

# ALEXANDER GORODNIK

## 1. CONTACT INFORMATION

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*Born:* 8 June, 1975; Kyiv, Ukraine

## 2. ACADEMIC QUALIFICATIONS

June 2003 PH.D.  
Ohio State University, Department of Mathematics  
Thesis: “*Density and equidistribution of integer points*”  
June 1997 equivalent of M.S. (with honours)  
Kiev State University, Department of Mechanics and Mathematics  
Thesis: “*Factorised groups*”

## 3. APPOINTMENTS

09/2010– present	University of Bristol	<i>Reader</i>
09/2008–08/2010	University of Bristol	<i>Senior Research Fellow</i>
09/2007–08/2008	University of Bristol	<i>Research Fellow</i>
09/2007–05/2008	Princeton University	<i>Visiting Fellow</i>
09/2004–08/2007	California Institute of Technology	<i>Taussky–Todd Instructor</i>
09/2003–08/2004	University of Michigan	<i>Assistant Professor</i>
08/2003–09/2003	California Institute of Technology	<i>Visiting Scholar</i>
09/1998–05/2003	Ohio State University	<i>Teaching Assistant</i>
09/1997–06/1998	DYNA Company	<i>Software Engineer</i>

## 4. SPECIAL AWARDS, HONOURS AND DISTINCTIONS

2010–2015 ERC Starting Independent Researcher Grant  
2007–2012 RCUK Fellowship  
2004 Rackham Fellowship

## 5. RESEARCH

## (i) Published Works

Authored Books

- [1] (with A. Nevo) *The ergodic theory of lattice subgroups*, ANNALS OF MATHEMATICS STUDIES 172, Princeton University Press, 2010; 136 pages.

Academic Journal Papers (refereed)

- [2] (with A. Nevo) *Counting lattice points*, J. REINE ANGEW. MATH., in press, 42 pages; arXiv:0903.1515.
- [3] (with N. Shah) *Khinchin theorem for integral points on quadratic varieties*, MATH. ANN., in press, 19 pages; arXiv:0804.3530.
- [4] (with H. Oh and N. Shah) *Strong wavefront lemma for affine symmetric spaces*, ISRAEL J. MATH. 176 (2010), 419–444.
- [5] (with H. Oh and N. Shah) *Integral points on symmetric varieties and Satake compactifications*, AMER. J. MATH. 131 (2009), 1–57.
- [6] (with T. Hitchman and R. Spatzier) *Regularity of conjugacies of algebraic actions of Zariski dense groups*, JOURNAL OF MODERN DYNAMICS 2 (2008), 509–540.
- [7] (with F. Maucourant and H. Oh) *Manin’s conjecture on rational points of bounded height and adelic mixing*, ANNALES SCIENTIFIQUES DE L’ÉCOLE NORMALE SUPÉRIEURE 41 (2008), 47–97.
- [8] (with V. Bergelson) *Ergodicity and mixing of noncommuting epimorphisms*, PROC. LONDON MATH. SOC. 95 (2007), 329–359.
- [9] (with H. Oh) *Orbits of discrete subgroups on a symmetric space and the Furstenberg boundary*, DUKE MATH. J. 139 (2007), no. 3, 483–525.
- [10] *Open problems in dynamics and related fields*, JOURNAL OF MODERN DYNAMICS 1 (2007), no. 1, 1–35.
- [11] (with B. Weiss) *Distribution of lattice orbits on homogeneous varieties*, GEOM. FUNCT. ANAL. 17 (2007), no. 1, 58–115.
- [12] (with F. Maucourant) *Proximality and equidistribution on the Furstenberg boundary*, GEOM. DEDICATA 113 (2005), 197–213.
- [13] *Uniform distribution of orbits of lattices on spaces of frames*, DUKE MATH. J. 122 (2004), no. 3, 549–589.
- [14] *Oppenheim-type conjecture for systems of quadratic forms*, ISRAEL J. MATH. 140 (2004), 125–144.

- [15] *Oppenheim conjecture for pairs consisting of a linear form and a quadratic form*, TRANS. AMER. MATH. SOC. 356 (2004), no. 11, 4447–4463.
- [16] *Lattice action on the boundary of  $SL(n, \mathbb{R})$* , ERGODIC THEORY DYNAM. SYSTEMS 23 (2003), no. 6, 1817–1837.
- [17] *Local near-rings with commutative groups of units*, HOUSTON J. MATH. 25(2) (1999), 223–234.
- [18] *The product of an abelian group and a nilpotent group*, UKRAINIAN MATH. J. 51(9) (1999), 1314–1320.

