Curriculum Vitae

Personal Information

Name	Yichao Zhang	
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Phone Number	(cell) 86-18646555134	
Institute	Department of Mathematics,	Harbin Institute of Technology (China)

Education

Ph.D. in Mathematics	**University of Toronto**	**2010**
Master of Science in Mathematics	**University of Toronto**	**2005**
Bachelor of Science in Mathematics	**Peking University**	**2003**

Employment

Professor, Harbin Institute of Technology (China) *Summer 2015 to present*

Visiting Assistant Professor, the University of Arizona (USA) *Fall 2014 to Summer 2015*

Postdoctoral Fellow, University of Connecticut (USA) *Fall 2011 to Summer 2014*

Researcher, Pohang University of Science and Technology (Korea) *Fall 2010 to Summer 2011*

Instructor of Mathematics, University of Toronto (Canada) *Summer 2008 to Fall 2009*

Research Assistant, University of Toronto (Canada) *Fall 2006 to Summer 2010*

Teaching Assistant, University of Toronto (Canada) *Fall 2004 to Summer 2010*

Research Interests and Statement

My research interest is in number theory, and among all of its subfields I am most interested in the theory of modular forms. To be more specific, I am interested in various types of modular forms and their relations between them, as well as their applications, such as automorphic correction and (generalized) Kac-Moody algebras, lattice theory, and classical number theoretical problems.

Papers and Preprints

On sign changes of Fourier coefficients of modular forms,
Submitted, 2017 (Joint with W. Kohnen)

An isomorphism for spaces of modular forms of half-integral weight,
Submitted, 2017

Cohomology of SL_2 and related structures,
Communications in Algebra, 2017. DOI: 10.1080/00927872.2017.1335741 (Joint with K. Lux and N. V. Ngo)

Eigenform product identities for Hilbert modular forms,
Submitted, 2015. (Joint with K. Joshi)

Divisibility properties for weakly holomorphic modular forms with sign vectors,
International Journal of Number Theory 12 (8), 2107-2123, 2016

Weakly holomorphic modular forms and rank two hyperbolic Kac-Moody algebras,
Transactions of The American Mathematical Society 367 (12)(2015), 8843-8860. (With Henry H. Kim and Kyu-Hwan Lee)

Zagier duality and integrality of Fourier coefficients for weakly holomorphic modular forms,
Journal of Number Theory 155, 139-162, 2015

An isomorphism between scalar-valued modular forms and modular forms for Weil representations,
Ramanujan Journal 37(1), 181-201, 2015.

Weyl group multiple Dirichlet series for symmetrizable Kac-Moody root systems,
Transactions of AMS 367, 597-625, 2015. (With Kyu-Hwan Lee)

Newforms of level 4 and of trivial character,
Communications of the Korean Mathematical Society 29(4), 497-503, 2014.

Divisor functions over quaternion algebras and a type of identities,
Functiones et Approximatio, 46(2), 235-260, 2012.

Determining modular forms of general level by central values of convolution L-functions,
Acta Arithmetica, 150, 93-103, 2011.

L-functions in number theory,
Doctorate thesis, University of Toronto, 2010. Advisor: Henry H. Kim.

Divisor function for quaternion algebras and application to fourth moments of L-functions,
Journal of Number Theory 129(12), 3000-3019, 2009. (With Henry H. Kim)

Conferences or Seminar Talks

An isomorphism for spaces of modular forms of half-integral weight
Automorphic Representations and L-functions (SDU, Weihai, China)   *August 6 - 7, 2017*

An isomorphism for spaces of modular forms of half-integral weight
POSTECH-HIT Number Theory Workshop (HIT, Harbin, China)
Organizers: YoungJu Choie and **Yichao Zhang**   *June 26 - 30, 2017*

Divisibility of Fourier coefficients and a result of Siegel
Annual Meeting of Chinese Mathematical Society (Hohhot, Inner Mongolia, China)   *Sept 23 - 26, 2016*

Weakly holomorphic modular forms and rank two hyperbolic Kac-Moody algebras
Eisenstein Series on Kac-Moody Groups and Applications
to Physics, KIAS, Korea   *Nov. 12 - 20, 2015*

Modular Forms and Weakly Holomorphic Modular Forms
Seminar of Mathematics Department, Harbin Institute of Technology, Harbin, China.   *Sept. 25, 2015*

An Isomorphism between Scalar-Valued Modular Forms and Modular Forms for Weil Representations
Algebra and Number Theory Seminar, University of Arizona, Tucson, AZ.   *Oct. 7, 2014*

Vector Valued and Scalar Valued Modular Forms
Analysis Seminar, SUNY, Buffalo, NY.   *Oct. 30, 2013*

Vector Valued and Scalar Valued Modular Forms
Five College Number Theory Seminar, Amherst College, Amherst, MA.   *Oct. 8, 2013*

Vector Valued and Scalar Valued Modular Forms
Number Theory Seminar, Yale, New Haven, CT.   *Oct. 1, 2013*

Vector Valued and Scalar Valued Modular Forms
Algebra Seminar, UConn, Storrs, CT.   *Sept. 25, 2013*

Modular Forms
Algebra Seminar, UConn, Storrs, CT.   *Sept. 18, 2013*

Weyl group multiple Dirichlet series for symmetrizable Kac-Moody root systems
Algebra Seminar, UConn, Storrs, CT.   *March 13, 2013*

Multiple Dirichlet series   *March 6, 2013*
Algebra Seminar, UConn, Storrs, CT.

Fourth moments and an identity of the divisor function   *Oct 11, 2011*
Algebra Seminar, UConn, Storrs, CT.

Divisor function and fourth moments problem   *July 24- 26, 2011*
Tainwan-Postech Workshop-Number Theory, Postech, South Korea.

Divisor function over quaternion algebras and fourth moments problem   *May 12, 2011*
Number Theory Seminar, KIAS, South Korea.

L-functions and moments problem   *March 23, 2011*
T-Seminar, Postech, South Korea.

Divisor function over quaternion algebras and fourth moments of L-functions associated to newforms   *March 21- 23, 2011*
Number Theory and Arithmetic Geometry Seminar, Postech, South Korea.

An identity of divisor function defined over quaternion algebras   *January 28, 2010*
The Hong Kong University of Science and Technology, Hong Kong, P. R. China.

An identity of divisor functions defined over quaternion algebras   *December 4-7, 2009*
CMS Winter Meeting, Windsor, Canada.

Quaternion algebras and modular forms   *November 4, 2009*
Graduate Student Seminar, University of Toronto, Canada.

Fourth moments of L-functions of newforms   *March 11, 2009*
Number Theory/Representation Theory Seminar, University of Toronto, Canada.