

## CURRICULUM VITAE

### Alexander V. Panfilov

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### EDUCATION:

1973-1979 B.S. and M.Sc. *cum laude* in Theoretical Physics, Moscow  
Institute of Physics and Technology, USSR  
1979-1983 Ph.D. in biophysics, Institute of Biological Physics, Pushchino,  
USSR Academy of Sciences

### PROFESSIONAL APPOINTMENTS:

1979-1982 Research Associate on mathematical modeling, at the Institute of  
Biological Physics, USSR Academy of Sciences,  
1982-1990 Research Member on mathematical modeling, at the Institute of  
Biological Physics, USSR Academy of Sciences,  
1992-2005 University Docent (tenured), Department of Theoretical Biology,  
Utrecht University, The Netherlands.  
2003-2004 Professor, Division of Mathematics, University of Dundee, Scotland  
2005-2011 University Hoofddocent, Department of Theoretical Biology,  
Utrecht University, The Netherlands.  
**2011-present** Professor, Department of Physics and Astronomy,  
Gent University, Belgium.

### ADDITIONAL APPOINTMENTS:

1990 Research Member, Center for Nonlinear Studies,  
University of Leeds, Leeds, UK.  
1990-1992 Visiting assistant Professor, Department of Mathematics,  
University of Utah, Salt Lake City, Utah, USA  
2001 Visiting Professor at Isaac Newton Institute for Mathematical  
studies, Cambridge University, Cambridge, UK  
**2005-present** Honorary Professor of Mathematics, University of Dundee, Scotland  
2006 Visiting Professor of IHES, Bures-sur-Yvette, France  
2007 Visiting Professor, Courant Institute, NYU, New York City, USA  
2007 Visiting Professor of IHES, Bures-sur-Yvette, France  
2008 Visiting Professor of University Paris Descartes, Paris, France

- 2008 Visiting Professor, Courant Institute, NYU, New York City, USA
- 2009 Visiting Professor at Isaac Newton Institute for Mathematical studies, Cambridge University, Cambridge, UK
- 2009 Visiting Professor, Courant Institute, NYU, New York City, USA

### **UNIVERSITY QUALIFICATIONS:**

- 1997 Basic university teaching qualification
- 1997 Senior university teaching qualification
- 2004 Senior university research qualification

### **TEACHING:**

Various undergraduate and graduate courses on mathematics and mathematical biology.

Developing of the following courses based on own readers and tutorial manuals:

“Qualitative analysis of differential equations of one and two variables”.

“Non-linear dynamical systems”.

“Theoretical Physiology”.

Supervision of more than 30 M.Sc research projects and the following PhD research projects:

*Alexandre N. Rudenko*, Numerical studies of vortex dynamics in three- dimensional excitable medium, 1987

*Bahtier N. Vasiev*, Vortex dynamics in heterogeneous excitable medium, 1990.

*Stan Maree*, From Pattern formation to Morphogenesis, 2000.

*Christian Zemlin*, Rhythms and Wave Propagation in the Heart, 2002.

*Olivier Bernus*, Development of a realistic computer model of the human ventricles to study of reentrant arrhythmias, 2003.

*Kirtsen ten Tusscher*, Spiral wave dynamics and ventricular arrhythmias , 2004.

*Rikkert Keldermann*, Mechanisms of Ventricular Fibrillation The role of mechano-electrical feedback and tissue heterogeneity, 2009.

### **PROFESSIONAL ACTIVITIES:**

Organizer:

A member of the Organizing committee of international conference on excitable media, Pushchino, 1983.

A member of the Organizing committee of international conference on excitable media, Pushchino, 1990.

Organizer of international workshop on Whole heart modelling, Utrecht, The Netherlands, 1994.

Organizer of a Session on Whole heart modelling at the 4th ECMTB meeting, "Theory and Mathematics in Biology and Medicine", Amsterdam, 1999.

A member of the Organizing committee of workshop on non-linear dynamics in excitable media, Gent, 2007.

