

Mrs. Panchuk Anastasiia Anatolijivna

Gender

Date of birth

Country of Permanent Residence

Citizenship

Ukraine

Cell phone number

E-mail

Other contact information (skype, viber, etc.)

viber, telegram, whatsapp at

SCIENTIFIC PROFILE

Scientific-research profile (Orcid, Google Scholar, Scopus authors, etc) minimum two:

<https://orcid.org/0000-0003-1705-602X>; https://scholar.google.com/citations?hl=ru&user=3KPptzsAAAAJ&view_op=list_works&authuser=1&sortBy=pubdate; <https://www.scopus.com/authid/detail.uri?authorId=26653612600>

<https://www.scopus.com/authid/detail.uri?authorId=26653612600>

Research experience: number of years

21

Total number of patents

0

Total number of publications

33

Number of publications in Q1 & Q2 quartile journals for the last 10 years

13

Hirsch index (SCOPUS)

8

Number of monographs

0

Obtained research grants

Individual fellowship for young scientists from INTAS: № YSF 01-165 (2001-2003); grants from Swedish Institute within the Visby Program: № 382 /00635/2009 (2009); № 01936/2010 382 (2011); grants for scientific visits from COST within the Action IS1104 "The EU in the new complex geography of economic systems: models, tools and policy evaluation": № 031212-024707 (2012); № 150413-024708 (2013); № 070513-030405 (2013); № 080913-034490 (2013); № 060114-038016 (2014); № 040214-039719 (2014); № 170315-056174 (2015)

Experience as a reviewer (peer review of scholarly papers, review of research projects)

Since 2009 till now serves as a reviewer at many international scientific journals in mathematics, physics, economics and interdisciplinary scientific areas, such as, Advances in Difference Equations; Applications and Applied Mathematics; Applied Mathematics and Computation; Chaos; Chaos, Solitons and Fractals; Complexity; Decisions in Economics and Finance; Frontiers in Applied Mathematics and Statistics; Journal of Economic Interaction and Coordination; Mathematics and Computers in Simulation; Nonlinear Dynamics; Nonlinearity etc.

RESEARCH ACTIVITY

Differential equations

Area of expertise

Natural, technical sciences and mathematics

Branch of science

Physical and mathematical sciences

Keywords

nonlinear dynamical systems, theory of bifurcations and chaos, piecewise smooth dynamical systems defined by difference equations, differential equations

Number of publications in the field of expertise

33

LIST OF SCIENTIFIC PUBLICATIONS WHICH ARE RELEVANT FOR THIS COMPETITION (ENTER NOT MORE THAN 12 PUBLICATIONS)

[10.3934/dcdsb.2021117](#)

Panchuk Anastasiia, Westerhoff Frank

Speculative behavior and chaotic asset price dynamics: On the emergence of a bandcount accretion bifurcation structure

Discrete & Continuous Dynamical Systems - B, American Institute of Mathematical Sciences (AIMS), 2021

financial markets, asset price dynamics, chartists and fundamentalists, multiband chaotic attractors, contact bifurcation for critical points, bandcount accretion bifurcation structure

[10.1098/rspa.2021.0432](#)

Avrutin Viktor, Panchuk Anastasiia, Sushko Iryna

Border collision bifurcations of chaotic attractors in one-dimensional maps with multiple discontinuities

Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, The Royal Society, 2021

piecewise smooth systems, one-dimensional maps, border collision bifurcations, chaotic attractors

[10.1007/s11071-020-05898-8](#)

Cerboni Baiardi Lorenzo, Panchuk Anastasiia

Global dynamic scenarios in a discrete-time model of renewable resource exploitation: a mathematical study

Nonlinear Dynamics, Springer Science and Business Media LLC, 2020

chaotic dynamics, noninvertible maps, Milnor attractor, global bifurcations, complexity

[10.1016/j.chaos.2019.109470](#)

Cerboni Baiardi Lorenzo, Naimzada Ahmad K., Panchuk Anastasiia

Endogenous desired debt in a Minskyan business model

Chaos, Solitons & Fractals, Elsevier BV, 2020

Minsky hypothesis, financial fragility, business cycle, Neimark-Sacker bifurcation, critical lines

