND PREPRINTS
1. *Automorphic Forms on Certain Symmetric Spaces*, Ph.D. Thesis, The University of Minnesota, 2011.
  2. *Gelfand Pairs* ( $\mathrm{Sp}_{4n}(F), \mathrm{Sp}_{2n}(E)$ ), *J. of Number Theory*, Volume 130, Issue 11, 2010, pages 2428–2441.
  3. *Poles of Certain Residual Eisenstein Series of Classical Groups*, *Pacific J. Math.* 264 (2013), no. 1, 83–123 (with Dihua Jiang and Baiying Liu).
  4.  $\mathrm{Sp}_{2n}(\mathbb{F}_{q^2})$ -Invariants In Irreducible Unipotent Representations of  $\mathrm{Sp}_{4n}(\mathbb{F}_q)$ . *J. of Algebra*, Volume 395, 2013, Pages 24–46.
  5. *A Product of Tensor Product L-functions of Quasi-splits Classical Groups of Hermitian Type*, accepted by *Geom. Funct. Anal.*, 2013 (with Dihua Jiang).
  6. *Eisenstein Series on Covers of Odd Orthogonal Groups*, submitted, arXiv:1301.3026v2, 2013 (with Solomon Friedberg).
  7. *Distinguished Tame Supercuspidal Representations of Symmetric Pairs* ( $\mathrm{Sp}_{4n}(F), \mathrm{Sp}_{2n}(E)$ ), submitted, 2013.
  8. *Whittaker-Shintani Functions for General Linear Groups*, submitted.
  9. *On Twisted Automorphic Descent for Special Odd Orthogonal Groups*, submitted, (with Dihua Jiang, Baiying Liu, Bin Xu).
  10. *Tokuyama-type formulas for type B*, submitted, arXiv:1409.0464 (with Solomon Friedberg).
  11. *The Exterior Cube L-function for  $U_6$* , preprint.
  12. *A New Approach to Get Central Values of L-functions*, preprint.
  13. *Automorphic Periods on  $(U_{2n}, \mathrm{Sp}_{2n})$* , in progress, (with Dihua Jiang).
  14. *On Local Factors of Classical groups of Hermitian Type*, in preparation (with Dihua Jiang).

## LECTURES

- ◇ Workshop on Automorphic Forms and Representations in Beijing, July 1–11, 2014.
- ◇ Workshop on The Future of Trace Formulas, Banff International Research Station, Canada, Jun. 1–6, 2014.
- ◇ AMS Sectional Meeting, The University of Maryland, Jan. 15–16, 2014.
- ◇ MIT Number Theory Seminar, Dec. 3, 2013.
- ◇ Number Theory Seminar, Boston University, Nov. 18, 2013.
- ◇ Automorphic Forms and Arithmetic Seminar, Columbia University, Nov. 15, 2013.
- ◇ MIT Lie Groups Seminar, Part (II), MIT, Nov. 13, 2013.
- ◇ MIT Lie Groups Seminar, Part (I), MIT, Nov. 6, 2013.
- ◇ Advances in the theory of automorphic forms and their L-functions The Schrödinger International Institute for Math Physics (Vienna), Austria, Oct. 16–26, 2013.
- ◇ Workshop on Whittaker Functions: Number Theory, Geometry and Physics, Banff International Research Station, Canada, Oct. 13–18, 2013.
- ◇ Maine-Québec Number Theory Conference, The University of Maine, Oct. 5–6, 2013.
- ◇ Summer Workshop on Arithmetic Geometry, Tsinghua University, Jul. 22–25, 2013.
- ◇ The Sixth International Congress of Chinese Mathematicians at Taiwan, Jul. 14–19, 2013.
- ◇ Mini-Workshop on Langlands Functoriality, The University of Minnesota, May 6–10, 2013.
- ◇ ICERM Semester Program on Automorphic Forms, Combinatorial Representation Theory and Multiple Dirichlet Series, ICERM, Apr. 2013.
- ◇ Number Theory Seminar, University of Wisconsin at Madison, Nov. 2012.
- ◇ Number Theory Seminar, Peking University, China, Jul. 2012.
- ◇ Working Seminar at Morningside Center of Mathematics, Chinese Academy of Science, Beijing, Jul. 2013.
- ◇ Lie Theory Seminar, The University of Minnesota, Jun. 2012.
- ◇ Number Theory and Algebraic Geometry Seminar, Boston College, Feb. 2012.
- ◇ AMS Eastern Sectional Meeting, Cornell University, Sept. 2011.
- ◇ Midwest Number Theory Conference for Graduate Students and Recent PhD's 2010, University of Michigan, Nov. 2010.
- ◇ Conference on Automorphic Forms and Representation Theory, University of Oklahoma, Oct. 2010.
- ◇ Working Seminar on Representations of  $p$ -adic Groups, The University of Minnesota, 2009–2010.
- ◇ Midwest Conference on Automorphic Forms, Representation Theory, and Number Theory, University of Iowa, Oct. 2009.
- ◇ Summer School at Morningside Center of Mathematics (MCM), Chinese Academy of Science, Beijing, 2008.
- ◇ Summer School at Morningside Center of Mathematics (MCM), Chinese Academy of Science, Beijing, 2007.