Journal reviewer:

American Journal of Physiology,  
Annals of Biomedical Engineering,  
Applied Physical Letters,  
Biophysical Journal,  
Bio-Medical Engineering OnLine,  
Bulletin of Mathematical Biology,  
Cardiovascular Research,  
Circulation,  
Circulation Research,  
Chaos,  
European Biophysics Journal,  
Europhysics Letters,  
FASEB Journal,  
IEEE Transactions on Biomedical Engineering,  
IEEE Transactions on Medical Imaging,  
Information Technology,  
Journal of Cardiovascular Electrophysiology  
Journal of Electrocardiology  
Journal of Mathematical Biology,  
Journal of Physical Chemistry,  
Journal of Theoretical Biology,  
Journal of Theoretical Medicine,  
Heart Rhythm,

Mathematical Biosciences,  
Mathematical Medicine and Biology,  
New Journal of Physics,  
Nonlinearity,  
Nature,  
Philosophical Transactions: Physical Sciences and Engineering,  
Physics in Medicine and Biology,  
PLoS Computational Biology,  
PLoS ONE,  
Physical Letters,  
Physical Review,  
Physical Review Letters,  
Physica D,  
PNAS,  
Progress in Biophysics and Molecular Biology,  
Progress in Neurobiology,  
Royal Society journal INTERFACE,  
Science,  
SIAM J. Applied Mathematics,  
The European Physical Journal B,  
The Journal of Physiology

**PARTICIPATION IN SCIENTIFIC ORGANIZATIONS:**

Member of the Society of Theoretical Biology, Member of the Physiological Society of Great Britain, Member of the Dutch Society of Theoretical Biology, Member of the American Physiological Society.

**GRANTS:**

Awards since 1993:

For visit of Dr. Vasiev, NWO, 1993.

For organization of International conference “Whole heart modelling”, Utrecht, NWO,93/8449 SB140 HSo, 1993.

For visit of Dr. Aliev, NWO, 1994.

Visit to University of Auckland, New Zealand, NWO, 1995.

For visit of Prof. Jalife, NH, 1996.

For visit of Prof. Hunter, NWO, 96/17384a/Tm 1996.

Visit to Conference “ Non-pharmacological management of atrial fibrillation”, London, NH,R95155,1996.

Visit to WCNA, Athens, Greece, NWO, 1996.

For visit of Prof. Keener, NWO, 98/12315a/Tm, 1998.

PhD Project, NWO, 1995.

PhD Project, NWO, 1997.

PhD Project, IWT, 1999.

Time on supercomputer 'Teras', NCF,SG-006,2001.

For parallelizing code on supercomputer, NCF,NRG-99,2001.

Time on supercomputer 'Teras', NCF,SG-095,2002.

Postdoc Project,(€ 237,981), NWO, 2003.

Computer system, (€ 12,500), NCF, 2003.

The Royal Society (UK) for visit of 25th annual scientific sessions of NASPE (conference grant), 2004.

For visit A.M. Pertsov and R. Clayton, NWO,EW,'Incidentele Steun' scheme, 2004.

PhD project, (€ 205,029), NWO, 2005.

PhD project, (€ 177,000), NWO, 2007.

SSF Utrecht University, for 3 months visitor, 2008.

Grant consultant:

since 1992. Consultant of 3 subsequent NSF grants Department of Mathematics University of Utah, USA; (Principal Investigator Prof. J. Keener).

1993-1998. Consultant of the NIH PPG grant at the Department of Pharmacology, SUNY, Syracuse,USA; (Principal Investigator Prof. J.Jalife).

1999-2004. A member of the External Advisory Board of the NIH PPG grant at the Department of Pharmacology, SUNY, Syracuse, USA; (Principal Investigator Prof. J. Jalife).

Grant reviewer:

Member of Peer Review College of the Engineering & Physical Sciences Research Council UK.

Gerber Foundation, USA.

German Israel Foundation.

Expert, FP7, European Commission.

Expert of the Slovenian Research Agency.

Israel Science Foundation,

National Science Foundation, USA.

Research Council of Norway.

Wellcome Trust Foundation, UK.

Marsden Fund, New Zealand.

Wiener Wissenschafts-, Forschungs- und Technologiefonds (WWTF), Austria.

BBSRC, UK.

MRC, UK.

Natural Sciences and Engineering Research Council of Canada.