[10.1016/j.chaos.2019.06.008](https://doi.org/10.1016/j.chaos.2019.06.008)

Merlone Ugo, Panchuk Anastasiia, van Geert Paul

Modeling learning and teaching interaction by a map with vanishing denominators: Fixed points stability and bifurcations

Chaos, Solitons & Fractals, Elsevier BV, 2019

maps with vanishing denominator, focal points, developmental psychology, learning and teaching coupling

[10.1063/1.5024382](https://doi.org/10.1063/1.5024382)

Panchuk Anastasiia, Sushko Iryna, Westerhoff Frank

A financial market model with two discontinuities: Bifurcation structures in the chaotic domain

Chaos: An Interdisciplinary Journal of Nonlinear Science, AIP Publishing, 2018

multiband chaotic attractors, contact bifurcation for critical points, bandcount accretion bifurcation structure, financial markets, asset price dynamics

[10.1016/j.cnsns.2017.08.003](https://doi.org/10.1016/j.cnsns.2017.08.003)

Panchuk A., Puu T.

Dynamics of a durable commodity market involving trade at disequilibrium

Communications in Nonlinear Science and Numerical Simulation, Elsevier BV, 2018

durable commodity markets, disequilibrium trade, path dependence, piecewise smooth systems

[10.1016/j.matcom.2015.05.004](https://doi.org/10.1016/j.matcom.2015.05.004)

Cánovas Jose S., Panchuk Anastasiia, Puu Tõnu

Asymptotic dynamics of a piecewise smooth map modelling a competitive market

Mathematics and Computers in Simulation, Elsevier BV, 2015

multidimensional piecewise smooth map, coexisting metric attractors, oligopoly market model, Cournot equilibrium stability

[10.1016/j.chaos.2015.05.013](https://doi.org/10.1016/j.chaos.2015.05.013)

Foroni Ilaria, Avellone Alessandro, Panchuk Anastasiia

Sudden transition from equilibrium stability to chaotic dynamics in a cautious tâtonnement model

Chaos, Solitons & Fractals, Elsevier BV, 2015

one dimensional bimodal piecewise smooth map, degenerate bifurcations, border collision bifurcations, discrete time tâtonnement process

[10.1142/S0218127415300062](https://doi.org/10.1142/S0218127415300062)

Panchuk Anastasiia, Sushko Iryna, Avrutin Viktor

Bifurcation Structures in a Bimodal Piecewise Linear Map: Chaotic Dynamics
International Journal of Bifurcation and Chaos, World Scientific Pub Co Pte Lt, 2015
bimodal piecewise linear map, border collision bifurcation, border collision normal form,
homoclinic bifurcation

[10.1016/j.matcom.2013.09.007](https://doi.org/10.1016/j.matcom.2013.09.007)

Panchuk Anastasiia, Puu Tõnu

Oligopoly model with recurrent renewal of capital revisited
Mathematics and Computers in Simulation, Elsevier BV, 2013
oligopoly market, isoelastic demand function, non-constant returns

[10.1142/S0218127413300401](https://doi.org/10.1142/S0218127413300401)

Panchuk Anastasiia, Sushko Iryna, Schenke Björn, Avrutin Viktor

Bifurcation structures in a bimodal piecewise linear map: Regular dynamics
International Journal of Bifurcation and Chaos, World Scientific Pub Co Pte Lt, 2013
bimodal piecewise linear map, border collision bifurcation, border collision normal form,
period adding bifurcation structure

EDUCATION

Kyiv National Taras Shevchenko University

Country	City
Ukraine	Kyiv
Faculty (school)	Specialisation
mechanics-mathematics	mathematics
Diploma number	Date of issue
KB №13888359	20.06.2000

EMPLOYMENT AND POSITION

Institute of Mathematics

Position	Employment period
senior scientific researcher	01.12.2003 - Current employment
Institution's subordination	Institutions EDRPOU code (for Ukrainian institutions only, foreign experts enter 00000000)
National Academy of Sciences of Ukraine	00000000
Country	City
Ukraine	Kyiv
Institution's Address	

Tereshchenkivska str., 3, Kyiv, Ukraine, 01024

Office phone number
(+38044) 234 5150

SCHOLARLY / RESEARCH DEGREE

Ph.D.

