

CURRICULUM VITAE

Valentin Afraimovich

Date of Birth: 2 April, 1945, Kirov, USSR

Nationality: Mexican

Home Address: 185 Fleming Apt. 2 Colonia Polanco, San Luis Potosí. SLP. 78220 México.

Working Address: IICO-UASLP Karakorum 1470 Colonia Lomas 4a., San Luis Potosí. SLP. 78210 México.

Married: 2 children

Education:

1990 Doctor of Science in Mathematics and Physics, Nizhny Novgorod State University, Russia.

1974 Ph.D., Nizhny Novgorod State University. Advisor: L.P. Shil'nikov

1968 Master's degree, Nizhny Novgorod State University. Advisor: L.P. Shil'nikov

1966 Bachelor's degree, Nizhny Novgorod State University. Advisor: L.P. Shil'nikov.

Positions Held

1998-present Professor–researcher, IICO Universidad Autónoma de San Luis Potosí S.L.P. México.

1996-1998 Visiting Professor, National Tsing Hua University, Hsinchu, Taiwan.

1995-1996 Visiting Professor, Northwestern University, Evanston, IL.

1992-1995 Visiting Principal Research Scientist, Georgia Institute of Technology, Atlanta.

1988-1992 Professor, Nizhny Novgorod State University, Nizhny Novgorod, Russia.

1987-1988 Leading Scientist, Institute of Applied Mathematics and Cybernetics, Nizhny Novgorod.

1980-1987 Senior Scientist, Institute of Applied Mathematics and Cybernetics, Nizhny Novgorod.

1968-1980 Junior Scientist, Institute of Applied Mathematics and Cybernetics, Nizhny Novgorod.

EXPERIENCE IN HIGHER EDUCATION

1988-1991	Nizhny Novgorod State	Courses: “Nonlinear dynamics”, “Ordinary Differential Equations”
	University	for undergraduate and graduate
	Dept. of Radio Physics	students
1991	Univ. of California	Course: “Nonlinear dynamics of
	San Diego	nonequilibrium media” for
		graduate students
	Georgia Inst. of Tech.	Course: “Lattice dynamical
	Atlanta, GA. School of	systems” for graduate students
	Math.	
1992	Perm State University	Course: “Differential dynamics”
	Dept. of Mathematics	for undergraduate students
		students
1992-1994	Georgia Inst. of Tech.	Courses: “ Theory of nonlocal
	Atlanta, GA School of	bifurcations” and “Operational

	Math.	
		Mathematics” for graduate and
		undergraduate students
1994	Georgia Inst. of Tech. Atlanta, GA School of Math.	Course: “Chaotic dynamics of dissipative systems - for nonmathematicians”
1994-1995	Georgia Inst. of Tech. Atlanta, GA School of Math.	Courses: “Calculus V” and “ODE for undergraduate students
1995-1996	Northwestern Univ., Evanston, IL. Department of Mathematics.	Course: “General theory of fractal dimension” for graduate students
1996-1998	National Tsing Hua Univ. Hsinchu, Taiwan	Course: “Dynamical Chaos” for graduate students
1998-present	Universidad Autonoma de San Luis Potosi	Courses: “Dynamical Systems”, “Topology”, “Functional analysis”, “Ordinary Diferencial equations” for graduate students

PH.D. STUDENTS (beginning from 1982)

M. Shereshevsky, T. Young (with S-N. Chow), A. Morante, S. Murguia (with J. Urias), A. Cordonet (with R. Lima), F. Ordaz (with J. Urias), L. Ramirez (with E. Ugalde). I. Tristan Rodriguez.

PRINCIPAL ACCOMPLISHMENTS

The introduction and study of a new class of nonlocal bifurcation (of the “saddle-node” type) leading to the appearance of stochastic behavior in dynamical systems.

The investigation of bifurcations and topological structure of the Lorenz attractor (with V.V. Bykov, L.P. Shil’nikov).

The rigorous qualitative theory of stochastic synchronization.

