CURRICULUM VITAE

YURI KIFER

1. PERSONAL DATA

Born: January 13, 1948 Moscow USSR, married, two children
Address: 14 Hehalutz St., Jerusalem 96261, Israel
Fax: (972)-2-5630702
Phone: (972)-2-6526466 (h), (972)-2-6585965 (o)
e-mail: kifer et math.huji.ac.il

2. DEGREES

1971 M.A., Moscow State University, mathematics.
1974 Ph.D., Moscow State University, mathematics.

3. EMPLOYMENT

from 1988 Full Professor of Mathematics, Hebrew University of Jerusalem.
2003-2005 Director of the Landau Center
1995-1997 Chairman of Mathematical Studies, Institute of Mathematics, Hebrew University of Jerusalem.
1982-88, Associate Professor, Hebrew University of Jerusalem.
1978-82 Senior Lecturer, Hebrew University of Jerusalem.
1974-78 Scientific-Research Worker, Institute of Automatization, Moscow.

4. VISITING POSITIONS

1979 (April - June) Visiting Assoc., Professor Northwestern University, Evanston (on leave from Hebrew University).
1982-83 Visiting Assoc. Professor, University of Maryland (on leave from Hebrew University).
1983 (September - October) Visiting Professor, Univ. de Paris, Sud (Orsay).
1987-88 Visiting Associate Professor at Cornell University, Ithaca, N.Y. (on leave from Hebrew University).
1992 (September - December) Visiting Professor,Department of Mathematics, University of North Carolina at Chapel Hill (on leave from Hebrew University).
1994-1995 (September–January) Visiting Professor, Department of Mathematics, Princeton University (on leave from Hebrew University).
1998 (September - October) Visiting Professor, Univ. de Paris, Sud (Orsay).
2016 (August - December) Bogen family visiting professor, University of Pennsylvania, Philadelphia, USA.

5. AWARDS AND HONORS

1997 Japan Society for the Promotion of Sciences award.
1998 Invited talk, International Congress of Mathematicians, Berlin.
1999 Humboldt–Meitner research award (prize), Germany
2006 Humboldt foundation reinvitation award.

6. GRANTS

1981-83 U.S. - Israel Binational Science Foundation Grant 2529
1983 National Science Foundation Grant MCS82-04024
1985-88 U.S. - Israel Binational Science Foundation Grant 84-00028.
1989-92 U.S. - Israel Binational Science Foundation Grant 88-00361/1
1993-98 U.S. - Israel Binational Science Foundation Grant 92-00087/1
2000-2003 Israeli Science Foundation Grant 108/00.
2001-2004 U.S. - Israel Binational Science Foundation Grant 2000211.
2003-2006 Niedersachsen–Volkswagen grant.
2006-2010 Israeli Science Foundation Grant 130/06.
2010-2015 Israeli Science Foundation Grant 82/10.
2013-2016 Einstein Foundation (Berlin) Grant.

7. BOOKS AND LECTURE NOTES

- Ergodic Theory of Random Transformations, Birkhäuser, 1986.
- Random Perturbations of Dynamical Systems, Birkhäuser, 1988.
- Topics on Large Deviations and Random Perturbations, Carolina Lecture Series, Univ. North Carolina, Chapel Hill, 1993.
- Large deviations and Adiabatic Transitions for Dynamical Systems and Markov Processes in Fully Coupled Averaging, Memoirs of the Amer. Math. Soc. 944, AMS, Providence, 2009.
- (with Y. Hafouta) Nonconventional Limit Theorems and Random Dynamics, World Scientific, Singapore, 2018.
- Lectures on Mathematical Finance and Related Topics, World Scientific, Singapore, 2020.

8. PhD STUDENTS

- (with S. Kamin) A. Eizenberg (1983–1988).
- Y. Dolinsky (2005–2010).
- Y. Iron (2008–2012).
- (with M.Hochman) A. Rapaport (2013–2018).
- Y. Hafouta (2014–2019).
- (with Y. Dolinsky) B. Gottesman (2015–2020).

9. FULL LIST OF PUBLICATIONS

- 1.   The optimal policy in games with unbounded sequence of moves, Theory of Probability and its Appl. v. 14,no.2(1969), 279-286.
- 2.   On optimal stopping rules in games with the continuous time, Uspehi Mat. Nauk v. 25,no.3(1970), 271-272.
- 3.   Optimal stopped games, Theory of Probability and its Appl. v. 16,no.1(1971), 185-189.