Diploma number
ДК №029824

Date of issue
08.06.2005

ACADEMIC RANK

- Senior researcher

Curriculum Vitae

I. Name Panchuk

II. First name Anastasiia **Middle name** Anatolijivna

III. Birth place Kyiv, Ukraine

IV. Birth date 31.05.1978

V. Nationality Ukraine

VI. Address

Office:

Institute of Mathematics
National Academy of Sciences of Ukraine
Tereshchenkivska str., 3
01024 Kyiv
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Gerojiv Dnipra str., 42b, apt. 92
04214 Kyiv
Ukraine

VII. Academic Position Senior scientific researcher

Institute of Mathematics
National Academy of Sciences of Ukraine

VIII. Scientific Biography

A. Education and Scientific Employment.

1995-2000 Student of Mechanics-Mathematics Faculty
Kyiv National Taras Shevchenko University
(graduated with honour diploma)

2000-2003 Post-graduate student
Institute of Mathematics
National Academy of Sciences of Ukraine
(supervisor — Prof. Yuri Maistrenko)

2003 - 2008 Junior scientific researcher
Institute of Mathematics
National Academy of Sciences of Ukraine

2008 - 2011 Scientific researcher
Institute of Mathematics
National Academy of Sciences of Ukraine

- COST: Short-term scientific mission to University of Amsterdam, Netherlands, May, 07–13, 2013 (Ref. No. 070513-030405, within the framework of the Action IS1104 “The EU in the new complex geography of economic systems: models, tools and policy evaluation”)
- COST: Short-term scientific mission to University of Urbino, Italy, September, 08–19, 2013 (Ref. No. 080913-034490, within the framework of the Action IS1104 “The EU in the new complex geography of economic systems: models, tools and policy evaluation”)
- COST: Short-term scientific mission to Umeå University, Sweden, January, 06–21, 2014 (Ref. No. 060114-038016, within the framework of the Action IS1104 “The EU in the new complex geography of economic systems: models, tools and policy evaluation”)
- COST: Short-term scientific mission to Politechnical University of Cartagena, Spain, February, 04–14, 2014 (Ref. No. 040214-039719, within the framework of the Action IS1104 “The EU in the new complex geography of economic systems: models, tools and policy evaluation”)
- COST: Short-term scientific mission to University of Urbino, Italy, March, 17–30, 2015 (Ref. No. 170315-056174, within the framework of the Action IS1104 “The EU in the new complex geography of economic systems: models, tools and policy evaluation”)

E. International Conferences and Workshops:

1. 2nd European Interdisciplinary School on Nonlinear Dynamics for System and Signal Analysis EUROATTRACTOR 2001, June 19 – 28, 2001, Warsaw, Poland.
Talk: *Asymptotical behaviour of mean-field coupled maps*
2. International Workshop and Seminar on Control, Communication, and Synchronization in Chaotic Dynamical Systems (Workshop: October 14 – 19, 2001 Seminar: October 20 – 26, 2001), Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.
Talk: *Stable periodic clusters in system of globally coupled logistic maps*
3. NATO Advanced Study Institute “Synchronization: Theory and Application”, May 19 - June 1, 2002, Yalta, Ukraine.
Talk: *Stability of periodic clusters in a system of globally coupled oscillators*
4. Nonlinear Dynamics of Electronic Systems 2003, May 18 - 21, 2003, Scuol, Switzerland.
Talk: *Clustering in the turbulent phase*
5. Trends in Pattern Formation: From Amplitude Equations to Applications (2nd Workshop), September 15 - 19, 2003, Dresden, Germany.
Poster: *Clustering in globally coupled map systems*
6. School-Forum “Coupled Map Lattices 2004”, Institute Henri Poincaré, June 21 – July 2, Paris, France.
Talk: *Partial synchronization in globally coupled map systems*
7. International Conference and Workshops “Nonlinear Dynamics, Chaos, and Applications (NDCA)”, May 15-26, 2006, Yalta, Crimea, Ukraine.
Talk: *Synchronization of globally coupled chaotic maps: clusters and quasi-clusters*