Other activities:

Expert STEP Consortium 'Seeding the EuroPhysiome: A Roadmap to the Virtual Physiological Human' (2006-2007).

Panel member of the Slovenian Research Agency.

**INVITED PRESENTATIONS** (1992-current):

Meeting of the Theoretical Biology Society of the Netherlands, October 9, 1992

International conference "Nonlinear systems and Cell to Cell signaling", The Netherlands, November 14, 1992

Physiological Institute of University of Bern, Dec 11, 1992

Meeting of the Physiological Society of the Great Britain. Leeds, UK, 14 January 1993

Max Plank Institute, Dortmund, Germany, May 1993

Department of Pharmacology SUNY Health Center, Syracuse, NY, USA, August 1993

Experimental Cardiology, Academic Medical Center, Amsterdam, The Netherlands, 25 Oct. 1993

Zoologische Institute of University of Munchen, Munchen, Germany, 10 Nov. 1993

Medical Physics and Biophysics, Nijmegen, The Netherlands, 15 Nov. 1993

International workshop: "Whole heart modeling", Utrecht, The Netherlands, 12 February, 1994

ESF-workshop "Biological pattern formation", Heidelberg, Germany, 20-24 June, 1994

Department of Cardiology, UCLA, USA 15 Aug. 1994

International Conference: "Modeling the heart", Edinburgh, Scotland, 24-28 October, 1994

Department of engineering Science of Auckland University, New Zealand, 17 March 1995

Seminar of the Department of Mathematics, Canterbury University New Zealand, 24 March 1995

Department of BioMathematics, UCLA, USA 11 April 1995

The Third International Congress on Industrial and Applied Mathematics, Hamburg, Germany, 3-7 July, 1995

Center of Nonlinear Studies in Nice, France, approx. mid August, 1995

Department of Cardiology of the Harvard Medical School, Boston, USA, 11 December 1995

Heart-lung Institute of Academic Hospital of Utrecht, The Netherlands 15 February 1996

The Second world congress of Nonlinear Analysts, Athens, Greece, 16 July 1996

3rd European Conference on Mathematics Applied to Biology and Medicine. Heidelberg, Germany, October 6. - 10. , 1996

International workshop "Pattern formation in complex fluids and Biology", Dresden 1-5 September, 1997

Department of Chemistry, of Free University of Bruxelles, 17 February, 1998

Congress "Chaos en Order", University Utrecht, 6 March, 1998

Cardio-Vascular Research Training Institute, Salt Lake City, UT, USA, 15 April 1998

Department of Cardiology, University of California at Los Angeles, USA, 20 April, 1998

Seminar on "Nonlinearity in complex systems", of Department of Physics, Otto-von-Greerick Universitiet Magdeburg, Germany, 27 April, 1998

Conference at University of Warwick, UK, 1999

The Amsterdam Center for Computational Science, Friday 26 March 1999

Amsterdam Meeting of society of mathematical biology "Theory and mathematics in Biology and medicine". 29 June-3 July 1999

Workshop "Nonlinear Systems in Life Sciences", Leiden, Lorenz centrum, 30 Aug - 2 Sept 1999

Institute of Theoretical Biology, Humboldt University, Berlin, Germany. 16 November, 1999

California Institute of Technology, (Computational biology), 6 March 2000

Department of Cardiology, UCLA, 8 March 2000

Department of Mathematics University of Utah, 22 March 2000

Meeting of London Mathematical Society "Modeling Spatiotemporal Dynamics in Interacting Systems", Oxford: March 31st - April 1st, 2000

Pacemaker company "Vitatron", 19 April 2000

HPCN 2000 congress in Amsterdam, 10 May, 2001

Department of Medical Physics, KUN, 2001

Conference "Issues in Cardiovascular-Respiratory Control Modeling", Graz, Austria, 15 June, 2001

Conference "The integrated heart", Queenstown, New Zealand, 20 Aug 2001

World Congress of IUPS, Christchurch, New Zealand, August 2001

Isaac Newton Institute for Mathematical studies, University of Cambridge, September, 2001