- 4. Limit theorems for conditional Brownian motion in Euclid and Lobachevski spaces, Uspehi Mat. Nauk, v. 26,no.3(1971), 203-204 (Russian).
- 5. Optimal stopping in games with continuous time, Theory of Probability and its Appl. v. 16,no.3(1971), 545-550.
- 6. (with S.A. Pirogov) Decomposition of quasi-invariant measures into ergodic ones, Russ. Math. Surveys v. 27,no1(1972), 79-84.
- 7. (with D.A. Pirogov) On decomposition of quasi-invariant measures into ergodic components, Uspehi Mat. Nauk v. 27, no.5(1972), 239-240 (Russian).
- 8. Boundary behaviour of conditional diffusion processes, Theory of Probability and its Appl. v. 18, N1 (1973), 160-164.
- 9. Some theorems on small random perturbation of dynamical systems, Uspehi Mat. Nauk, v. 19,no.3(1974), 205-206. (Russian).
- 10. On the limit behaviour of invariant measures of small random perturbations of some dynamical systems, Soviet Math. Dokl. v. 15,no.3(1974), 918-921.
- 11. On small random perturbations of diffeomorphisms, Uspehi Mat. Nauk, v. 29, no.4 (1974), 173-174 (Russian).
- 12. Certain results concerning small random perturbations of dynamical systems, Theory of Probability and its Appl. v. 19, no.3(1974), 487-505.
- 13. On small random perturbations of some smooth dynamical systems, Math. USSR Izvestija v. 8, no.5(1974), 1083-1107.
- 14. On small random perturbation of dynamical systems, Theory of Probability and its Appl. v. 20, no.3(1975), 662-663.
- 15. Brownian motion and harmonic functions on manifolds of negative curvature, Theory of Probability and its Appl. v. 21, no.1(1976), 81-95.
- 16. On spectrum of small random perturbations of dynamical systems, 4th International Symp. on Information Theory, Abstracts of Papers. Part 1. p.p. 78-80, Moscow-Leningrad 1976 (Russian).
- 17. (with V.M. Alexeyev and A.V. Kochergin) On Transformation of random impulse flows by threshold neuron, in "Function Structure of Analisators" Moscow Univ., 1976, p.p. 140-160 (Russian).
- 18. On the asymptotics of the transition probability density of processes with small diffusion, Theory of Probability and its Appl., v. 21,no.3(1976), 513- 522.
- 19. On small random perturbations of hyperbolic limit sets, Uspehi Mat. Nauk v. 32, no.1 (1977), 193-194 (Russian).
- 20. What can one get to know about the dynamical system from the spectrum of its small random perturbation? Second Vilnius Conference on Probability Theory and Mathematical Statistics, Abstracts of Communications v. 3, Vilnius 1977, 101-102.
- 21. On the spectral stability of invariant tori under small random perturbations of dynamical systems, Soviet Math. Dokl. v. 18, no.4(1977), 952-956.
- 22. On spectrum of some differential operators with small parameter in the highest derivatives, Uspehi Mat. Nauk, v. 32, no.5(1977), 187-188 (Russian).

- 23.   On spectrum of small random pertubations of dynamical systems in: Multicomponent random systems, Advances in Probability and Related Topics 6, 423-450, Marcel Dekker, N.Y. 1980.
- 24.   On the principal eigenvalue in a singular perturbation problem with hyperbolic limit points and circles. J. of Differential Equations 37 (1980), 108-139.
- 25.   A probabilistic version of Bowen-Ruelle's volume lemma, in: Proc. of the International Conference in Global Theory of Dynamical Systems held in Northwestern Univ. in 1979, Lecture Notes in Math. 819 (1980), 291-299.
- 26.   Stochastic stability of the topological pressure, J.D'Analyse Mathematique 38 (1980), 255-286.
- 27.   The exit problem for small random pertubations of dynamical systems with a hyperbolic fixed point, Israel J. of Math. 40 (1981), 74-96.
- 28.   The inverse problem for small random perturbations of dynamical systems, Israel J. of Math. 40 (1981), 165-174.
- 29.   Perturbations of random matrix products , Z. Wahrscheinlichkeiststheorie und Verw. Gebiete 61 (1982), 83-95.
- 30.   (with E. Slud) Perturbations of random matrix products in a reducible case, Ergodic Theory and Dynamical Systems 2 (1982), 367-382
- 31.   (with H. Furstenberg) Random matrix products and measures on projective spaces, Israel J. Math. 46 (1983), 12-32.
- 32.   Characteristic exponents of dynamical systems in metric spaces, Ergodic theory and Dynamical Systems 3 (1983), 119-127.
- 33.   Entropy via random perturbations, Trans. Amer. Math. Soc. 282 (1984), 589-601.
- 34.   A multiplicative ergodic theorem for random transformations, J. D'Analise Math. 45 (1985), 207-233.
- 35.   Multiplicative ergodic theorems for random diffeomorphisms, Contemporary Math. 50 (1986), 67-78.
- 36.   Characteristic exponents for random homeomorphisms of metric spaces, Lecture Notes in Math. 1186 (1986), 74-84.
- 37.   (book) Ergodic Theory of Random Transformations, Birkhauser, 1986.
- 38.   General random perturbations of hyperbolic and expanding transformations, J. D'Analise Math. 47 (1986), 111-150.
- 39.   (with A. Katok) Random perturbations of transformations of an interval, J. D'Analise Math. 47 (1986), 193-237.
- 40.   Brownian motion and positive harmonic functions on complete manifolds of non-positive curvature, Pitman Research Notes in Math., 150, Longman (1986), 187-232.
- 41.   (with A. Eizenberg) The asymptotic behavior of the principal eigenvalue in a singular perturbation problem with invariant boundaries, Probability Theory and Related Fields 76 (1987), 439-476.
- 42.   (with M. Brin) Dynamics of Markov chains and stable manifolds for random diffeomorphisms, Ergodic Theory of Dynamical Systems 7 (1987), 351-374.
- 43.   Bounded harmonic functions on nonamenable covers of compact manifolds, Israel J. of Math. 61 (1988),170-178.