8. European Conference on Iteration Theory (ECIT) 2008, September 7-13, 2008, Yalta, Crimea, Ukraine.
Talk: *Synchronization and stability in a non-autonomous iterative system*
9. The 6th International Conference on Nonlinear Economic Dynamics (NED09), 31 May – 2 June, 2009, Jönköping International Business School, Sweden.
Talk: *Industry dynamics, stability of Cournot equilibrium, entry of firms and renewal of capital*
10. 17th International Workshop on Nonlinear Dynamics of Electronic Systems, June 21-24, 2009, Rapperswil, Switzerland.
Talk: *Regular spiking in FitzHugh-Nagumo systems coupled through linear delay term*
11. Ukrainian Mathematical Congress – 2009 (devoted to 100-anniversary of M.M.Bogolyubov birth), 27-29 August, 2009, Institute of Mathematics, NAS of Ukraine, Kyiv, Ukraine.
Talk: *Iteration system with periodic perturbation: Application to economics*
12. International Workshop on Nonlinear Maps and their Applications (NOMA'09), September 10-11, 2009, University of Urbino, Italy.
Talk: *Regular spiking in FitzHugh-Nagumo systems coupled through linear delay term*
13. International Workshop on Delayed Complex Systems, October 5-9, 2009, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.
Talk: *Regular spiking in asymmetrically delay-coupled FitzHugh-Nagumo systems*
14. 18th IEEE Workshop on Nonlinear Dynamics of Electronic Systems, May 26–28, 2010, Technische Universität Dresden, Germany.
Talk: *Coupled FitzHugh-Nagumo systems: Patterns induced by a delay coupling and a feedback*
15. International Workshop Nonlinear Dynamics on Networks, July 5–9, 2010, National Academy of Sciences of Ukraine, Kyiv, Ukraine.
Talk: *Coupled FitzHugh-Nagumo systems: patterns induced by a delay coupling and a feedback*
16. European Conference on Iteration Theory 2010, 12-17 September, 2010, Nant, France.
Talk: *Dynamics in the oligopoly model with recurring renewal of capital*
17. Third Workshop “Modelli Dinamici in Economia e Finanza” (MDEF2010), September 16-18, 2010, University of Urbino, Italy.
Talk: *Dynamics in the oligopoly model with recurring renewal of capital*
18. The 7th International Conference on Nonlinear Economic Dynamics (NED11), 1 — 3 June, 2011, Cartagena, Spain.
Talk: *Oligopoly model with recurring renewal of capital*
19. International Conference on Differential Equations and Their Applications, 8 — 10 June, 2011, Kyiv National Taras Shevchenko University, Ukraine.
Talk: *Delay differential equations for modeling coupled neurons*

20. International Workshop on Nonlinear Maps and their Applications (NOMA'11), September 15-16, 2011, University of Évora, Portugal.
Talk: *Three Segmented Piecewise-Linear Map*
21. International Conference on Structural Nonlinear Dynamics and Diagnosis (CSNDD), April 30-May 2, 2012, Marrakech, Morocco.
Talk: *Delay FitzHugh-Nagumo equations for modelling coupled neurons*
22. International Conference on Emergent Dynamics of Oscillatory Networks, May 20-27, 2012, Mellas, Crimea, Ukraine.
Talk: *Delay FitzHugh-Nagumo equations for modelling coupled neurons*
23. International Workshop “Modelli Dinamici in Economia e Finanza”, September 20-22, 2012, University of Urbino, Italy.
Talk: *Oligopoly model with recurrent renewal of capital: modifications and new results*
24. European Conference on Iteration Theory (ECIT) 2012, September 9-15, 2012, Ponta Delgada, São Miguel, Açores, Portugal.
Talk: *Cycles and their bifurcations in a bimodal piecewise linear map*
25. International Conference on Nonlinear Economic Dynamics (NED13), 4—6 July, 2013, Siena, Italy.
Talk (together with T. Puu): *Disequilibrium trade and dynamics of stock markets*
26. 8th SICCC International Tutorial Workshop “Topics in nonlinear dynamics”, Bifurcations in Piecewise-Smooth Systems: Perspectives, Methodologies and Open Problems, 11–13 September, 2013, University of Urbino (PU), Italy
Talk: *Bifurcation structure in 1D PWL bimodal maps. Regular dynamics*
27. International Conference on Nonlinear Economic Dynamics (NED15), 25—27 June, 2015, Tokyo, Japan.
Talk (together with T. Puu): *Dynamics of a stock market involving disequilibrium trade*
28. Training School on “Qualitative Theory of Dynamical Systems, Tools and Applications”, 17–19 September, 2015, University of Urbino “Carlo Bo” — DESP, Italy
Lecture: *Global analysis of dynamical systems and numerical methods*
29. Final GeComplexity Conference “The EU in the new complex geography of economic systems: models, tools and policy evaluation”, 26–27 May, 2016, Heraklion, Crete, Greece.
Talk: *Dynamics of a stock market involving disequilibrium trade*
30. 9th International Workshop “Modelli Dinamici in Economia e Finanza”, 23–25 June, 2016, University of Urbino “Carlo Bo” — DESP, Italy.
Talk: *Renewable resource exploitation described by a discrete time nonlinear model with replicator dynamics*
31. 11th International Conference “Progress on Difference Equations” (PODE 2017), 29–31 May, 2017, University of Urbino “Carlo Bo” — DESP, Italy.
Talk: *Bifurcation structures related to chaotic attractors in a 1D PWL map defined on three partitions*