The rigorous results on stability of space-homogeneous and traveling wave solutions in the chain of coupled maps and its application to some models of nonequilibrium media (with Ya.Pesin, V. Nekorkin, I.S. Aranson, M.I. Rabinovich).

Dynamics of cellular automata (with M.A. Shereshevskii, Jesús Urías).

Stability of solutions in lattice dynamical systems and spatial chaos.

Dimension-like characteristics of invariant sets. Complexity of behavior of orbits in Dynamical Systems.

Theory of sequential dynamics in models of biological networks.

PROFESSIONAL AFFILIATIONS AND MEMBERSHIPS

Member of the Nizhny Novgorod Mathematical Society, Russia.

2001-2008 Visiting Member of the Courant Institute, NYU.

1995 Invited Member of the program Finite to Infinite Dimensional Dynamical Systems, Newton Institute, Cambridge, U.K..

1993-1998 Member, American Mathematical Society.

1989-1994 Member, Council on Nonlinear Dynamics of Russian Academy of Science.

AWARDS AND GRANTS

2012	Premio Universitario a la Investigacion Universidad Autonoma de San Luis Potosí, México.
2012	Lagrange Award 2012, IEEE Conference. Nonlinear Science and Complexity
2010	International Conference dedicated to V. Afraimovich on the occasion of his 65 th birthday.
2004-2008	ECOS Mexico - Francia, SEP-Conacyt-ANUIES
2004-2007	Conacyt Grant Of. R. No. 422/03, Complexity and Dinamics of Patterns in Networks of Active Elements
2001-2003	Conacyt-NSF grant E 120933, joint grant with the Penn State University.
2001	UC Mexus-Conacyt collaborative grant, joint grant with UCSD.
1997	The Lady Davis Foundation Grant, Jerusalem, Israel.
1994-1995	National Science Foundation Grant, #DMS-9404199.
1993-1995	Army Research Office Grant, #DAAH04-93-6-0199.
1991	Visiting Professor, Institute for Nonlinear Science, University of California, San Diego.

Citation Indexes

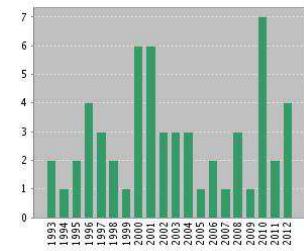
1. Google Scholar.



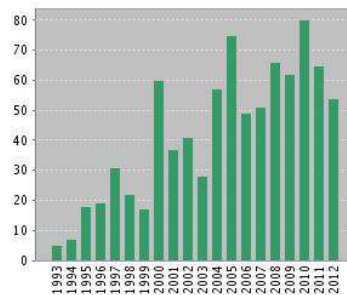
<http://scholar.google.ca/citations?user=Fcq6GU8AAAAJ&hl=en>

2. ISI Web of Knowledge.

Articles Published Per Year



Citations Per Year



Total of articles: 74

Total citations, excluding self citations: 853

H index: 16

ISI Web of Knowledge

Citation report

Author=(**AFRAIMOVICH V**) OR Author=(**AFRAIMOVICH VS**)

Timespan=All Years. Databases=SCI-EXPANDED, SSCI, A&HCI.