- 44.   (Book) Random Perturbations of Dynamical Systems, Birkhauser, 1988.
- 45.   A note on stochastic models with expanding transformations, in: Proceedings of Symposium on Stochastic Mechanics and Stochastic Processes, Swansea, Lecture Notes in Mathematics 1325, pp. 131-140, Springer-Verlag, Berlin, 1988.
- 46.   A note on the integrability of C^r-norms of stochastic flows and applications, in: Proceedings of Symposium on Stochastic Mechanic and Stochastic Processes, Swansea, Lecture notes in Mathematics 1325, pp. 125-131, Springer-Verlag, Berlin, 1988.
- 47.   (with Y. Yomdin) Volume growth and topological entropy for random transformations, in: Proceedings of Special Year on Dynamical Systems at University of Maryland, 1986-87, Lecture Notes in Mathematics 1342, pp. 361-373, Springer-Verlag, Berlin, 1988.
- 48.   Harmonic functions on Riemannian manifolds, in: Geometry of Random Motion, Contemporary Mathematics 73, pp. 159-172, AMS Providence, 1988.
- 49.   Attractors via random perturbations, Commun. Math. Phys. (1989), 445-455.
- 50.   (with F. Ledrappier) Hausdorff dimension of harmonic measures on negatively curved manifolds, Trans. Amer. Math. Soc. 318(1990), 685-704.
- 51.   A discrete time version of the Wentzell-Freidlin theory, Annals of Probability, 18(1990),1676-1692.
- 52.   Principal eigenvalues, topological pressure, and stochastic stability of equilibrium states, Israel J. Math., 70(1990),1-47.
- 53.   Large deviations in dynamical systems and stochastic processes, Trans. Amer. Math. Soc. 321(1990),505-524.
- 54.   A lower bound for Hausdorff dimension of harmonic measures on negatively curved manifolds, Israel J. Math.,71(1990),339-348.
- 55.   Random perturbations of dynamical systems:a new approach, Lectures in Applied Math. 27 (1991), 163-173.
- 56.   (with S. Newhouse) A global volume lemma and applications, Israel J. Math. 74 (1991), 209-223.
- 57.   Large deviations for random expanding maps, in: Lyapunov exponents (ed. L.Arnold, H.Crauel, J.-P.Eckmann) Lecture Notes in Math. 1486 (1991), 178-186.
- 58.   Principal eigenvalues and equilibrium states corresponding to weakly coupled parabolic systems of PDE, J.D'Analyse Mathematique 59(1992), 89-102.
- 59.   Equilibrium states for random expanding transformations, Random and Computational Dynamics 1(1992), 1-31.
- 60.   Averaging in dynamical systems and large deviations, Inventiones mathematicae 110 (1992), 337-370.
- 61.   A variational approach to the random diffeomorphisms type perturbations of a hyperbolic diffeomorphism, in:Mathematical Physics X, p.334-340, ed.K.Schmudgen, Springer-Verlag,1992.
- 62.   (with M Brin) Harmonic measures on covers of Riemannian surfaces of nonpositive curvature, Trans. Amer. Math. Soc. 340(1993), 373-393.