32. 10th International Workshop “Modelli Dinamici in Economia e Finanza”, 6–8 September, 2018, University of Urbino “Carlo Bo” — DESP, Italy.
Talk: *A piecewise linear map with two discontinuities: bifurcation structures in the chaotic domain*
33. International Conference on Nonlinear Economic Dynamics (NED19), 4–6 September, 2019, Kyiv, Ukraine.
Talk: *Modelling learning and teaching interaction by a map with vanishing denominators*
34. International Conference on Difference Equations and Applications (ICDEA 2021 Virtual), 26–30 July, 2021, Sarajevo, Bosnia and Herzegovina.
Talk: *Border collision bifurcations of chaotic attractors in 1D maps with multiple discontinuities*
35. International Conference on Nonlinear Economic Dynamics (NED21), 13–15 September, 2021, Milan, Italy.
Talk: *Interplay between honest and dishonest agents given an endogenous monitoring: bifurcation structure overview*

F. Guest Researcher:

- Denmark Technical University, Lyngby, Denmark (March – April, 2001)
- Swiss Federal Institute of Technology, Lausanne, Switzerland (January – March, 2002; January – March, 2003)
- Bristol University, UK (February, 2006)
- Technical University of Berlin, Germany (December, 2006; November, 2008; October 2009; October – November, 2010)
- University of Umeå, Sweden (March, 2008; May – June, 2009; April, 2010; February – March, 2011; January, 2014)
- University of Urbino, Italy (September, 2009; June – July, 2010; September, 2010; September, 2011; September, 2012; September, 2013; September, 2014; March, 2015; February, 2016; June, 2017)
- Politechnical University of Cartagena, Spain (November, 2009; June, 2012; April, 2013; February, 2014; October, 2017)
- University of Tartu, Estonia (December, 2012)
- University of Amsterdam, Netherlands (May, 2013)
- CAMGSD, Instituto Superior Técnico, Universidade de Lisboa, Portugal (April, 2018)