Department of Cardiac Physiology, University of Manchester, UK, 2001

Department of Mathematics, University of Notre Dame, USA, 28 Nov, 2001

International conference "Dynamics of Networks and Spatially Extended Systems", Calcutta, India, 21-23 January 2002

The SIMBIOS Centre Seminar, Dundee, UK, 21 February, 2002

Institute of cardiovascular research of Free University of Amsterdam, 18 March 2002

Netherlands Modeling Club, AMC, Amsterdam, 6 June 2002

EPRSC workshop on engineering virtual tissues and organs, Leeds, UK, 17-18 June 2002

A World Congress in Cardiac Electrophysiology “Cardiostim 2002”, Nice, 19-22 June, 2002

Department of Biomedical Engineering, of the Case Western Reserve University, Cleveland, Ohio, USA, 6 November 2002

A Workshop on “Mathematical and numerical methods for modeling in the life sciences”, Gent, Belgium, November 28 - 29, 2002

A Workshop ‘Systems Biology’, Egmond aan Zee, the Netherlands, 6 - 7 March, 2003

University of Dundee, Scotland, 19 March 2003

Department of Biomedical Engineering, University of Erlangen, Germany, 27 March 2003

24th Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, Washington DC, USA, 14-17 May, 2003

A Workshop ”Complex Nonlinear Processes”, 11-13 September, Berlin, Germany, 2003

Institute of Biomedical Engineering, Karlsruhe, Germany, 14 October, 2003

Modelling for Integration with Proteins, Networks and Signals Workshop, Sheffield, UK, 4-6 November, 2003

School of Computing and Mathematical Sciences Seminar, Glasgow Caledonian University, Glasgow, UK, 14 November, 2003

Applied Mathematics Seminar, University of Dundee, Dundee, UK, 18 November, 2003

Institute of Biomedical and Life Science, University of Glasgow Glasgow, UK, 10 December, 2003

A workshop “Signal Transduction: muscles and synapse”, Columbus, OH, USA, 8-12 March, 2004

Department of Applied Mathematics, University of Liverpool, UK, 24 March 2004

Conference “Electromechanical behaviour of the heart: confronting models with data towards medical applications”, Rocquencourt, France, 26-30 April, 2004

25th Annual Scientific Sessions of the North American Society of Pacing and Electrophysiology, San Francisco, USA, 19-22 May, 2004

Congress in Cardiac Electrophysiology “Cardiostim”, Nice, France, 16-19 June, 2004

Conference “Cardiac Cellular Electrophysiology: From funny currents to the current Physiome”, Montpellier, 3-5 September, 2004

Workshop “Russian science and the physiome project”, Ekaterinburg, Russia, 24-25 September, 2004

Workshop “Computational Modelling in Biology”, Oxford, UK, 1-3 October, 2004

Netherlands Conference on Bioinformatics, Groningen, Netherlands, 7-8 October, 2004

Department of Physiology, Oxford University, UK, 20 October, 2004

Colloquium, Faculty of Biology, Utrecht University, Netherlands, 31 March, 2005

International Conference on Theoretical Physics, 'TD70', Moscow, Russia, 11-16 April, 2005

Colloquium, Biocomplexity Institute, Indiana University, Bloomington, USA, 4 May, 2005

Heart Rhythm 2005 Scientific Sessions, New Orleans, USA, 4-7 May, 2005

Conference “Cardiovascular Physics - Model Based Data Analysis of Heart Rhythm”, Physikzentrum Bad Honnef, Germany, 9-11 May, 2005

Workshop on “Oscillations and (in-)stability: Control near and far from equilibrium in Biology”, the Lorentz Center, Leiden, the Netherlands, 23 May- 3 June 2005 (2 lectures)

The summer school “Control Theory with Modeling Applications to Physiology and Medicine”, Schloss Seggau, Austria, 24 July- 5 August, 2005 (5 lectures)

Integrated Biology Workshop, Oxford, UK, 29-30 September 2005

Département de Génétique et Procréation, University of Grenoble ,France, 18 October, 2005

Workshop 'Applications of Methods of Stochastic Systems and Statistical Physics in Biology', University of Notre Dame, USA, 28-30 October 2005

Weill Medical College, Cornell University, New York City, USA, 4 November 2005

Workshop 'Dynamics of Patterns', Lorentz Center, Leiden, the Netherlands, 7- 11 November 2005

1st European Cardiac Simulation Group Meeting, Manchester, UK, 11-12 November 2005

42nd Dutch Mathematical Congress, Delft, the Netherlands, 27-28 March, 2006

The arctic summer school “Mathematical Models of the Heart”, Svalbard, Norway, 5-12 May, 2006 (3 lectures).