- 63.   Topics on Large Deviations and Random Perturbations, Carolina Lecture Series, Univ.of North Carolina,Chapel Hill,1993.
- 64. Large deviations,averaging,and periodic orbits of dynamical systems, Comm. Math. Phys. 162(1994), 33-46.
- 65.   (with A.Eizenberg and B.Weiss) Large deviations for Z^d-actions, Comm. Math. Phys. 164 (1994), 433-454.
- 66.   Harmonic functions on Riemannian manifolds: a probabilistic approach, in: The Dynkin Festschrift, Markov processes and their Applications (ed. M.I.Freidlin), p.p.199-207, Birkhäuser, Boston, 1994.
- 67.   Spectrum, harmonic functions, and hyperbolic metric spaces, Israel J. Math. 89 (1995), 377-428.
- 68.   (with M.Brin) Brownian motion and harmonic functions on polygonal complexes, in: Stochastic Analysis (ed. M.Cranston and M.Pinsky), AMS Proc. Symposia in Pure Math. 57 (1995), 227-237.
- 69.   Markov processes and harmonic functions on hyperbolic metric spaces, in: Stochastic Analysis (ed. M.Cranston and M.Pinsky), AMS Proc. Symposia in Pure Math. 57 (1995), 307-322.
- 70.   Limit theorems in averaging for dynamical systems, Ergod. Theory and Dynam. Sys. 15 (1995), 1143-1172.
- 71.   Multidimensional random subshifts of finite type and their large deviations, Prob. Theory and Relat. Fields 102 (1995), 223-248.
- 72.   Fractals via random iterated function systems and random geometric constructions, in: Fractal Geometry and Stochastics (ed. C.Bandt, S.Graf, and M.Zähle), Progress in Probability 37, Birkhäuser, 1995.
- 73.   (with K.Khanin) Thermodynamic formalism for random transformations and statistical mechanics, in: Sinai's Moscow Seminar on Dynamical Systems (ed. L.A.Bunimovich, B.M.Gurevich, Ya.B.Pesin), Amer. Math. Soc. Translations 171 (1995), 107-140.
- 74.   Large deviations for paths and configurations counting, in: Ergodic Theory of Z^d-Actions (ed. M.Pollicott and K.Schmidt), London Math. Soc. Lecture Notes Series 228 (1996), 415-432.
- 75.   Fractal dimensions and random transformations, Trans. Amer. Math. Soc. 348 (1996), 2003-2038.
- 76.   Perron-Frobenius theorem, large deviations, and random perturbations in random environments, Math. Zeitschrift 222 (1996), 677-698.
- 77.   (with M.Cranston and W.S.Kendall) Gromov's hyperbolicity and Picard's little theorem for harmonic maps, in: Stochastic Analysis and Applications (Proceedings of the Fifth Gregynog Symposium 1995, ed. I.M.Davies, A.Truman, and K.D.Elworthy), p.p. 139-164, World Scientific, Singapore, 1996.
- 78.   (with H.Kunita) Random positive semigroups and their random infinitesimal generators, in: Stochastic Analysis and Applications (Proceedings of the Fifth Gregynog Symposium 1995, ed. I.M.Davies, A.Truman, and K.D.Elworthy), p.p. 270-285, World Scientific, Singapore, 1996.
- 79.   The Burgers equation with a random force and a general model for directed polymers in random environments, Prob. Theory and Relat. Fields 108 (1997), 29-65.