January 2013

INVITED LECTURES

2012 First Mexican Workshop In Fractional Calculus. December 12-14. Salamanca Guanajuato México.

2012 IEEE 4th International Conference on Nonlinear Science and Complexity. August 6-11, 2012. Budapest, Hungary.

2012 International Conference on Nonlinear Dynamics and Complexity. July 23-29. Jinan, Shandong, China.

2012 Ciclo de Conferencias Vladimir I. Arnold. June 4. Zacatecas, México.

2012 Nonlinear Waves 2012. February 23- March 6, 2012. Nizhny Novgorod, Russia.

2011 Chaos, Complexity and Transport 11. May 23-27. France.

2011 XII Latin American Workshop on Nonlinear Phenomena. Mexico.

2010 XV Scientific Workshop Nonlinear Waves 2010, March 6 – 12. Russia.

2010 IV International Conference Fortiers of Nonlinear Physics Jul 13 – 20. Russia.

2009 Métodos Estocásticos en Sistemas Dinámicos, CIMAT. Mexico.

2009 Nonlinear Dynamics and Chaos Workshop. USA.

2009 XLII Congreso Nacional Sociedad Matemática Mexicana. Mexico

2008 Chaos and Dynamics in Biological Networks. Cargese Corsica, France. Nonlinear Waves 2008. Russia

2008 International Symposium. Topical Problems in Nonlinear Waves Physics. . July 20-26. Nizhny Novgorod, Russia.

2008 Nonlinear Waves 2008. March 1-7. Nizhny Novgorod, Russia.

2007 SIAM Conference on Applications of Dynamical Systems. USA. Nonuniformly Hyperbolic Dynamics and Smooth Ergodic Theory. Portugal. Nonlinear Dynamics an Chaos: Advances and perspectives. Scotland.

2005 International Conference on Chaos and Dynamical Complexity. Hsinchu, Taiwan.

International Conference on Control and Synchronization of Dynamical Systems. Leon Guanajuato, Mexico.

2004 VI Joint AMS-SMM meeting. Houston, USA.

International Workshop, CML-2004. Paris, France.

2003 XXXVI Congreso Nacional de la SMM. Pachuca, Mexico.

International Conference "Hilbert Sixteenth and Related Programs". Moscow, Russia.

International Summer School of NATO Advanced Study Institute, Cargèse, France,
The Program "Symplectic Geometry and Physics", IPAM, UCLA, Los Angeles, USA.

2002 International Workshop on Chaotic Transport and Complexity in Classical and Quantum Dynamics, Carry Le Rouet, France,

2001 Research group the Science of Complexity: From Mathematics to Technology, Bielefeld, Germany.

Joint Meeting of the American and Mexican Mathematical Societies, Morelia, Mexico.

International Conference "Progress in nonlinear sciences", dedicated to the 100-anniversary of A.A.Andronov, Nizhny Novgorod, Russia.

VII Latin American Workshop in Nonlinear Phenomena, Cocoyoc, Mexico.

2000 Workshop on Dynamics and Randomness, Santiago, Chile, "*Dimension-like Characteristics of invariant sets in Dynamical Systems*".

Southwest Regional Dynamics Workshop, Los Angeles, USA, "*Spectra of Dimensions for Poincaré Recurrences for Sets and Measures*".

International Workshop on Chaotic Transport and Complexity, Carry Le Rouet, France, "*Characteristics of Spatio-temporal Behavior in Dynamical Systems*".

Symposium on Synchronization of Chaotic Systems, Trieste, Italy, "*Poincaré Recurrences in Synchronized Regimes*".

1999 IV Joint Meeting AMS-SMM, Denton, Texas, "*Some problems related to dimension-like characteristics in dynamical systems*"; Workshop on statistic of return times in dynamical systems, Marseilles, France, "*Dimensions for Poincaré recurrences*".

1998 International Conference on Differential Eqs, Taipei, Taiwan; "*Dimension - like properties of dynamical systems*", Dresden, Germany.

"Système dynamique: du crystal au chaos", Marseille France.

1997 Workshop "Chaos, Kinetics and Nonlinear Dynamics in Fluids and Plasmas", Carry Le Rouet, France

1996 Workshop on advances in dynamical chaos, Courant Institute, NYU; second school-conference "*Dynamics, stochastic and complexity*", CNRS, Marseille.