Applied Mathematics Colloquium Colloquium, Massachusetts Institute of Technology, Boston, USA, 15 May, 2006

Heart Rhythm 2006 Scientific Sessions, Boston, USA, 17-20 May, 2006

Congress in Cardiac Electrophysiology “Cardiostim”, Nice, France, 13-17 June, 2006

Centre for Systems Biology at Edinburgh, Edinburgh, UK, 13 July, 2006

A workshop “Cardiac Electrophysiology and Arrhythmia”, Columbus, OH, USA, September 25-29, 2006

Fifth International Workshop on Computer Simulation and Experimental Assessment of Electrical Cardiac Function, Lausanne, Switzerland, December 10-12 2006

MAS colloquium, CWI, Amsterdam, January 9, 2007

BIOSIM07, Manchester, UK, 16 March, 2007

A workshop on Non-linear Dynamics in Excitable Media, Gent, Belgium, 15-18 April, 2007

Weill Medical College of Cornell University, New York, USA, 20 April, 2007

Biomathematics Seminar, Courant Institute of Mathematical Sciences, New York, USA, 24 April, 2007

European Heart Modelling Workshop, Oxford, UK, 16-17 May, 2007

A workshop “Nonlinear Collective Behaviour”, Lorentz Center, Leiden, the Netherlands, 11-15 June, 2007

Institute of Biomedical Engineering, Karlsruhe, Germany, 26 June, 2007

FEBS 2007 Congress Satellite Workshop “Biosimulations for Pharma Industry”, Vienna, Austria, 9-10 July, 2007

Intergrative Biology workshop, Oxford, UK, 27-28 September, 2007

Conference “Frontiers in Application of Systems Modeling and Simulation”, Long Beach, CA, USA, 5-6 October, 2007

The Institut des Hautes tudes Scientifiques in Bures-sur-Yvette (IHES), France, 19 December, 2007

NHLBI-VCU Workshop on Computational Cardiovascular and Cardiopulmonary Dynamics, Richmond, VA, USA, February 23 - March 2, 2008

A Bioengineering research seminar, Auckland, New Zealand, 11 March, 2008

Seminar, AgResearch Ltd., Ruakura Research Centre, Hamilton, New Zealand, 13 March, 2008.

Workshop on Multi-scale Modelling of the Heart, Auckland, New Zealand, 27th-29th March, 2008

Biomathematics Seminar, Courant Institute of Mathematical Sciences, New York, USA, 28 April, 2008

Weill Medical College of Cornell University, New York, USA, 29 April, 2008

Seminaire Modelisation, simulation et imagerie du myocarde, Paris, France, 18 June 2008.

Seminar series 'Anatomical modelling of the heart and its applications', Providence University, Taiwan, 18-22 July, 2008 (3 lectures).

Seminar, National Center of Theoretical Science, Tsing-Hua, Taiwan, 23-24 July, 2008 (2 lectures).

Workshop 'Frontiers in Computational Electrophysiology', Maastricht, Netherlands, 17 September 2008.

Seminar, Warwick Systems Biology Centre, Warwick, UK, 11 November 2008.

Colloquium, Institute of Theoretical Physics, Technical University of Berlin, Berlin, Germany, 20 November 2008.

"Complex nonlinear processes in chemistry and biology", Berlin, Germany, 22 November 2008.

Computational Life Sciences meeting, Hague, Netherlands, 27 November 2008.

IMS Cardiomaths Seminar, Imperial College London, UK, 2 March 2009 (2 lectures).

Mechanics & Computation Seminar, Stanford University, USA, 12 March 2009.