- 80. Computations in dynamical systems via random perturbations, Discrete and Cont. Dynam. Systems 3 (1997), 457-476.
- 81. Limit theorems for random transformations and processes in random environments, Trans. Amer. Math. Soc. 350(1998), 1481–1518.
- 82. Random dynamics and its applications, Proc. ICM98, vol.II, p.p.809–818, Documenta Mathematica, Bielefeld 1998.
- 83. (with V.M.Gundlach) Random hyperbolic systems, in: Stochastic Dynamics (H.Crauel and M.Gundlach eds.), Springer-Verlag, 1999, p.p. 117-145.
- 84. (with V.M.Gundlach) Expansiveness, specification, and equilibrium states for random bundle transformations, Discrete and Continuous Dynam. Sys. 6 (2000), 89–120.
- 85. Game options, Finance and Stochastics 4(2000), 443–463.
- 86. On the topological pressure for random bundle transformations, in: Rohlin's memorial volume (V.Turaev and A.Vershik ed.), Amer. Math. Soc. Transl. (2) v.202 (2001), 197–214.
- 87. (with M.Brin) Brownian motion, harmonic functions and hyperbolicity for Euclidean complexes, Math. Zeitschrift. 237 (2001), 421–468.
- 88. "Random" random matrix products, J. D'Analyse Math. 83 (2001), 41–88.
- 89. (with N.Enriquez) Markov chains on graphs and Brownian motion, J. Theoretical Probab., 14 (2001), 495–510.
- 90. Averaging and climate models, in: Stochastic Climate Models (ed. P.Imkeller and J. von Stroch), Progress in Probability v.49, Birkhäuser, Basel, 2001.
- 91. Random f-expansions, Proc. Simposia in Pure Math., 69, p.p. 385–407, Amer. Math. Soc. (2001).
- 92. (with Y.Peres and B.Weiss) A dimension gap for continued fractions with independent digits, Isr. J. Math. 124 (2001), 61–76.
- 93. Stochastic versions of Anosov's and Neistadt's theorems on averaging, Stoch. and Dynam. 1 (2001), 1–21.
- 94. (with B.Weiss) Generating partitions for random transformations, Ergodic Th. & Dyn. Sys, 22 (2002), 1–18.
- 95. (with A. Eisenberg) Large deviations for probabilistic cellular automata, J. Stat. Phys. 108 (2002), 1255–1280.
- 96. Averaging in difference equations driven by dynamical systems, Asterisque 287 (2003), 103-123.
- 97. L^2 diffusion approximation for slow motion in averaging, Stoch. and Dynam. 3 (2003), 213–246.
- 98. Averaging principle for fully coupled dynamical systems and large deviations, Ergod. Th. and Dyn. Sys., 24 (2004), 847-871.
- 99. (with V.Bakhtin) Diffusion approximation for slow motion in fully coupled averaging, Probab. Th. Rel. Fields, 129 (2004), 157-181.
- 100. (with V. Kaimanovich and B.-Z. Rubshtein) Boundaries and harmonic functions for random walks with random transition probabilities, J. of Theor. Probab., 17 (2004), 605–646.
- 101. Some recent advances in averaging, in: Modern Dynamical Systems and Applications, Cambridge Univ. Press., 2004, p.p. 385-403.

- 102.   (with A. Eisenberg) Large deviations for probabilistic cellular automata II, J. Stat. Phys. 117 (2004), 61–105.
- 103.   Another proof of the averaging principle for fully coupled dynamical systems with hyperbolic fast motions, Disc. Cont. Dyn. Sys. 13 (2005), 1187–1201.
- 104.   (with Pei-Dong Liu) Random Dynamics, Handbook on Dynamical Systems, vol. 1B, p.p.379–499, Elsevier, Amsterdam 2006.
- 105.   Error estimates for binomial approximations of game options, Ann. Appl. Probab. 16 (2006), 984–1033. Correction: 16 (2006), 2273–2275. Another correction (with Y.Dolinsky): 18 (2008), 1271–1277.
- 106.   Optimal stopping and strong approximation theorems, Stochastics 79 (2007), 253–273.
- 107.   (with Y.Dolinsky) Hedging with risk for game options in discrete time, Stochastics 79 (2007), 169–195.
- 108.   Convergence, nonconvergence and adiabatic transitions in fully coupled averaging, Nonlinearity 21 (2008), T27–T32.
- 109.   (with M.Denker and M.Stadlbauer) Conservativity of random Markov systems, Ergodic Th.& Dyn. Sys. 28 (2008),67–85.
- 110.   (with M.Denker and M.Stadlbauer) Thermodynamic formalism for random countable Markov shifts, Disc. Cont. Dyn. Sys. 22 (2008), 131–164.
- 111.   (with V.Bakhtin) Nonconvergence examples in averaging, Contemporary Math. 469 (2008), 1–18.
- 112.   (with Y.Dolinsky) Binomial approximations of shortfall risk for game options, Ann. Appl. Probab. 18 (2008), 1737–1770.
- 113.   Thermodynamic formalism for random transformations revisited, Stochastics and Dynamics 8 (2008), 77–102.
- 114.   Large deviations and adiabatic transitions for dynamical systems and Markov processes in fully coupled averaging, Memoirs Amer. Math. Soc. 944 (2009).
- 115.   Nonconventional limit theorems, Probab. Theory Rel. Fields 148 (2010), 71–106.
- 116.   (with Y. Dolinsky) Binomial approximations for barrier options of Israeli style, Annals of Dynamic Games vol.XI, Birkhäuser, 2010.
- 117.   (with Y. Dolinsky and Y. Iron) Perfect and partial hedging for swing game options in discrete time, Math. Finance 21 (2011), 447-474.
- 118   (with Y. Iron) Hedging of swing game options in continuous time, Stochastics 83 (2011), 365-404.
- 119   A nonconventional strong law of large numbers and fractal dimensions of some multiple recurrence sets, Stoch. and Dynam. 12 (2012), 1150023.
- 120   A strong invariance principle for nonconventional sums, Probab. Th. Rel. Fields 155 (2013), 463-486.
- 121   Nonconventional Poisson limit theorems, Israel J. Math., Israel J. Math. 195(2013), 373-392.
- 122   Dynkin games and Israeli options, ISRN Probab. Statist., 2013.
- 123   Hedging of game options in discrete markets with transaction costs, Stochastics, 85(2013), 667-681.

