Curriculum Vitae of
Michael Jakobson

Date February, 2021

Education

Moscow State University M.A. June 1967
Moscow State University Ph.D. Dec.1970
Ph.D. Advisor - Prof. V.M. Alekseev

Experience in higher education.

University Paris-Sud, Orsay, Visiting Professor Spring 2009
University of MD Professor 1989 -present
University of MD Visiting Professor 1988 -1989
University of Rome Visiting Professor Fall 1988

Professional Experience not in higher education.

Institute of Oceanology, USSR Academy of Sciences,
Senior Research Scientist, 1984 -1988.
Central Research Institute for the State Planning Committee ,
Senior Research Scientist, 1974-1984.
Institute of Economics and Organization of Industrial Production,
USSR Academy of Sciences, Junior Research Scientist,
1970 -1974 .

Publications

A. Refereed Research Articles

1. Structure of polynomial mappings on the singular set.
Math. USSR-Sb. , v. 77 (1) (1968) , 105 - 124 .
2. On classification of polynomial endomorphisms of the plane.
Math. USSR-Sb. , v. 80 (3) (1969) , 365 - 387 .
3. On smooth mappings of the circle into itself.
Math. USSR-Sb. , v. 85 (2) (1971) , 163-188 .
4. On topological classification of rational endomorphisms of the Riemann sphere.
Uspekhi Mat. Nauk v. 28 (2) (1973), 247-248.
5.Existence of global equilibrium in some models of production and exchange.
Optimization of Regional and Sectoral Systems , v.3 Novosibirsk, 1975.
6. On properties of dynamical systems generated by the mappings $x \to Axe^{-x}$.
In Models of Biological Populations Vladivostok, 1975 .
7. On typical properties of a multibranch interregional model.
Methods and Models of Territorial Planning v. 3 , Novosibirsk, 1975 .
8. On typical properties of some optimization models.
Regional models , Novosibirsk, Nauka, 1976.
9. On some properties of Markov partitions.
Soviet Math. Dokl. 17 (1) 1976, 247-251.
10. On properties of a one-parameter family of dynamical systems $x \to Axe^{-x}$.
Uspekhi Mat. Nauk v. 31 (2) (1976), 239-240.
11. On the possibility of definition of bottom relief from an echogram.
Computative Seismology , v. 8, 1978 , 178-185.
12. Topological and metric properties of one-dimensional endomorphisms.
Soviet Math. Dokl. v. 19 (6) (1978), 1452-1456 .
13. On the zoning method in distribution problems, with A. Aryanin.
Economics and Math. Methods, 15, 1979, 68- 79.
14. Construction of invariant measures absolutely continuous with respect to dx for some maps of the interval.
Proceedings of the Conference on the Global Theory of Dynamical Systems, Northwestern Univ. , 1979
15. Territorial planning and mathematical models in economics, with A. Aryanin.
In Itogi Nauki i Techniki , Geography of the USSR, 15, 1979.
16. Invariant measures absolutely continuous with respect to dx for one-parameter families of one-dimensional mappings.
Uspekhi Mat. Nauk v. 35 (4) , 1980, 215-216.
17. Markov partitions for rational endomorphisms of the Riemann sphere.
Multicomponent Random Systems , Advanced Probability and Related Topics, v. 6, 1980, 381 - 391.
18. Symbolic dynamics and hyperbolic dynamical systems, with V.M. Alexeev.
Physics reports, 75 (5), 1981, 287-325.

19. Absolutely continuous invariant measures for one-parameter families of one-dimensional maps.
Comm. Math. Phys. 81 (1981), 39-88.
20. On the automatization of complex regional plan.
In Methods of Regional Planning, Moscow , 1981.
21. Invariant measures for some one-dimensional attractors.
Ergodic Theory and Dynamical Systems 2 (1982), 317-337.
22. On the boundary of some domains of normality for rational maps.
Inst. Mittag-Leffler, Rep. No 15, 1983, 1-12.
23. On boundaries of some domains of normality for rational maps.
Uspekhi Mat. Nauk v. 39 (6) , 1984, 211-212.
24. On random systems close to one-dimensional ones.
Proc. 6-th Int. Symp. on Information Theory, Tashkent, 1984.
25. Number of periodic trajectories for analytic diffeomorphisms of the circle.
Functional. Anal. Appl. 19 (1) (1985), 79-80 .
26. Absolutely continuous invariant measures for some maps of the circle , with P. Bleher.
Progr. in Phys. 10, 1985, 303-315.
27. On local fractality, with A.S. Monin.
Soviet. Math. Dokl. 33, 1986, 456-459.
28. Families of one-dimensional maps and nearby diffeomorphisms.
Proc. ICM Berkeley, 1987, 1150-1160.
29. Universal behavior and stochasticity for one-dimensional dynamical systems.
Proc. First World Congress of Bernoulli Society, W.N.U. Sc. Pr. , Utrecht, 1987, 85-86.
30. Feigenbaum universality and multipliers of 2^n-cycles for multidimensional systems, with V.U.Sedov and A.I. Chibnik.
In " Renormalization Group" Proc. of the First conf. on Renormalization Group,
World Sc. Publ. , 1988.
31. Onset of stochasticity for some families of one-dimensional maps.
Phys. D., 33, 1988, 157-164.
32. Feigenbaum universality and onset of stochasticity.
Proc. of Banach Semester in Dynam. Systems, Banch Center Publ. , v. 23, 1989, 465-474.
33. Quasisymmetric conjugacy for some one-dimensional maps inducing expansion.
Contemporary Math. , v.135, 1992, 203-211.
34. Induced hyperbolicity, invariant measures and rigidity.
From topology to computation, Proc. of Symposia in Honor of S. Smale, Springer, 1993, 237-242.
35. Metric properties of non-renormalizable S-unimodal maps : I. Induced expansion and invariant measures , with G.Swiatek.
Ergodic Theory and Dynamical Systems , v.14 ,1994, 721-755.
36. Metric properties of non-renormalizable S-unimodal maps : II. Quasisymmetric conjugacy classes, with G.Swiatek.
Ergodic Theory and Dynamical Systems , v.15 , 1995 , 871-938.
37. On the structure of non-hyperbolic attractors, with S. Newhouse.
Proc. of Int. Conf. of Dynamical Syst. and Chaos, World Sci. , v. 1, 1995, 103-111.