- 1995 International Workshop “From Finite to Infinite Dimensional Dynamical Systems”, Cambridge; UK International Workshop, Lattice Dynamics, Paris; “Third SIAM Conference on Applications of Dynamical Systems, Utah.
- 1994 Nonlinear Dynamics in Science and Engineering, Atlanta, 14th IMACS World Congress, Atlanta.
- 1993 Special Session, American Mathematical Society, San Antonio Workshop, Chaos V, Woods Hole, Massachusetts.
- 1992 Dynamical Systems Workshop, University of Maryland, College Park Penn State University, State College University of North Carolina, Chapel Hill University of Texas, Austin.
- 1991 Conference “EQUADIFF”, Barcelona, Spain. Conference “Modern Ideas in Turbulence”, Penn State University.
- International Symposium on Hydromechanics and Heat/Mass Transfer in Microgravity, Perm’-Moscow, USSR.
- University of California, Berkeley.
- 1990 Conference on “Ergodic Theory and Related Topics”, Guestrow, Germany.
- USSR-USA Conference on Chaos, Tarusa, USSR.
- Workshop “Dynamic Days”, Dusseldorf, Germany
- 1984 International Workshop, “Nonlinear and Turbulent Processes in Physics”, Kiev, USSR.
- 1983 International Symposium, “Self-Waves in Biology, Chemistry and Physics”, Pushchino, USSR.
- 1981 9th International Conference, “Nonlinear Oscillations”, Kiev, USSR.
- 1972 International Conference on Topology and Related Topics, Tbilisi, USSR.
- 1969 5th International Conference, “Nonlinear Oscillations”, Kiev, USSR.

SERVICE TO THE MATHEMATICAL AND PHYSICAL COMMUNITY

Editorial:

Taiwanese Journal of Mathematics. 1998-2004. Associate Editor.

Dynamical Systems, An International Journal. 2009-present. Member of editorial Board.

Communications in Nonlinear Science And Numerical Simulation. 2010-present. Member of International Advisory Editors Board.

CHAOS. 2006-present. Member of the Advisory Board.

International Journal Of Bifurcation And Chaos In Applied Science And Engineering. 2009-present. Member of the Editorial Board.

Interdisciplinary Journal of Discontinuity, Nonlinearity and Complexity. 2012-present. Editor.

Chaos, Solitons and Fractals. The interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena. 2011-present. Member of the Editorial Board.

Book Series:

H.E.P. & L&H Press. Mathematical Methods and Modeling. ISSN 2166-3440. Series Editor. 2012-present.

Elsevier. Monograph Series on Nonlinear Science and Complexity. ISSN 1574-6917. Member of Advisory Board. 2006-present.

ORGANIZATION OF CONFERENCES AND WORKSHOPS

2013. International Conference Dynamics, Bifurcations, and Strange Attractors, Nizhny Novgorod, Russia. Member of Scientific Committee.

2012. The International Conference on Nonlinear Dynamics and Complexity, Jinan, Shandong, China. Conference Chair.

2012. NSC 2012. 4th IEEE International Conference on Nonlinear Science and Complexity, Budapest, Hungary. Member of Technical Program Committee.

2012. Third IFAC CHAOS Conference. IFAC Conference on analysis and control of chaotic systems. Mexico. Member of International Program Committee.

2012. Third International Workshop-School CHAOS, COMPLEXITY and DYNAMICS in BIOLOGICAL NETWORKS, Ecole thématique du CNRS, Cargese Corsica, France. Member of Scientific Committee.

2011. XII Latin American Workshop on Nonlinear Phenomena. San Luis Potosi, Mexico, October 10-14. Member of International Advisory Board.

2011. Chaos, Complexity and Transport Marseilles, France. Member of Scientific Committee.

2009. ICCSA 2009 The 3rd International Conference on Complex Systems and Applications University of Le Havre, Normandy, France. Member of Scientific Committee.

2008. Chaos and Dynamics in Biological Networks, Cargese Corsica, France. Organizer.

AREAS OF SPECIALIZATION

Dynamical systems, qualitative theory of ordinary differential equations, bifurcation theory, strange attractors, space-time chaos, mathematical models of nonequilibrium media, traveling waves in lattice models, analysis of time-series and snapshots, complexity of orbits and dimension-like characteristics in dynamical systems, transitive dynamics in networks of active elements, dynamical networks.

Principal Publications

Books:

The Theory of Bifurcation, with V.I. Arnold, Yu.S.II'yashenko, L.P. Shil'nikov in series: Modern Problems of Mathematics. Fundamental Directions, VINITI, Moscow, Nauka (1986), in Russian; translated in "Encyclopedia of Mathematical Sciences", v. 5, Springer-Verlag, NY, 1994.