G. Publications:**Selected publications (relevant for the competition)**

1. V. Avrutin, A. Panchuk, I. Sushko, Border collision bifurcations of chaotic attractors in one-dimensional maps with multiple discontinuities, *Proceedings of the Royal Society A*, **477**, P. 20210432 (2021); doi: 10.1098/rspa.2021.0432. Q1. [Web Of Science]
2. A. Panchuk, F. Westerhoff, Speculative behavior and chaotic asset price dynamics: On the emergence of a bandcount accretion bifurcation structure, *Discrete & Continuous Dynamical Systems – B*, **26**(11), pp. 5941–5964 (2021); doi: 10.3934/dcdsb.2021117. Q2. [Scopus]
3. L. C. Baiardi, A. Panchuk, Global dynamic scenarios in a discrete-time model of renewable resource exploitation: a mathematical study, *Nonlinear Dynamics*, **102**, pp. 1111–1127 (2020); doi: 10.1007/s11071-020-05898-8. Q1. [Scopus]
4. L. C. Baiardi, A. K. Naimzada, A. Panchuk, Endogenous desired debt in a Minskyan business model, *Chaos, Solitons & Fractals*, **131**, pp. 109470 (2020); doi: 10.1016/j.chaos.2019.109470. Q1. [Scopus]
5. U. Merlone, A. Panchuk, P. van Geert, Modeling learning and teaching interaction by a map with vanishing denominators: Fixed points stability and bifurcations, *Chaos, Solitons & Fractals*, **126**, pp. 253–265 (2019); doi: 10.1016/j.chaos.2019.06.008. Q1. [Scopus]
6. A. Panchuk, I. Sushko, F. Westerhoff, A financial market model with two discontinuities: bifurcation structures in the chaotic domain, *Chaos*, **28**, pp. 055908 (2018); doi: 10.1063/1.5024382. Q1. [Scopus]
7. A. Panchuk, T. Puu, Dynamics of a durable commodity market involving trade at disequilibrium, *Communications in Nonlinear Science and Numerical Simulation*, **58**, pp. 2–14 (2018); doi: 10.1016/j.cnsns.2017.08.003. Q1. [Scopus]
8. J. S. Cánovas, A. Panchuk, T. Puu, Asymptotic dynamics of a piecewise smooth map modelling a competitive market, *Math. Comp. Simul.*, **117**, pp. 20–38 (2015); doi: 10.1016/j.matcom.2015.05.004. Q2. [Scopus]
9. I. Foroni, A. Avellone, A. Panchuk, Sudden transition from equilibrium stability to chaotic dynamics in a cautious tâtonnement model, *Chaos, Solitons & Fractals*, **79**, pp. 105–115 (2015); doi: 10.1016/j.chaos.2015.05.013. Q2. [Scopus]
10. A. Panchuk, I. Sushko, V. Avrutin, Bifurcation structures in a bimodal piecewise linear map: Chaotic dynamics, *Int. J. Bif. Chaos*, **25**(3), 1530006 (2015); doi: 10.1142/S0218127415300062. Q2. [Scopus]
11. A. Panchuk, T. Puu, Oligopoly model with recurrent renewal of capital revisited, *Math. Comp. Simul.*, **108**, pp. 119–128 (2015); doi: 10.1016/j.matcom.2013.09.007. Q2. [Scopus]
12. A. Panchuk, I. Sushko, B. Schenke, V. Avrutin, Bifurcation structures in a bimodal piecewise linear map: Regular dynamics, *Int. J. Bif. Chaos*, **23**(12), 1330040 (2013); doi: 10.1142/S0218127413300401. Q2. [Scopus]