38. A two-dimensional version of the Folklore Theorem, with S. Newhouse.
Math. Soc. Transl. , v. 171, 1996, 89-105.
39. On Markov partitions for non-hyperbolic maps.
Proceedings of Steklov Institute, v. 216, 1997, 280-286 .
40. Uniformly scaled Markov partitions for unimodal maps.
J. of Math. Sci. v. 95(5), 1999, 2583-2608.
41. Asymptotic Measures for Hyperbolic Piecewise Smooth Mappings of a Rectangle, with S. Newhouse.
Asterisque , 2000, v.261, 103-159 .
42. Piecewise smooth maps with absolutely continuous invariant measures and uniformly scaled Markov partitions .
Proceedings of Symposia in pure Mathematics , 2001, v.69, 825-881.
43. Parameter choice for families of maps with many critical points.
Modern Dynamical Systems and Applications, Cambridge University Press, 2004, 359-364.
44. New examples of S-unimodal maps with a sigma-finite absolutely continuous invariant measure.
With Jawad Al-Khal, Henk Bruin.
Discrete and Continuous Dynamical Systems, 2008, v.22, 35-61.
45. New examples of topologically equivalent S-unimodal maps with different metric properties.
With Henk Bruin.
Contemporary Mathematics, 2008, v.469, 119-139.
46. Thermodynamic formalism for some systems with countable Markov partitions.
Contemporary Mathematics, v. 692, 2017, 177-193.
47. Mixing properties of some maps with countable Markov partitions.
Contemporary Mathematics, v.698, 2017, 181-194.
48. Countable Markov partitions suitable for thermodynamic formalism.
With Lucia Simonelli.
Journal of Modern Dynamics, v.13, 199-219, 2018.
49. Method of parameter exclusion. Some recollections and some new results.
Pure and applied functional analysis, v.5, 1377-1394, 2020.

B. Chapters in books, etc.

1. Ergodic theory of one-dimensional maps.
Dynamical Systems II, Modern Problems in Math. ,
Encyclopedia of Math. Sc., Springer-Verlag, v.2, 1989, 179 - 199.
2. Ergodic theory of one-dimensional mappings.
Encyclopedia of Math. Sci. , v. 100, Ya. G. Sinai Editor, Springer, 2000, 234-255.
3. One-dimensional maps, with G. Swiatek.
Handbook of Dynamical Systems, B. Hasselblatt and A. Katok editors, Elsevier Science, 2002, 599-664.
4. Article "Jakobson Theorem" , Scholarpedia, 2006.
See http://www.scholarpedia.org/ and go to the Section Dynamical Systems, subsection Ergodic Theory.

C. Submitted for publication.

In preparation .
1. Estimating measure of SRB parameters, joint with Warwick Tucker.

2.SRB measures for certain Henon-like families. Distortion and parameter estimates. joint with Sheldon Newhouse.

D. Research announcements

1. Dimensional characteristics of attractors similar to twisted horseshoe.
In abstracts of Intern. Top. Conf., Baku, 1987.

