

Leonid Koralov

Curriculum Vitae

with a list of publications

Address:

Department of Mathematics,
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Research Interests:

Probability Theory, Stochastic Processes, Elliptic PDE's.

Dissertation Title:

Transport by Random Stationary Flows.

Dissertation Advisor:

James Glimm.

Employment:

2000 - present, Assistant Professor, Department of Mathematics,
Princeton University.

November - December 2001, Visitor, Department of Mathematics,
MIT.

July 2001, Visiting Professor, Department of Mathematics,
Universidad Autónoma de Madrid.

1998 - 2000, Member, School of Mathematics, Institute for
Advanced Study, Princeton (1999 - 2000 --NSF Postdoctoral
Fellow).

October 1997 - January 1998, Visiting Graduate Student, Center for
Nonlinear Studies, Los Alamos National Laboratory.

Education:

1992 - 1998, Graduate studies, Department of Mathematics, State
University of New York at Stony Brook. Ph.D. received August
1998.

1988 - 1991, Undergraduate studies, Department of Mathematics, Moscow State University.

Awards:

2004-2007, NSF Research Grant (principal investigator).

1999-2002, NSF Postdoctoral Fellowship.

1998-1999, Institute for Advanced Study Fellowship.

1998, Simons Prize to graduate students, SUNY at Stony Brook.

Teaching:

Taught a variety of courses at Princeton University (Calculus, at different levels, Multi-variable Calculus, Analysis and Measure Theory, Probability Theory). In addition, taught a large number of courses as a graduate student at Stony Brook.

Service:

2003 - present, Placement Officer for the Mathematics Department, which involves advising undergraduate students on course decisions and communicating with prospective mathematics majors as well as gifted high school students interested in applying to Princeton University.

Publications:

- *The Existence of Pair Potential Corresponding to Specified Density and Pair Correlation*, submitted to Communications on Pure and Applied Mathematics.
- (with Ya. Sinai) *Probability Theory, Random Processes and Random Fields*, textbook, to be published by Springer-Verlag, in preparation.
- *Random Perturbations of 2-Dimensional Hamiltonian Flows*, Probability Theory and Related Fields 129, pp 37-62 (2004).
- (with D. Dolgopyat and V. Kaloshin) *Sample Path Properties of the Stochastic Flows*, Annals of Probability, 32 (2004) no 1A, pp 1-27.
- (with D. Dolgopyat and V. Kaloshin) *A Limit Shape Theorem for Periodic Stochastic Dispersion*, Communications in Pure and Applied Mathematics, 57 (2004), no 9, pp 1127-1158.
- (with D. Dolgopyat and V. Kaloshin) *Hausdorff Dimension in Stochastic Dispersion*, Journal of Statistical Physics, Vol 108, Nos 5/6, pp 943-972 (2002).

- (with D. Dolgopyat and V. Kaloshin) *Long time behaviour of periodic stochastic dispersion*, to appear in Proceedings of ICMP 2002.
- (with R. Carmona and S. Molchanov) *Asymptotics for the Almost Sure Lyapunov Exponent for the Solution of the Parabolic Anderson Problem*, Random Operators and Stochastic Equations, Vol 9, No. 1, pp 77-86 (2001).
- *Transport by Vector Fields with Kolmogorov Spectrum*, Journal of Statistical Physics, Vol 98, Issue 1/2, pp 405-418 (2000)
- *Transport by Time Dependent Stationary Random Flow*, Communications in Mathematical Physics, 199, pp 649-681 (1999)
- *Effective Diffusivity of Stationary Vector Fields with Short Time Correlations*, Random Operators and Stochastic Equations, no 4, Vol 5, pp 303-324 (1997).
- (with S. Nechaev and Ya. Sinai) *Limit Behavior of a two-dimensional Random Walk with Topological Constraints*, Theory Probab. Appl 38 (1993), no 2, 296-306.
- (with S. Nechaev and Ya. Sinai) *Limiting Probability Distribution for a Random Walk with Topological Constraints*, Chaos 1 (1991), no 2, 131-133.