Conference Contributions (refereed)

- [19] (with V. Bergelson) *Weakly mixing group actions: a brief survey and an example*, in MODERN DYNAMICAL SYSTEMS AND APPLICATIONS, B. Hasselblatt, M. Brin, Y. Pesin, eds., Cambridge University Press, New York, 2004.

(ii) **Submitted Works**

- [20] (with M. Borovoi and H. Oh) *Rational points on homogeneous varieties and equidistribution of adelic periods*, submitted, 77 pages; arXiv:0803.1996.
- [21] (with A. Ghosh and A. Nevo) *Diophantine approximation and automorphic spectrum*, submitted, 45 pages; arXiv:1007.0593.
- [22] (with A. Nevo) *On Arnold's and Kazhdan's equidistribution problems*, submitted, 23 pages; arXiv:1009.5076.
- [23] (with A. Nevo) *Lifting, restricting and sifting integral points on affine homogeneous varieties*, submitted, 22 pages; arXiv:1009.5217.

(iii) **Research Grants (as principal investigator)**

- *ERC Starting Independent Researcher Grant 239606*
- *EPSRC Standard Grant EP/H000091/1*
- *LMS Scheme 4 Grant 4730*
- *RCUK Fellowship in Dynamical Systems and Number Theory*
- *US National Science Foundation Grant DMS-0654413*
- *US National Science Foundation Grants DMS-0400631*
- *Rackham Fellowship at University of Michigan*

(iv) **Invited talks on international conferences**

- Conference “*Dynamics and geometry in spaces of negative curvature*”  
Bangalore, India, August 2010.
- Summer School “*Analytic Questions in Arithmetic*”, 7 lectures  
Mumbai, India, July 2010.
- Workshop “*Homogeneous Dynamics and Number Theory*”  
Oberwolfach, Germany, July 2010.
- Conference “*A Workshop on Infinite Ergodic Theory and Related Fields*”  
Rehovot, Israel, June 2010.
- Conference “*Dynamical Numbers: Interplay between Dynamical Systems and Number Theory*”  
Bonn, Germany, July 2009.
- Workshop “*Representation growth*”  
Sde Boker, Israel, June 2009.
- Summer School “*School on dynamical systems*”, 5 lectures  
Trieste, Italy, July 2008.
- Workshop “*Ergodic theory and geometry*”  
Manchester, UK, April 2008.
- Workshop “*Shrinking target properties*”  
Boston, USA, February 2008.
- Conference “*Measures and Dynamics on groups and homogeneous spaces*”  
Mumbai, India, December 2007.
- Workshop “*Ergodic theory of Lie group actions on parameter spaces*”  
Sde Boker, Israel, January 2007.
- Workshop “*Ergodic theory on homogeneous spaces*”  
Haifa, Israel, December 2006.
- Working Group “*Dynamical approach to rigidity of automorphisms*”  
Banff, Canada, June 2006.
- Workshop “*Effective equidistribution*”  
Bristol, UK, July 2006.
- Workshop “*Rational and Integral points on higher-dimensional varieties*”  
Berkeley, USA, April 2006.
- Workshop “*Rigidity, dynamics, group actions*”  
Banff, Canada, June 2005.
- Workshop “*Emerging applications of measure rigidity*”  
Palo Alto, USA, June 2004.
- Conference: “*Ergodic properties of geometric group actions*”  
Tegernsee, Germany, July 2003.

**(v) Other invited talks**

- American Institute of Mathematics, USA
- Banff International Research Station, Canada
- Ben Gurion Univeristy, Israel
- Brandeis University, USA
- Brown University, USA
- California Institute of Technology, USA
- Clay Mathematics Institute, USA
- ETH Zurich, Switzerland
- Hausdorff Center for Mathematics, Germany
- Hebrew University, Israel
- Indiana University at Bloomington, USA
- Institute of Mathematics, Ukraine
- International Centre for Theoretical Physics, Italy
- Mathematical Sciences Research Institute, USA
- Max Plank Institute, Germany
- Northwestern University, USA
- Ohio State University, USA
- Pennsylvania State University, USA
- Princeton University, USA
- Rice University, USA
- Royal Institute of Technology, Sweden
- State University of New York at Binghampton, USA
- Tata Institute of Fundamental Research, India
- Technion University, Israel
- Texas A&M University, USA
- Université Paris-Sud, Orsay, France
- University of Arizona, USA
- University of California at Los Angeles, USA
- University of Cambridge, UK
- University of Chicago, USA
- University of Durham, UK
- University of East Anglia, UK
- University of Illionois at Chicago, USA
- University of Manchester, UK
- University of Michigan, USA
- University of North Texas, USA
- University of Oregon, USA
- University of Texas at Austin, USA
- Warwick University, UK