Other publications

1. A. Panchuk, I. Sushko, V. Avrutin, Bifurcation structures in a bimodal piecewise linear map, *Frontiers in Applied Mathematics and Statistics*, **3**, pp. 1–7 (2017); doi: 10.3389/fams.2017.00007. [Scopus]
2. A. Panchuk, Some aspects on global analysis of discrete time dynamical systems, In: *Qualitative Theory of Dynamical Systems, Tools and Applications for Economic Modelling*, G. I. Bischi, A. Panchuk, D. Radi (Eds.), Springer(2016), pp. 161–186; doi: 10.1007/978-3-319-33276-5_2. [Scopus]
3. A. Panchuk, Dynamics of industrial oligopoly market involving capacity limits and recurrent investment, In: *Complexity and Geographical Economics*, P. Commendatore, S. Kayam, I. Kubin (Eds.), Springer (2015), pp. 249–275; doi: 10.1007/978-3-319-12805-4_10.
4. J. S. Cánovas, A. Panchuk, T. Puu, Role of reinvestment in a competitive market, No 12, Geocomplexity Discussion Paper Series, Action IS1104 “The EU in the new complex geography of economic systems: models, tools and policy evaluation” (2015); <https://EconPapers.repec.org/RePEc:cst:wpaper:12>.
5. A. Panchuk, CompDTIME: Computing one-dimensional invariant manifolds for saddle points of discrete time dynamical systems, No 11, Geocomplexity Discussion Paper Series, Action IS1104 “The EU in the new complex geography of economic systems: models, tools and policy evaluation” (2015); <https://EconPapers.repec.org/RePEc:cst:wpaper:11>.
6. A. Panchuk, D. P. Rosin, P. Hövel, E. Schöll, Synchronization of coupled neural oscillators with heterogeneous delays, *Int. J. Bif. Chaos*, **23**(12), 1330039 (2013); doi: 10.1142/S0218127413300395. Q2. [Scopus]
7. A. Panchuk, T. Puu, Industry dynamics, stability of Cournot equilibrium, and renewal of capital, In: *Nonlinear Economic Dynamics*, T. Puu, A. Panchuk, Eds., Nova Science Publishers, pp. 259-276 (2011). [Scopus]
8. A. Panchuk, Three segmented piecewise-linear map, In: Proc. Int. Conf. “Nonlinear Maps and their Applications” (NOMA), Evora, Portugal, September 15–16, pp.3–6 (2011).
9. T. Puu, A. Panchuk, Oligopoly and stability, *Chaos, Solitons & Fractals*, **41**(5), pp. 2505–2516 (2009); doi: 10.1016/j.chaos.2008.09.037. Q1. [Scopus]
10. A. Panchuk, T. Puu, Cournot equilibrium stability in a non-autonomous system modeling the oligopoly market, *Grazer Mathematische Berichte*, **354**, pp. 201–218 (2009).
11. A. Panchuk, T. Puu, Stability in a non-autonomous iterative system: An application to oligopoly, *Comp. Math. Appl.*, **58**(10), pp. 2022–2034 (2009); doi: 10.1016/j.camwa.2009.06.048. Q2. [Scopus]
12. M. A. Dahlem, G. Hiller, A. Panchuk, E. Schöll, Dynamics of delay-coupled excitable neural systems, *Int. J. Bif. Chaos*, **19**(2), pp. 745–753 (2009); doi: 10.1142/S0218127409023111. Q2. [Scopus]

13. A. Panchuk, M. Dahlem, E. Schöll, Regular spiking in asymmetrically delay-coupled FitzHugh-Nagumo systems, <http://arxiv.org/abs/0911.2071> (2009).
14. A. Panchuk, M. Dahlem, E. Schöll, Regular spiking in FitzHugh-Nagumo systems coupled through linear delay, In: Proc. 17th Int. Workshop on Nonlinear Dynamics of Electronic Systems (NDES 2009), pp. 176–179 (2009).
15. A. Panchuk, M. Dahlem, E. Schöll, Modelling coupled neurons: role of the delay terms in producing spiking and bursting, In: Proc. Int. Workshop on Nonlinear Maps and their Applications (NOMA'09), pp. 120–123 (2009).
16. M. A. Dahlem, F. M. Schneider, A. Panchuk, G. Hiller, and E. Schöll, Control of sub-excitable waves in neural networks by nonlocal coupling, In: Proc. Int. Workshop Networks 2007, Aranjuez, 10–11 September 2007, pp. 1–15 (2007).
17. A. Panchuk, Partial synchronization in systems of globally coupled maps, *Nonlin. Osc. (Kiev)*, **Vol. 7(2)**, pp.229–240 (2004); (in Ukrainian); http://www.imath.kiev.ua/nosc/admin/private/published_files/205/NOSC205200471999.pdf.
18. Yu. Maistrenko, A. Panchuk, *Clustering zones in the turbulent phase of a system of globally coupled chaotic maps*, *Chaos* **Vol. 13**, No. 3, pp.990–998 (2003); doi: 10.1063/1.1592331. Q1. [Scopus]
19. A. Panchuk, Yu. Maistrenko, and M. Hasler, *Clustering in the turbulent phase*, Proc. of NDES'03, Scuol, Switzerland, 2003, pp.193–196 (2003).
20. A. Panchuk, Yu. Maistrenko, *Asymptotic behaviour of mean-field coupled maps*, Proc. of Int. Conf. EUROATTRACTOR 2001, **Vol. 2**, pp. 256–262 (2003).
21. A. Panchuk, Yu. Maistrenko, *Stability of periodic clusters in globally coupled maps*, *Nonlin. Osc. (Kiev)*, **Vol. 5(3)**, pp.334–345 (2002); http://www.imath.kiev.ua/nosc/admin/private/published_files/415/NOSC415200252000.pdf.