Multidimension strange attractors and turbulence, with I.S. Aranson, and M.I. Rabinovich, in series: Sov. Sci. Rev. C Math./Phys., **8** (ed. by S.P. Novikov), Harwood Academic Publishers (1989).

Stability, Structure and Chaos in Nonlinear Synchronization Networks, with V.I. Nekorkin, G.V. Osipov, V.D. Shalfeer (edited by A.V. Gaponov-Grekhov, M.I. Rabinovich), Institute of Applied Physics, USSR Academy of Science Press, Nizhny Novgorod (1990), in Russian, translated in "World Scientific series on Nonlinear Science", Ser. A., vol. 6, World Scientific, Singapore, 1994.

Bifurcation Theory and Catastrophe Theory, with V.I. Arnold, Yu.S.II'yashenko, L.P. Shil'nikov, Springer-Verlag, 1999.

Lectures in Chaotic Dynamics, with S.-B. Hsu, AMS/IP Studies in Advanced Mathematics, (**28**), International Press, 2003.

Fractal Dimensions for Poincare Recurrences, with E. Ugalde and J. Urias, Elsevier, 2006.

Long-range Interactions, Stochasticity and Fractional Dynamics, A. Luo, V. Afraimovich editors. HEP-Springer, 2010. ISBN 978-3-642-12342-9

Hamiltonian Chaos Beyond the KAM Theory, A. Luo, V. Afraimovich editors. HEP-Springer, 2010. ISBN 978-3-642-12717-5

Fractal Dimensions for Poincare Recurrences, with E. Ugalde and J. Urias. Russian Translation 2011. ISBN 978-5-93972-903-1

Discrete and Switching Dynamical Systems. A. Luo and V. Afraimovich, eds. Higher Education Press Limited Company, Beijing, China. 2012. ISBN 978-1-62155-002-0 DOI 10.5890/978-1-62155-003-7.

Continuous Dynamical Systems. A. Luo and V. Afraimovich, eds. Education Press Limited Company, Beijing, China. 2012. ISBN 978-1-62155-000-6, DOI 10.5890/978-1-62155-001-3.

Articles:

Short Guide to Modern Nonlinear Dynamics. V.S. Afraimovich, M.I. Rabinovich and P. Varona. In: Principles of Brain Dynamics, M.I. Rabinovich, K.J. Friston and P. Varona eds. The MIT Press, Cambridge, Massachusetts, London, England. 2012. 313-338.

Heteroclinic Cycles In The Repressilator Model (A. Kuznetsov, V. Afraimovich) Chaos Solitons & Fractals 45 (2012) 660-665. doi:10.1016/j.chaos.2012.02.009.

Instability, semantic dynamics and modeling brain data. (M.I. Rabinovich, V.S. Afraimovich, C. Bick, P. Varona) Phys Life Rev (2012); doi:10.1016/j.plrev.2012.01.003

Nonlinear Dynamics Of Emotion-Cognition Interaction: When Emotion Does Not Destroy Cognition? (V. Afraimovich, T. Young, M.K. Muezzinglu, M. Rabinovich. Bull Math Biol (2011) 73:266-284. DOI 10.1007/s11538-010-9572-x

Relating the sequential dynamics of excitatory neural networks to synaptic cellular automata (V. I. Nekorkin, A. S. Dmitrichev, D. V. Kasatkin, and V. S. Afraimovich) Chaos 21, 043124 (2011); <http://dx.doi.org/10.1063/1.3657384> (13 pages)

Information flow dynamics in the brain. (Rabinovich MI, Afraimovich VS, Bick C, Varona P.). Phys Life Rev. 2011 Nov 17. [Epub ahead of print]

Heteroclinic Binding (M.I. Rabinovich, V.S. Afraimovich, P. Varona) Dynamical Systems. Vol 25, No. 3, 433-442, 2010.

Transients Versus Attractors in Complex Networks (M.K. Muezzinoglu, I. Tristan, R. Huerta, V.S. Afraimovich, M.I. Rabinovich) International Journal of Bifurcation and Chaos. Vol. 20, No. 6, 1653-1675, 2010.

