

Alexander I. Bufetov

office: Department of Differential Equations
The Steklov Institute of Mathematics
Gubkina str. 8
119991 Moscow RUSSIA
home: 34-2-102 Musa Jalil Street
115573 Moscow RUSSIA
email: bufetov@mi.ras.ru

RESEARCH POSITION **The Steklov Institute of Mathematics**, Moscow
Department of Differential Equations,
Senior Researcher, since June 2009.

ACADEMIC POSITIONS **Rice University**, Houston, TX
Assistant Professor (tenure-track),
Edgar Odell Lovett Junior Chair,
2006-2011
The University of Chicago, Chicago, IL
Dickson Instructor, Sept. 2005-June 2006.

EDUCATION **Princeton University**.
Ph.D. in Mathematics, 2005.
Thesis advisor: Prof. Yakov G. Sinai.
Independent University of Moscow.
Diploma *cum laude* in Mathematics, 2000.
École Normale Supérieure de Paris.
Visiting student, fall 1999.

RESEARCH INTERESTS Ergodic theory
Teichmüller theory

PUBLICATIONS Alexander I. Bufetov, Caroline Series, A pointwise ergodic theorem for Fuchsian groups, *Mathematical Proceedings of the Cambridge Philosophical Society*, 2011, volume 151, issue 01, pp. 145 – 159.
Alexander I. Bufetov, Ergodic Decomposition for Measures Quasi-Invariant Under Borel Actions of Inductively Compact Groups, www.arxiv.org, May 2011.
Alexander I. Bufetov and Giovanni Forni, Limit Theorems for Horocycle Flows, www.arxiv.org, April 2011.
Alexander Bufetov, Mikhail Khristoforov, Alexey Klimenko Cesaro convergence of spherical averages for measure-preserving actions of Markov semigroups and groups, www.arxiv.org, January 2011.
Bufetov, A. I. Ergodic integrals of translation flows on flat surfaces. (Russian) *Uspekhi Mat. Nauk* 65 (2010), no. 6, 181–182.
Bufetov, Alexander I. Hoelder cocycles and ergodic integrals for translation flows on flat surfaces. *Electron. Res. Announc. Math. Sci.* 17 (2010), 3442
A. Bufetov, On the Vershik-Kerov Conjecture Concerning the Shannon-Macmillan-Breiman Theorem for the Plancherel Family of Measures on the Space of Young Diagrams, www.arxiv.org, 2010.

A. Bufetov, On the Vershik-Kerov conjecture concerning the entropy of the Plancherel measure, *Russian Mathematical Surveys*, vol. 65 (2010), no.1.

A. Bufetov, Finitely-additive measures on the asymptotic foliations of a Markov compactum, preprint, www.arxiv.org, 2009.

A. Bufetov, Suspension flows over Vershik's automorphisms, www.arxiv.org, 2008.

J. Athreya, A. Bufetov, A. Eskin, M. Mirzakhani, Lattice Point Asymptotics and Volume Growth on Teichmueller space, www.arxiv.org, 2008.

V. Araujo, A. Bufetov, A large deviations bound for the Teichmueller flow, to appear in *Ergodic Theory and Dynamical Systems*.

A. Bufetov, B.M. Gurevich, Existence and Uniqueness of the Measure of Maximal Entropy for the Teichmueller Flow on the Moduli Space of Abelian Differentials, to appear in *Matematicheskij Sbornik*.

A. Bufetov, Logarithmic asymptotics for the number of periodic orbits of the Teichmueller flow on Veech's space of zippered rectangles, *The Moscow Mathematical Journal*, 9(2009), no.2, p.17-39.

A. Bufetov; B.M. Gurevich On a measure with maximum entropy for the Teichmueller flow on the moduli space of abelian differentials. (Russian) *Funktsional. Anal. i Prilozhen.* 42 (2008), no. 3, 75–77; translation in *Funct. Anal. Appl.* 42 (2008), no. 3, 224–226

A. Avila, A. Bufetov, Exponential decay of correlations for the Rauzy-Veech-Zorich induction map, *Fields Institute Communications*, vol. 51, 2007.

A. Bufetov, Decay of correlations for the Rauzy-Veech-Zorich induction map on the space of interval exchange transformations and the Central Limit Theorem for the Teichmüller flow on the moduli space of abelian differentials, *Journal of the American Mathematical Society*, 19 (2006), 579–623.

A. Bufetov, Pointwise convergence of spherical averages for actions of free groups, *Annals of Mathematics*, 155 (2002), no.3, 929-944.

A. Bufetov, Operator ergodic theorems for actions of free semigroups and groups, *Functional Analysis and its Applications*, 34(2000), no.4, 239-251.

A. Bufetov, Ergodic theorems for actions of several mappings, *Russian Mathematical Surveys*, 54(1999), no.4, 835-836.

A. Bufetov, Topological entropy of free semigroup actions and skew-product transformations, *J. Dynam. Control Systems*, 5(1999), no.1, 137-143.