## SERVICE

- ◇ Department Service, Boston College:

Graduate Committee	2012–2013
Duties include reading graduate application materials and helping to make admission decisions.	
Number Theory & Algebraic Geometry Seminar Committee	2012–2013
Social Committee	2011–2012
◊ Reviewer for: AMS, Zentralblatt Math.	
◊ Referee for:	
NSA grant proposal	
Pacific Journal of Mathematics	
Journal of Number Theory	
Chinese Annals of Mathematics	
Indiana University Mathematics Journal	

EVENTS

- ◊ FRG Workshop in Cambridge, Periods of automorphic forms and applications to L-functions, May 23–25, 2014, Harvard University.
- ◊ Representations of reductive groups A conference dedicated to David Vogan on his 60th birthday, MIT, May 19–May 23, 2014.
- ◊ Current Developments in Mathematics 2013, Harvard University, Nov. 22–23, 2013.
- ◊ Gelfand Centennial Conference: A View of 21st Century Mathematics, MIT, Aug. 28–Sept. 2, 2013.
- ◊ Representations of Reductive Groups, The University of Utah, Jul. 8–12, 2013.
- ◊ Representation Theory, Automorphic Forms, and Complex Geometry, A conference in honor of the 70th birthday of Wilfried Schmid, Harvard University, May 20–23, 2013.
- ◊ FRG Workshop and Conference on Characters, Liftings, and Types, American University, Jun. 19–24, 2012.
- ◊ Automorphic Forms:  $L$ -functions, and Related Geometry, April 23–27, 2012, Yale University.
- ◊ FRG Conference: Periods of automorphic forms and applications to L-functions, Columbia University, New York, Sept. 16–18, 2011.
- ◊ Modular/Geometric Iwasawa Theory and  $p$ -adic  $L$ -functions, University of California at Los Angeles, Jun. 14–20, 2010.
- ◊ Number Theory and Representation Theory, a conference in honor of the 60th birthday of Benedict Gross, Harvard University, Jun. 2 –Jun. 5, 2010.
- ◊ Atkin Memorial Lecture and Workshop: Arithmetic cycles on Shimura varieties and automorphic forms, University of Illinois at Chicago, Apr. 30–May 1, 2010.
- ◊ Relative trace formula and periods of automorphic forms, AIM, Palo Alto, California, Aug. 24– 28, 2009.
- ◊ Representation Theory of Real Reductive Groups, University of Utah, Jul. 27–Jul. 31, 2009.
- ◊ Clay Mathematics Institute 2009 Summer School, Galois representations, University of Hawaii at Manoa, Honolulu, Hawaii, Jun. 15–Jul. 10, 2009.
- ◊ Representation Theory of Reductive Groups – Local and Global Aspects, the Erwin Schrödinger International Institute for Mathematical Physics, Vienna, Austria, Jan. 2 – Feb. 28, 2009.

- ◇ Representation of reductive groups over  $p$ -adic fields, summer school at MCM, MCM, Chinese Academy of Science, Beijing, China, Jul.–Aug., 2008.
- ◇ Analytic number theory and higher rank groups, the Courant Institute of Mathematical Sciences, New York, NY, May 19–May 23, 2008
- ◇ Current developments and directions in the Langlands program, a conference in honor of Robert Langlands, winner of the 2006 Nemmers Prize, Northwestern University, May 10–14, 2008.
- ◇  $L$ -Functions and Automorphic Forms, Conference Honor of the 60th Birthday of Dorian Goldfeld, Columbia University, May 18–23, 2007. ◇ Conference on Certain  $L$ -Functions on the occasion of Freydoon Shahidi’s 60th Birthday, Purdue University, Jul. 30–Aug. 3, 2007.

TEACHING  
EXPERIENCE

**Lecturer**

**Boston College  
2011 - 2014**

- ◇ MT 202: Multivariable Calculus.
- ◇ MT 210: Linear Algebra.
- ◇ MT 310: Introduction to Abstract Algebra.
- ◇ MT 460: Complex Variables.
- ◇ MT 845 (Graduate Course): Topics in Algebra/Number Theory.

**Discussion Instructor**

**University of Minnesota  
2005 - 2011**

- ◇ MATH 1151: Precalculus II.
- ◇ MATH 1271: Calculus I.
- ◇ MATH 2373: Linear Algebra and Differential Equation.
- ◇ MATH 2374: Multivariable Calculus and Vector Analysis.

COMPUTATIONAL  
SKILLS

- ◇ Software: Matlab, Mathematica, and GAP (Groups, Algorithms, Programming)