Measures Related to Metric Complexity (V. Afraimovich, L. Glebsky, R. Vazquez) Discrete and Continuous Dynamical Systems. Vol 28, No. 4, 1299-1309, December 2010

Dynamical Networks: Continuous Time and General Discrete Time Models (V. S. Afraimovich, L.A. Bunimovich, S.V. Moreno) Regular and Chaotic Dynamics, Vol. 15, 129-147, 2010.

Which hole is leaking the most: a topological approach to study open systems(V.S. Afraimovich and L.A. Bunimovich) Nonlinearity, Vol. 23, No. 3, 643-655, 2010

Metastability and Transients in Brain Dynamics: Problems and Rigorous Results. Valentin S. Afraimovich, Mehmet K. Muezzinoglu, Mikhail I. Rabinovich. Long-range Interactions, Stochasticity and Fractional Dynamics. Nonlinear Physical Science Volume 0, 2011, pp 133-175

Local Complexity Functions of Interval Exchange Transformations (V. Afraimovich, R. Rechtman) Communications in Nonlinear Science and Numerical Simulation, Vol. 14, 1454-1460, 2009.

Measures Related To n-Complexity Functions (With L. Glebsky) Discrete And Continuous Dynamical Systems, Vol. 22, N 1-2. 2008.

Local Complexity Functions of Interval Exchange Transformations-doi:10.1016/j.cnsns.2008.02.001 (With R. Rechtman) Communications in Nonlinear Science 02, 01: 1016-1026. 2008.

Transient Cognitive Dynamics, Metastability, and Decision Making (M. Rabinovich, R. Huerta, P. Varona, V. Afraimovich) PLOS Computational Biology 04, 05: 1-9. 2008.

Winnerless competition principle and prediction of the transient dynamics in a Lotka-Volterra model (With I. Tristan, R. Huerta, M. Rabinovich). CHAOS 18, 43103. 2008

Torus Breakdown Scholarpedia, 2(10):1933. 2007

Dynamical Networks: Interplay of topology, interaction and local dynamics (with L. Bunimovich). Nonlinearity 20, 1761-1771. 2007.

Dynamics of Sequential Decision Making (With M. Rabinovich and R. Huerta) Physical review Letters, 97, 188103-1 188103-4. 2006.

Generation and Reshaping of Sequences in Neural Systems (With M. Rabinovich, R. Huerta and P. Varona) Biological Cybernetics 95:519-536. 2006.

Complexity, Fractal Dimensions and Topological Entropy in Dynamical Systems (With L. Glebsky) Chaotic Dynamics and Transport in Classical and Quantum Systems, 35-72. (2005).

Measures of ε -complexity. (With L. Glebsky) Taiwanese J. Math. 9 (2005), no. 3, 397–409.

Working with Complexity Functions. (With G.M. Zaslavsky) Chaotic Dynamics and Transport in Classical and Quantum Systems, 73-85. (2005).

On the origin of reproducible sequential activity in neural circuits (With V. Zhigulin and M. Rabinovich) Chaos **14** (2004), 1123-1129.

Heteroclinic contours in neural ensembles and the winnerless competition principle. (With M. I. Rabinovich, P. Varona) Internat. J. Bifur. Chaos Appl. Sci. Engrg. 14 (2004), **no. 4**, 1195–1208.

On the density of directional entropy in lattice dynamical systems. (With A. Morante, E. Ugalde). Nonlinearity 17 (2004), **no. 1**, 105–116.

Sistemi dinamici (With L. Bunimovich and J. Hale). Storia della Scienza **IX**, Enciclopedia Italiana 841-850. (2003)

Neurocomputation with separatrices (With M. I. Rabinovich, P. Varona). Experimental chaos, 239–250, AIP Conf. Proc., **676**, Amer. Inst. Phys., Melville, NY, 2003.

Detectability of nondifferentiable generalized synchrony (with N.F. Rulkov), Physical Review E, **67**, 066218, (2003), pp 1–8.