- 124 A nonconventional invariance principle for random fields, J. Theoret. Probab, 26(2013), 489-513.
- 125 Strong approximations for nonconventional sums and almost sure limit theorems, Stoch. Proc. Appl. 123 (2013), 2286-2302.
- 126 (with S.R.S. Varadhan) Nonconventional limit theorems in discrete and continuous time via martingales, Annals of Probab., 42(2014), 649-688.
- 127 Nonconventional limit theorems in averaging, Ann. l'Inst. H. Poincaré (B), Probab. Statist. 50(2014), 236-255.
- 128 (with S.R.S. Varadhan) Nonconventional large deviations theorems, Probab. Th. Rel. Fields, 158(2014), 197-224.
- 129 (with Y. Iron) Error estimates for binomial approximations of game put options, ISRN Probab. Statist., 2014.
- 130 (with A. Rapaport) Poisson and compound Poisson approximations in conventional and nonconventional setups, Probab. Th. Rel. Fields, 160 (2014), 797-831.
- 131 Lectures on large deviations in probability and dynamical systems, Proc. Symp. Pure Math. 89(2015), AMS, Providence, p.p.45-80.
- 132 (with Y. Hafouta) A nonconventional local limit theorem, J. Theoret. Probab. 29 (2016), 1524–1553.
- 133 An Erdös-Rényi law for nonconventional sums, Electron. Commun. Probab. 20 (2015), no.83, 1-8.
- 134 (with Y. Hafouta) Berry–Esseen type estimates for nonconventional sums, Stoch. Proc. Appl. 126 (2016), 2430–2464.
- 135 (with Y. Dolinsky) Risk minimization for game options in markets imposing minimal transaction costs, Advances Appl. Probab. 48 (2016), 926–946.
- 136 (with Y. Hafouta) Nonconventional polynomial CLT, Stochastics 89 (2017), 550–591.
- 137 (with S.R.S. Varadhan) Tails of polynomials of random variables and stable limits for nonconventional sums, J. Stat. Phys. 166 (2017), 575–608.
- 138 Functional Erdős–Rényi law of large numbers for nonconventional sums under weak dependence, Elect. J. Probab. 22 (2017), no.23, 1–17.
- 139 Erdős-Rényi law of large numbers in the averaging setup, Stoch. Dynam. 18 (2018), 1850018.
- 140 Ergodic theorems for nonconventional arrays and an extension of the Szemerédi theorem, Discr. Cont. Dyn. Sys. 38 (2018), 2687–2716.
- 141 (with Y. Hafouta, book) Nonconventional Limit Theorems and Random Dynamics, World Scientific, Singapore, 2018.
- 142 (with S. Sodin) Nonconventional random matrix products, Electron. Commun. Probab. 23 (2018),no.1, 1-12.
- 143 (with A. Rapaport) Geometric law for multiple returns until a hazard, Nonlinearity 32 (2019), 1525–1545.
- 144 (book) Lectures on Mathematical Finance and Related Topics, World Scientific, Singapore, 2020.
- 145 The strong Borel-Cantelli property in conventional and nonconventional setups, (in: Thermodynamic Formalism, M.Pollicott and S.Vaienti eds.), Lecture Notes in Math. 2290, Springer 2021.

- 145 Limit theorems for numbers of multiple returns
  in nonconventional arrays, Ergod. Theory& Dynam. Sys. 41 (2021)
- 146 Error estimates for discrete approximations of game options with multivariate diffusion asset prices, J. Stoch. Analysis, 2021.
- 147 (with Fan Yang) Geometric law for numbers of returns until a hazard under ϕ-mixing, Israel J. Math., 2021.
- 148 (with D. Camargo and O. Zeitouni), The Erdös–Rényi–Shepp law of large numbers for ballistic random walk in random environment, Ann. l'Inst. H. Poincaré (B), Probab. Statist., 2021.
- 149 Strong diffusion approximation in averaging and value computation in Dynkin's games, arXiv: 2011.07907.
- 150 Strong diffusion approximation in averaging with dynamical systems fast motions, arXiv: 2105.01940.
- 151 (with P. Friz) Almost sure diffusion approximation in averaging via rough paths theory, arXiv: 2111.05390
- 152 Some strong limit theorems in averaging, arXiv: 2209.10364
- 153 Limit theorems for signatures, arXiv: 2306.13376
- 154 Almost sure approximations and laws of iterated logarithm for signatures, arXiv: 2310.02665
- 155 Almost sure diffusion approximation in averaging: direct proofs with rough paths flavors, arXiv: 2401.05038