GRANTS AND AWARDS 2010 Alfred P. Sloan Research Fellowship.

Grant of the President of the Russian Federation MK-4893.2010.1, 2010-2012.

Joint RFBR-CNRS Grant 10-01-93115

Programme of the Russian Ministry of Education and Research 2.1.1/5328

Individual NSF Grant DMS 0604386, "Interval Exchange Maps and Dynamics in Moduli Space", 2006-2010.

Prize of the Moscow Mathematical Society, awarded "for the cycle of works applying the techniques of interval exchange maps and hyperbolic theory of dynamical systems to the study of Teichmüller flows", September 2005.

TALKS AT CONFERENCES Dynamical Systems Workshop, University of Maryland, April 2011.

International Conference dedicated to the 30th Anniversary of the Journal "Ergodic Theory and Dynamical Systems", Warwick Mathematics Institute, September 2010.

XXX Convegno di Analisi Armonica, Gargnano sul Garda, June 2010.

Workshop on Dynamical Dystems and PDE, Institut Mittag-Leffler, May 2010.

European Conference on Dynamical Systems and Number Theory, ICMS Edinburgh, May 2010.

Clay/MPIM/HCM Conference “Dynamical Numbers”, Max Planck Institute and The Hausdorff Centre for Mathematics, Bonn, July 2009.

Workshop on Complex Analysis and Algebraic Geometry, Yaroslavl, Russia, May 2009.

Maryland Dynamical Systems Meeting, College Park, April 2009.

Texas Geometry and Topology Conference, Houston, Feb. 2009

International Conference on Differential Equations and Dynamical Systems, Suzdal, Russia, July 2008, July 2010.

International Workshop on Teichmüller Theory, mini-course, Roscoff, Bretagne, June 2008.

XXVIII Convegno Internazionale di Analisi Armonica, Università di Perugia, Perugia, May 2008.

International Conference on Discrete Mathematics and Applications, The University of the Thai Chamber of Commerce, Bangkok, Thailand, March 2008.

From Dynamical systems to Statistical Mechanics, CIRM, Luminy, Feb. 2008.

“Random and stochastic dynamics” (UK School for Dynamical Systems), mini-course, Imperial College London, November 2007.

Research Trimestre on Dynamical Systems, Centro Ennio de Giorgi, Scuola Normale Superiore di Pisa, Pisa, Italy, May 2007.

Petrovsky International Conference, Lomonosov University, Moscow, May 2007.

XI Chetaev Conference, Russian Academy of Sciences, Irkutsk, Russia, June 2007.

XXV Annual Western States Mathematical Physics Meeting, Caltech, Pasadena, Feb. 2007

International Symposium on Dynamical Systems, UFB-IMP, Salvador de Bahia, Brazil, Oct. 2006

International Workshop on Global Dynamics Beyond Uniform Hyperbolicity, Chicago, May 2006

Maryland Workshop on Dynamical Systems and Related Topics, University of Maryland, March 2006.

Probability and Ergodic Theory Workshop, UNC–Chapel Hill, Feb. 2006

Partially hyperbolic dynamics, laminations, and Teichmüller flow Workshop, Fields Institute, Toronto, Jan. 2006.

TALKS AT
SEMINARS

Ergodic Theory Seminar, IMPA, Rio-de-Janeiro, Brazil, March 2011.

Séminaire “Géométrie et Dynamique”, Univ. Paris 6 and 7, Nov. 2010.

Séminaire de Systèmes Dynamiques, Univ. Paris 13, Nov. 2010

Colloquium, Moscow Mathematical Society, Nov. 2010.

Colloquium (Institute Seminar), Steklov Institute of Mathematics, May 2010.

Colloquium (Institute Seminar), Saint-Petersburg Branch of the Steklov Institute of Mathematics, Sept. 2009.

Colloquium of the Kiev Mathematical Society, Kiev, May 2009.

Colloquium, Rutgers, May 2009.

Colloquium, UT Austin, April 2009.

Mathematics and Computer Science Seminar, Victoria University Wellington, March 2009.

Colloquium, University of Hawaii, Nov. 2008.

Colloquium, Cornell, Nov. 2008.

Yale University, Ergodic Theory of Group Actions Seminar, Oct. 2008.
Dynamical Systems Seminar, Keio University, Yokohama, June 2008.
Dynamical Systems Seminar, The University of Kyoto, June 2008.
Dynamical Systems Seminar, Kyushu University, Fukuoka, June 2008.
Colloquium (Seminar GLOBUS), Independent University of Moscow, March 2008.
Dynamical Systems Seminar, Univ. Marseille, France, Dec. 2007.
Dynamical Systems Seminar, Univ. Maryland, Nov. 2007.
Dynamical Systems Seminar, Univ. Warwick, UK, Nov. 2007.
Colloquium, Univ. West Indies, Kingston, Jamaica, Oct. 2007.
Max Planck Institut Bonn, Mathematics Seminar, Bonn, Germany, May 2007.
IMPA, Dynamical Systems Seminar, Rio de Janeiro, Brazil, March 2007.
UC San Diego, Colloquium, Nov. 2006.
UCLA, Analysis Seminar, May 2006.
Columbia University, Probability Seminar, March 2006.
The Ben-Gurion University of the Negev, Colloquium, 2004.