Space time complexity in Hamiltonian dynamics (with G.M. Zaslavsky), Chaos, **13**, 2, (2003), pp 519–532.

Pointwise dimensions for Poincaré recurrences associated with maps and special flows (with J. R. Chazottes and B. Saussol), Discrete and Continuous dynamical systems, **9**, 2, (2003), pp 263–280.

Some characteristics of complex behaviour of orbits in dynamical systems (with J. Urías), Comm. in Nonlinear Science and Num. Sim, **8**, (2003), pp 171–181.

Directional Entropy in Lattice Dynamical Systems (with M. Courbage, B. Fernandez and A. Morante) in: Mathematical problems of Nonlinear Dynamics (L.M. Lerman and L.P. Shilnikov, eds), Progress in Nonlinear Science, Nizhny Novgorod University, (2002), pp. 9-30.

Dimension-like characteristics of invariant sets in dynamical systems (with J. Urías) in: Dynamics and Randomness (A. Maass, S. Martinez and J. San Martin, eds), Nonlinear Phenomena and Complex Systems, Kluwer Acad. Publ. (2002), pp. 1-30.

A class of cellular automata modeling winnerless competition (with F. C. Ordáz and J. Urías), Chaos, vol. 12, N2 (2002).

Synchronization in directionally coupled systems (with J.-R. Chazottes and A. Cordonet), Discrete Contin. Dyn. Syst., Ser. B, vol. 1 (2001), 421-442.

Cluster periodic solutions in globally coupled maps (with A. L. Gelover Santiago and R. Lima), Internet J. Bifur. Chaos Appl. Sci. Engrg, vol. 11 (2001), 1929-1936.

Infinitely spatially complex solutions of PDE and their homotopy complexity (with A. Babin and S.-N. Chow), Comm. Anal. Geom. vol. 9 (2001), 289-339.

Chaotic behavior of three competing species of May-Leonard model under small periodic perturbations (with S.-B.Hsu and H.-E.Lin), Internet.J.Bifur.Chaos Appl.Sci.Engrg., vol.11 (2001), 435-447.

Nonsmooth functions in generalized synchronization of chaos (with J.-R.Chazotes and A.Cordonet), Phys. Lett.A, vol. 283 (2001), 109-112

Multivalued mappings in generalized chaos synchronization (with N.F.Rulkov, C.T.Lewis, J.-R.Chazottes and A.Cordonet),Phys.Rev.E, vol.64 (2001), 016217.

Multipliers of heteroclinic cycles (with Todd Young), Far East J. Dyn. Syst., vol.2 (2000), 41-51.

Local dimensions for Poincaré recurrences (with J.-R. Chazottes and B. Saussol), Electron.Res.Announc.Amer.Math.Soc., vol.6 (2000), 64-74.

Spectra of dimensions for Poincaré recurrences. (with J. Schmeling, E. Ugalde, and J. Urías), Discrete Continuous Dynamical Systems (2000), 6, no. 4, 901-914.

Mather invariants and smooth conjugacy on S^2 . (with T. Young) Journal Dynam. Control Systems (2000), 6, no. 3, 341-352.

Topological properties of linearly coupled expanding map lattices, (with B. Fernandez) Nonlinearity (2000) 13, no. 4, 973-993.

On the abundance of traveling waves in coupled expanding circle maps. (with M. Courbage) Methods of qualitative theory of differential equations and related topics, 15–21, Amer. Math. Soc. Transl. Ser. 2, 200, Amer. Math. Soc., Providence, RI, 2000.

Poincaré recurrences for rhythmical dynamics. (with E. Ugalde and J. Urias) Far East Journal of Dynamical Systems (2000), 2, 53-67.

Fractal dimension for Poincaré recurrences as an indicator of synchronized chaotic regimes (with W.W. Lin and N.F.Rulkov), International Journal of Bifurcation and Chaos, 10 (2000), 2323-2337.

Multipliers of homoclinic orbits on surfaces and characteristics of associated invariant sets (with T.R. Young), Discrete and Continuous Dynamical Systems (2000), 3, 691-704.