10. INVITED TALKS ON CONFERENCES AND SHORT TERM VISITS

- The Fourth International Symposium on Information Theory, Leningrad, Repino, 1976.
- The Second Vilnius Conference on Probability Theory and Mathematical Statistics, Vilnius, 1977.
- International Conference on Global Theory of Dynamical Systems, Northwestern University, Evanston, 1979.
- International Conference on Stochastic Processes and Applications, Montreal 1981 and Ithaca 1983.
- Conference on Ergodic Theory, Luminy, France, 1982.
- Mathematical Sciences Research Institute, Berkeley, March-April 1984 (Dynamical Systems Year).
- AMS Summer Research Conference on Random Matrices at Bowdwin College, June 1984.
- Conference on Stochastic Analysis, Oberwolfach, November 1984.
- Conference on Lyapunov Exponents, Bremen, November 1984.
- Special Year on Stochastic Analysis, Mathematics Institute, University of Warwick, July-August 1985.
- Special Year on Stochastic Differential Equations, Institute for Mathematics and its Applications, University of Minnesota, September 1985.
- Special Year on Smooth Dynamical Systems, Mathematics Institute, University of Warwick, June-July 1986.
- Symposium on Stochastic Mechanics and Stochastic Processes, Swansea, August 1986.
- Special Year on Ergodic Theory and Dynamical Systems, University of Maryland, September 1986.

- AMS Summer Research Conference "Geometry of Random Motion" at Cornell University, July 1987.
- One month visiting member of Caltech, Passadena, Ca, May-June 1988.
- Durham Symposium on Smooth Dynamical systems, July 1988.
- Special Year on Dynamical Systems Institute for Advanced Studies, one month visiting member Princeton, February 1989.
- Hyperbolic behavior of dynamical systems, Paris, March 1990.
- Lyapunov exponents,Oberwolfach,May,1990.
- AMS-SIAM Conference on Random medium, Blacksburg, June 1989.
- Conference on diffusion processes and their applications in analysis, Northwestern Univ., Evanston, October 1989.
- Hyperbolic behavior of dynamical systems, Paris, March 1990.
- Non linear problems in future particle accelerators, Capri April 1990.
- Lyapunov exponents, Oberwolfach, May 1990.
- Mathematisches Institut, Gottingen, one month visit, July 1990.
- Rigidity conference, Penn.State Univ., March 1991.
- 10-th International Congress on Mathematical Physics (Section organizer), Leipzig, August 1991.
- Special activity on Stochastic Analysis and Geometry, Max-Planck-Institut fur Mathematik, Bonn, one month visit, April 1992.
- Two weeks visit and a talk on the workshop on occasion of K.Ito's honorary degree at University of Warwick, July 1992.
- Center for Dynamical Systems and Nonlinear Studies at GaTex, January-February, 1993.
- Bonn University, June 1993, one month visit.
- AMS Summer Research Institute on Stochastic Analysis, Cornell University, July 1993.
- European Symposium on Stochastic Analysis, Lisbon, Sept.1993.
- Probability Emphasis Year at Northwestern University, two months visit, Sept.-October 1993.
- Organization of German-Israel workshops on Stochastic Dynamics, Jerusalem, March 1994.
- Fractal Geometry and Stochastics, Finsterbergen (Germany), June 1994.
- Organization of German-Israel-Russia workshop on Dynamical Systems and Statistical Mechanics, May 1995.
- Organization of the section: Stochastic Dynamics, Amer.Math.Soc.- Israel Math. Union joint meeting, May 1995.
- Symposium on Stochastic Analysis and Related Topics, Warwick University, England, July-August 1995.
- European/Gregynog Stochastic Analysis Symposium, Gregynog, July 1995.
- Workshop on Ergodic Theory and Numerical Analysis of Dynamical Systems, Brakel, Germany, June 1996.
- Workshop on Dynamical Systems, Berlin, Germany, August 1996.
- Organization of Special Year "Randomness and Dynamical Systems" and of Midrasha Mathematicae on Dynamical Systems at the Institute of Advanced Studies of Hebrew University, 1996-1997.
- Random Dynamical Systems, Bremen, April 1997.