Selected Invited Talks

International Conference on Ergodic Theory and Dynamical Systems, Warsaw, 1977.
International Congress in Information Theory, Tbilisi, USSR , 1980.
International Mathematical Congress, Berkeley, 1986.
International Conference on Dynamical Systems, Zuberetz, Czechoslovakia, 1987.
International Topological Conference, Baku, USSR, 1987.
International workshop on Dynamical Systems, Trieste, 1988.
Institute for Advanced Study, Princeton, 1989.
International Conference on Dynamical Systems, IMPA, Rio de Janeiro, 1989 .
International Conference on Holomorphic Dynamics, Stony Brook, 1989.
International Conference on Dynamical Systems, Paris, 1990.
IHES, Paris, 1990.
University of Warwick, Warwick, 1990.
Ecole Polytechnique, Paris, 1991.
International workshop on Dynamical Systems, Trieste, 1992.
International workshop on Dynamical Systems, Porto, 1992.
International Conference on Dynamical Systems, IMPA, Rio de Janeiro, 1993 .
International Conference on Dynamical Systems and Chaos, Tokyo, 1994.
International workshop on Dynamical Systems, Trieste, 1995.
International Conference on Dynamical Systems, Warsaw, 1995.
Ecole Polytechnique , Paris , 1996.
University of Warwick , Warwick , 1996.
International Conference on Dynamical Systems, Barcelona, 1997.
Annual Meeting of the AMS, Baltimore , 1998 .
Summer School of the AMS, Seattle, 1999 .
University Paris VI, 1999.
University Paris Sud, Orsay, 2000.
International Conference on Dynamical Systems, IMPA, Rio de Janeiro, 2000 .
International workshop on Dynamical Systems, Trieste, 2001.
University of Groningen, 2002.

University of Porto, 2002.
International Conference on Dynamical Systems, Moscow, 2002.
Conference on Dynamical Systems, Penn State, 2003.
International workshop on Dynamical Systems, Trieste, 2004.
International workshop "Recent Progress in Dynamics", MSRI, Berkeley, 2004.
International Conference on Dynamical Systems, Chicago, 2006.
International Conference on Dynamical Systems, Lisbon, 2007.
Imperial College, London, 2007.
Universite de Montreal, 2008.
Hebrew University, Jerusalem, 2009.
Universite de Paris-Sud, Orsay, 2009.
International Conference on Dynamical Systems, Institut Henri Poincare, Paris, 2009.
Conference on Dynamical Systems, Penn State, 2011.
Sinai seminar, Inst. of Information Transmission Problems, Russian Acad. Sciences, Moscow, 2012.
International Conference on Dynamical Systems, University of Alabama at Birmingham, 2015.
University of Roma Tor Vergata, 2015.
Conference on Dynamical Systems, Penn State, 2015.
Statistical Mechanics Conference, Rutgers, 2015.
Erwin Schroedinger Institute, Vienna, 2016.
KTH Royal Institute of Technology, Stockholm, 2016.
University of Uppsala, 2016.
International conference on Dynamical Systems, ICTP Trieste, 2017.
International conference on Dynamical Systems, Warwick University, 2019.

Grants

NSF grants 1990-2001
NSF grant for Spring Dynamics Conference 2003-2006
NSF grant for Spring Dynamics Conference 2007-2015.
Grant from Knut and Alice Wallenberg Foundation to work at the University of Uppsala on the project : "Computer assisted estimates of the measure of stochastic parameters for non-hyperbolic families of one and two-dimensional maps" awarded in 2015.

Honors

Conference in honor of Michael Jakobson's sixtieth birthday
October 14-17, 2005
See http://www.math.psu.edu/dynsys/...

Teaching and Advising

Various undergraduate and graduate courses, 1989 - present.
RIT Introduction to smooth dynamical systems, 2004-2005, 2007 .
Advising PhD Jawad Al-Khal, defended in Fall 2004.
Minicourse: Finite and σ-finite invariant measures. Univ. Paris-Sud, Orsay, 2009.
PhD advisor for Yu-Ru Huang, graduated Spring 2012 .
M.A. advisor for Adriana Tapia, graduated Fall 2013.

Service to the mathematical community

Referee for math. journals Annals of Math.,Acta Math., Inventiones Math., Communications in Math. Phys. and others.
Referee for NSF - 2005 .
Letters of recommendation.
Organized Spring 2006 Dynamics conference in honor of Ya.G. Sinai 70th birthday.
Committee for the PhD exam of Tetyana Andress, GWU, 2007.
Committee for the PhD exam of Alexei Belochitski, Dean's Representative, 2012.
Organized Spring 2012 Dynamics conference.

Service to the department

College APT committee, 2002
Graduate committee, Russian exam.
ODE, Dynamical Systems committee.
Remark. Prepared at least 11 ODE qualifying exams (Winter, Spring) during the period from the Fall 1998 to The Fall 2013. Could not find record before 1998. In ODE/Dynamics the complete exams are prepared by the instructor who is teaching 670/671.
Complex Analysis committee.
PhD advisor for Jawad Al-Khal. Defended in Fall of 2004.
Thesis Committees.
Preliminary PhD exams and Final PhD exams for Karen Ball, David M. McClendon, Angela Desai, Andrew Dykstra, Kevin McGoff, Jacopo de Simoi, Brendan Berg, Cecilia Gonzalez Tokman, Fabian Contreras, Sompong Chuysurichay,James Tanis, Lucia Simonelli.
PhD advisor for Yu-Ru Huang.Preliminary exam 2008.
PhD advisor for Yu-Ru Huang. Graduated Spring of 2012.
M.A. advisor for Adriana Tapia. Graduated Fall of 2013.
Final PhD exam for Lucia Simonelli, 2016
University Senate, 2009 - 2012.
University Senate, 2017 - 2020.
Hiring committee, 2017 - 2018.