Symbolic dynamics for sticky sets in Hamiltonian systems (with A. Maass and J. Urias), Nonlinearity, 13 (2000), 1-21.

Poincaré recurrences for coupled subsystems in synchronized regimes, Taiwanese Journal of Math, 3, N2 (1999), 139-161.

Synchronization in Lattices of Coupled Oscillators with Neumann/Periodic Boundary Conditions (with W.-W. Lin), Dynamics and Stability of Systems, 13, N3 (1998) 237-264.

Sticky Orbits of Chaotic Hamiltonian Dynamics (with G.M. Zaslavsky). “Lecture Notes in Phys. 511”, pp. 59–84, 1998.

Relative density of irrational rotation numbers in families of circle diffeomorphisms (with T. Young). “Ergodic theory and dynamical systems”, 18 (1998), 1-16.

Uniform dissipativeness and synchronization on nonautonomous equations (with H.M. Rodrigues), Equadiff95, International Conference on Differential Equations, World Scientific, Singapore, (1998) 3-17. 94-202, 1994.

Fractal and multifractal properties of exit times and Poincaré recurrences (with G.M. Zaslavsky), Phys. Rev. E 55, N5 (1997), 5440-5427.

Synchronization in lattices of coupled oscillators (with J.K. Hale and S-N. Chow), *Physica D*, **V.103** (1997), 445-451.

Pesins dimension of Poincarè recurrences, *Chaos*, **7**, N1, 1997, 12-20

Spatial chaotic structure of attractors of reaction-diffusion systems (with A. Babin and S.-N. Chow), *Trans. Amer. Math. Soc.*, **348**, N.12, 1996, 5031-5063.

Conventional multipliers for homoclinic orbits (with W. Liu and T. Young), *Nonlinearity*, **9**, 1996, 115-136.

Hyperbolic homoclinic points of Z-d action in lattice dynamical systems (with S-N. Chow and W. Shen) *International J. of Bifurcation and Chaos*, **6**, N6, 1996, 1059-1075.

Generalization of a theorem of Malta and Palis (with T. Young), *WSSIAA*, **4**, 1995, 11-25.

Topological spatial chaos and homoclinic points of Z-d actions in lattice dynamical systems (with S-N. Chow), *Japan J. Indust. Appl. Math.* **12** 1995, 1-17.

Density of defects and spatial entropy in extended systems (with L.A. Bunimovich), *Physica D*, **80**, 1995, 277-288.

Statistical properties of 2-D generalized hyperbolic attractors(with N. Chernov and E.A. Sataev), *Chaos*, **5** (1), 1995, 238-252.

Lorenz type attractors from codimensional-one bifurcation (with S.-N. Chow and W. Liu), *J. of Dynamics and Differential Equations*, **7** (2), 1995, 375-407.

Stability of stationary states and topological spatial chaos in multidimensional lattice dynamical systems (with L. Yu. Glebsky and V.I. Nekorkin), *Random and Computational Dynamics*, **2**, 3-4, 1994, 287-303.

Chaos of traveling waves in a discrete chain of diffusively coupled maps (with V.I. Nekorkin), *International Journal of Bifurcation and Chaos*, **4** (3) (1994).

Special pseudotrajectories for lattice dynamical systems (with S.Yu Pilyugin), *Random and Computational Dynamics*, 1995.

Spatial chaos in lattice dynamical systems, *Proc. 14th IMACS World Congress, Atlanta, 1994*, 1042-1044.

Existence of evolution operators group for infinite lattice of coupled differential equation (with S.-N. Chow), *Dynamical Systems and Applications*, **3** (1994), 155-174.

Traveling waves in lattice models of multidimensional and multicomponent media. I. General hyperbolic properties (with Ya. Pesin), *Nonlinearity*, **6** (1993), 429-455.

Traveling waves in lattice models of multidimensional and multicomponent media. II. Ergodic properties and dimension (with Ya. Pesin and A. Tempelman), *Chaos*, **3** (1993), 233-241.

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