

Curriculum Vitae of Michael Jakobson

Date March, 2017

Education

Moscow State University M.A. June 1967

Moscow State University Ph.D. Dec.1970

Ph.D. Advisor - Prof. V.M. Alekseev

Publications

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 $x \rightarrow Axe^{-x}$.
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 $x \rightarrow Axe^{-x}$.
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 Tekhniki , 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.
Accepted for publication, to appear in Contemporary Mathematics, 2017.
PDF 23 pages.
47. Mixing properties of some maps with countable Markov partitions.
Accepted for publication, to appear in Contemporary Mathematics, 2017 (or 2018).
PDF 19 pages.

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. Świątek.
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.

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.

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, Penn State University, 2005

Teaching and Advising

Various undergraduate and graduate courses, 1989 - present.

RIT Introduction to smooth dynamical systems, 2004-2005, 2007 .

Advising PhD Jawad Al-Khal, graduated 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 .

Letters of recommendation.

Organized Spring 2006 Dynamics conference in honor of Ya.G. Sinai 70th birthday.

Organized Spring 2012 Dynamics conference.

Service

College APT committee, 2002

ODE, Dynamical Systems committee.

University Senate, 2009 - 2012. University Senate, 2017-