

Curriculum Vitae

Zhiren Wang

Contact information

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Positions

- Assistant Professor, Pennsylvania State University, 2014-
- Gibbs Assistant Professor, Yale University, 2011-2014
- Postdoctoral Fellow, Mathematical Sciences Research Institute, Fall 2011

Education

- Ph.D., Mathematics, Princeton University, 2006-2011
Advisor: Prof. Elon Lindenstrauss
- M.S., Mathematics, University Paris-Sud (Orsay), 2005-2006
- M.S., Mathematics, Ecole Polytechnique, 2004-2006
- B.S., Mathematics, Fudan University, 2001-2004

Research interests

- Dynamical systems on homogeneous spaces
- Classification of group actions
- Diophantine approximation and geometry of numbers

Publications and Preprints

1. *Smooth and measure rigidity of hyperbolic lattice actions*
joint with A. Brown and F. Rodriguez Hertz, in preparation
2. *Quantitative density under abelian algebraic toral actions with non-maximal rank*
joint with E. Lindenstrauss, in preparation
3. *Rigidity properties of abelian actions on tori and solenoids*
joint with M. Einsiedler and E. Lindenstrauss, in preparation
4. $\times 2, \times 3, \times 5$ -invariant subsets on \mathbb{T}^2
joint with E. Lindenstrauss, preprint
5. *Multi-invariant measures and subsets on nilmanifolds*
submitted
6. *Global rigidity of abelian algebraic actions*
joint with F. Rodriguez Hertz, *Inventiones Mathematicae*, accepted
7. *Remarks on Euclidean minima*
joint with U. Shapira, *J. of Number Theory* (2012), Vol. 137, 93-121
8. *Rigidity of commutative non-hyperbolic actions by toral automorphisms*
Ergodic Theory & Dynamical Sys. (2012), Vol. 32, 1752-1782
9. *Topological self-joinings of Cartan actions by toral automorphisms*
joint with E. Lindenstrauss, *Duke Math. Journal* (2012), Vol. 161, 1305-1350

10. *Quantitative density under higher rank abelian algebraic toral actions*
Int. Math. Res. Notices (2011), Vol. 2011, 3744-3821

Teaching experience

- MATH 250, Ordinary Differential Equations, Fall 2014
- MAT 616, Smooth Ergodic Theory, Spring 2014
- MAT 120, Multivariable Calculus, Fall 2013
- MAT 614, Diagonal Actions on Homogeneous Spaces, Spring 2013
- MAT 115, Calculus, Fall 2012
- MAT 246, Ordinary Differential Equations, Spring 2012
- MAT 628, Random Walks on Homogeneous Spaces, Spring 2012
- MAT 102: Calculus II, Princeton Univ., Spring 2009
- Problem sessions, MAT 317: Complex Analysis, Princeton Univ., Fall 2009

Referee services

- Annals of Math., Inventiones Math., Israel Journal of Math.

Talks

- 2014: Recent Progress in Dynamical Systems and Related Topics, Banff, Canada
Dynamical Systems Seminar, Graduate Center, City Univ. of New York
2nd Rice Dynamics Workshop, Rice University
Maryland Workshop on Dynamical Systems, Univ. of Maryland
- 2013: Dynamics Seminar, Hebrew University of Jerusalem
Penn State Workshop on Dynamical Systems, Penn State Univ.
Group Actions Seminar, Univ. of Texas-Austin
Dynamical Systems Seminar, Northwestern University
Dynamics Seminar, University of Chicago
Invited lecture, International Congress of Chinese Mathematicians, Taipei
Ergodic Theory Seminar, University Paris 6 & 7
Rice Dynamics Workshop 2013, Rice University
Dynamics of Group Actions Seminar, Yale Univ.
Special session "Counting and Equidistribution", AMS Eastern Sectional Meeting
Geometry Seminar, ETH Zürich
Informal Geometry Seminar, Stanford Univ.
- 2012: Dynamical Systems Seminar, Penn State Univ.
Algebra Seminar, Wesleyan Univ.
Dynamics and Probability Seminar, Hebrew Univ. of Jerusalem
Dynamics of Group Actions Seminar, Yale Univ.
Chinese Univ. of Hong Kong
Conference: Analysis and Number Theory, Chongqing Univ.

Dynamical Systems Seminar, Univ. of Science and Technology of China
 Dynamical Systems Seminar, Fudan University, Shanghai
 National Univ. of Singapore
 Group Actions Seminar, Brown University
 Conference: Groups, Geometry, and Random Structure, Texas A&M Univ.
 2011: Penn State Workshop on Dynamical Systems, Penn State Univ.
 Dynamical Systems Seminar, Rice University
 Dynamics and Probability Seminar, Hebrew Univ. of Jerusalem
 Dynamical Systems Seminar, Northwestern University
 Fudan University, Shanghai
 2010: Ergodic Theory and Statistical Mechanics Seminar, Princeton University
 Oberwolfach workshop: Homogeneous Dynamics and Number Theory,
 2009: Dynamics and Geometry Seminar, Penn State Univ.
 Group Actions Seminar, Princeton University
 Conference: Dynamical Numbers, Max-Planck-Institute, Bonn
 University of Science and Technology of China, Hefei
 Short talk, Maryland Workshop on Dynamical Systems, Univ. of Maryland
 Ergodic Theory and Probability Theory seminar, Ben-Gurion Univ., Israel
 2008: Dynamics and Probability Seminar, Hebrew Univ. of Jerusalem

Grants and Awards

- NSF Grant DMS-1201453, 2012-2015
- Gold prize for Ph.D. thesis, New World Mathematics Awards (by International Congress of Chinese Mathematicians), 2012
- Simons Travel Grant, American Mathematical Society, 2011-2013