REFEREEING Journal of the American Mathematical Society, Acta Mathematica, Advances in Mathematics, GAFA, Duke Mathematical Journal, Ergodic Theory and Dynamical Systems, Journal of Modern Dynamics, Theory of Computing Systems.
Israel-US Binational Science Foundation.

TEACHING INSTRUCTOR, Complex Analysis (MAT 427), Ergodic Theory (MAT 527),
EXPERIENCE Rice University 2009/10.
Lecturer, Young Diagrams, Steklov Institute of Mathematics, Moscow, fall 2009.
Lecturer, Ordinary Differential Equations, Lomonosov Univ. Moscow, fall 2009.
Lecturer, Scuola Matematica Interuniversitaria, Università degli Studi di Perugia, August 2009.
Instructor, Partial Differential Equations (MAT 381), Complex Analysis (MAT 427), Probability Theory (MAT 322), Rice University 2008/9.
Instructor, Ergodic Theory, Lomonosov Univ. Moscow, spring 2008.
Instructor, Introduction to Dynamical systems, “Maths in Moscow” (a residence programme for students from North America and Western Europe), spring 2008.
Instructor, Stochastic Processes, Independent University of Moscow, spring 2008.
Instructor, Graduate mini-course on Ergodic Theory (12 hours), University of Marseille, Dec.2007-Feb. 2008.
Instructor, Ergodic Theory (MAT 527), Partial Differential Equations (MAT 381), Rice University, fall 2007.
Instructor, Real Analysis (MAT 426, MAT 427), Multivariable Calculus (MAT 212), Rice University, 2006/7.
Lecturer at the Summer School “Modern Mathematics” for high-school and undergraduate students, Dubna, Russia, 2002–2008.
Instructor in honours calculus for freshmen (MAT 161, 163), The University of Chicago, fall 2005, spring 2006.
Instructor in single variable calculus (MAT 104), Princeton, fall 2003.

Co-organizer of the Junior Seminar for Mathematics majors, adviser of two junior papers on interval exchange maps, Princeton, spring 2003.

Mentor of Mathematics majors in the VIGRE programme, Princeton, 2002, 2003, 2004.

Lecturer of a graduate mini-course (ten two-hour lectures) on ergodic theory of group actions, University of Rome “La Sapienza”, Jan.-Feb. 2001.

SERVICE

Salomon Bochner Lecture Series Committee, Chair, Rice University, 2009/10.

Postdoctoral Hiring Committee, Member, Rice University, 2006 - 2010.

President’s Lecture Series Committee, Member, Rice University, 2007, 2008.

Milton Brockton Porter Lecture Series Committee, Member, Rice University, 2006-2009.

Salomon Bochner Lecture Series Committee, Member, Rice University, 2006-2009.

Wolfe Lecture Series Committee, Chair, Rice University, 2007.

Putnam Student Competition Coach, 2007, 2008.

Euler Undergraduate Maths Club Liaison, 2006, 2007.

Organizer of the Ergodic Theory Seminar, Rice University, 2006, 2007.

Organizer of the Dynamical Systems Working Seminar, Rice University, fall 2007.

Organizer of the Kerov Central Limit Theorem Working Seminar, Rice University, fall 2008.

SHORT TERM
VISITING
POSITIONS

IMPA, Rio-de-Janeiro, March 2011.

Hausdorff Institute of Mathematics, University of Bonn, June 2010.

Mittag-Leffler Institute of the Royal Swedish Academy of Sciences, May 2010.

Università degli Studi di Perugia, August 2009.

Max Planck Institut Bonn, Programme on “Dynamical Numbers”, July 2009.

Independent University of Moscow, spring 2008.

Université de Marseille Paul Cézanne, Dec. 2007-Jan. 2008, June 2009.

Institut Henri Poincaré, Paris, trimester “Time at work”, June 2005.

The Ben-Gurion University of the Negev, Be’er-Sheva, Jan.-Feb. 2004.

The Erwin Schrödinger Institute for Mathematical Physics, Vienna, Programme on Arithmetic, Automata, and Asymptotics, Jun.-Jul. 2002.

The Erwin Schrödinger Institute for Mathematical Physics, Vienna, Programme on Random Walks, Jun.-Jul. 2001.

The University of Rome “La Sapienza”, Jan.-Feb. 2001.

LANGUAGES

Russian, English, French, Italian, German, Spanish, Portuguese.