- one month visit to Kyushu University, Fukuoka, Japan, October 1997 (research award from the Japan Society for Promotion of Science).
- Stochastic Analysis, special year MSRI, Berkeley, February 1998.
- International Congress of Mathematicians, Berlin 1998, invited speaker on Ordinary Diff. Equations and Dynamical Systems section.
- AMS Summer Research Institute on Smooth Ergodic Theory, Seattle, July-August, 1999.
- International conference on dynamical systems, IMPA, Rio de Janeiro, Brasil, August 2000.
- Special semester on random walks, Schroedinger Institute, Wien, Austria, February–March 2001.
- Andronov's international conference on nonlinear dynamics, Nignii Novgorod, Russia, July 2001.
- Special semester on dynamical systems, Pisa, Italy, February-March 2002.
- New directions in dynamical systems, Porto, Portugal, July 2003.
- Dynamics of complex systems, RIMS Kyoto, Japan, January 2004.
- Recent progress in dynamics, MSRI, Berkeley, USA, September 2004.
- Special programm on metastability in Max Planck Institute, Leipzig, Germany, May 2005.
- Chaos and disorder in mathematics and physics, Bresannone, Italy, September 2005.
- Optimal stopping with applications, Manchester, England, January 2006.
- Workshop on dynamical systems and related topics, College Park, Maryland, USA, March 2006.
- Randomness and hyperbolicity in dynamical systems, Budapest, Hungary, August 2006.
- Nonuniformly hyperbolic dynamics and smooth ergodic theory, Lisbon, Portugal, June 2007.
- Workshop on Dynamical Systems and Related topics, March 2008, University of Maryland, College Park.
- Shapiro visiting fellow, PennState University, April 2008.
- Rocky Mountains Dynamical Systems conference, May 2008, Park City, UT.
- Programm on hyperbolic dynamical systems, Schrödinger Institute, Vienna, June 2008.
- Symposium on Dynamic games, June 2008, Wroclaw, Poland.
- Humboldt foundation reinvitation programm, Humboldt University, Berlin, June-July 2008.
- Mathematics in Finance, September 2008, Kruger Park, South Africa.
- Workshop on Random Dynamical Systems, November 2008, Bielefeld, Germany.
- Optimal stopping and applications symposium, June 2009, Turku, Finland.
- Programm on quantitative finance, April 2010, Fields Institute, Toronto, Canada.
- Workshop on infinite ergodic theory, June 2010, Weizmann Institute, Israel.
- Dynamics and transport in disordered systems, June 2011, Fields Institute, Toronto, Canada.

- Large deviations in dynamical systems, July 2011, CIRM workshop, Luminy, France.
- Courant Institute, NYU, two months visit October-December 2011.
- Dynamics of complex systems, March 2012, Sapporo, Japan.
- Hyperbolic dynamics, fluctuations and large deviations, March 2013, Bernoulli Center, Lausanne, Switzerland.
- Stochastic dynamics in economics and finance, April-August 2013, Hausdorff Institute, Bonn, Germany.
- PennState University, September 2014, one month visit.
- Courant Institute, NYU, October-November 2014, 2 months visit.
- Ergodic theorems and applications in probability, May 2015, Eilat, Israel.
- Averaging and homogenization in deterministic and stochastic systems, May 2015, CIRM Luminy, France.
- Statistical mechanics, Rutgers University, NJ, USA, December 2015.
- Hyperbolic dynamics and statistical physics, May 2016, Schrödinger institute, Vienna, Austria.
- Probabilistic methods in dynamical systems and applications, October 2016, CRM University of Montreal, Montreal, Canada.
- Probabilistic aspects of multiple ergodic averages, December 2016, CIRM Luminy, France
- Conference on random dynamical systems, June 2017, Wuhan, China.
- AIMS conference on dynamical systems, July 2018, Taipei, Taiwan.
- Program on regularity structures and stochastic systems, July 2018, Beijing, China.
- Conference on mathematical economics and finance, September 2019, Manchester, UK.
- Conference on thermodynamic formalism, December 2019, CIRM Luminy, France.
- Modern topics in probability, October 17–21, 2022, Brin Math.Research Center, University of Maryland, College Park, USA.

Short term visits, seminar and colloquium talks in a number of universities in USA, Israel, England, Germany, France, Switzerland, Holland, Italy, Spain, Austria, Japan, China, Russia.

11. MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Mathematical Society, Israel Mathematical Union

12. SERVICE TO THE MATHEMATICAL COMMUNITY

Reviewer for Zentralblatt für Mathematik . Member of editorial boards of: 1)Discrete and Continuous Dynamical Systems; 2) Stochastics and Dynamics.