Seminar at the Institute of Immunology and Physiology, Ural Division of the Russian Academy of Sciences, Russia, 17 April, 2009

Biomathematics Seminar, Courant Institute of Mathematical Sciences, New York, USA, 5 May, 2009

Heart Rhythm 2009 Scientific Sessions, Boston, USA, 13-17 May, 2009

Europace 2009, Berlin, Germany, 21 - 24 June, 2009

Cardiac Physiome summer programme at the Isaac Newton Institute, Cambridge, UK, 6,7 July 2009 (2 lectures)

Workshop Multi-scale and Multi-physics Mathematical Modelling Applied to the Heart, Cambridge, UK, 20-24 July 2009

"Cardiac Dynamics", ESF Science Meeting, Smolenice, Slovakia, 24-27 August, 2009

NHLBI-VCU Workshop Modeling the Heart in 3D, Richmond, VA, USA, October 15 - October 17, 2009

'Bi-domain' workshop, Graz, Austria, 29-31 October, 2009

Workshop "Software and Device System for Non-Invasive Electrophysiological Study of Heart", Nuremberg, Germany, 11-12 December, 2009

“Interdisciplinary Workshop on Pattern Formation in Morphogenesis”, (Invited Mathematician), IHES, Bures-sur-Yvette. France, 11-15 January 2010

“Inauguration Symposium of the Cardiovascular Physics Group”, Berlin, Germany, 14 January, 2010

Colloquium in the Departments of Mathematics and Theoretical Physics in Durham, UK, 19 January, 2010

Gordon Research Conference “Oscillations & Dynamic Instabilities In Chemical Systems”, Il Ciocco Hotel and Resort in Lucca (Barga) Italy, 4-9 July 2010

Colloquium, Department of Physics, Indian Institute of Science, Bangalore, India 17 September 2010.

Colloquium, of the Institute of Mathematical Sciences, Chennai, India, 29 September 2010.

Colloquium, Department of Physics, Goa University, Goa, India, 8 October 2010.

Seminar of the School of Physical Sciences of the Jawaharlal Nehru University, New Delhi, India, 19 October 2010.

Workshop “Physiology and Biophysics of myocardium”, Ekaterniburg, Russia, 27-29 April, 2011.

Seminar of the New York University School of Medicine, New York, USA, 10 May, 2011.

Institute of Biomedical Engineering, Karlsruhe, Germany, 20 May, 2011.

Workshop on Interdisciplinary Biomedical Research, London, UK, July 18th - 19th, 2011.

9th International Conference of Numerical Analysis and Applied Mathematics, Halkidiki, Greece, 19-25 September 2011.

Seminar at the Institute of Henri Poincare, Paris, 17 January 2012

International Conference on Mathematical and Theoretical Biology, Pune, India, 23-27 January 2012

76th Annual Meeting of the DPG, Berlin, 25 - 30 March 2012

Colloquium, Max Planck Institute for Dynamics and Self-Organization, Goettingen, Germany, 11 April 2012

## **BIBLIOGRAPHY:**

1. A.K.Grenadier, A.V.Panfilov, Spiral waves in myocard (theoretical analytics); Biofizica v.26, p.1107-1108, (1981)

2. A.V.Panfilov, A.M.Pertsov, L.I.Churicova, Increase of heterogeneities at the interface of decrement conduction in Hodgkin-Huxley model; *Boifizica* v.26 (1981)p.1082-1085,(1981)
3. A.M.Pertsov, R.N.Khramov, A.V.Panfilov, Sharp increase in refractory period induced by excitation suppression in Fitz-Hugh-Nagumo model. New mechanism of antiarrhythmic drug action; *Biofizica* v.26, p.1077-1081,(1981)
4. A.M.Pertsov, A.V.Panfilov, Spiral waves in active media. Reverberator in the Fitz-Hugh-Nagumo model; in book "Auto-waves processes in systems with diffusion". Gorky, IPF, p.77-84, (1981)
5. Yu.A.Kuznetsov, A.V.Panfilov, Stochastic waves in the Fitz-Hugh-Nagumo model; Preprint NCBI Pushchino, 9p, (1981)
6. A.V.Panfilov, A.M.Pertsov, Mechanism of spiral waves initiation in active media connected with critical curvature phenomenon; *Biofizica* v.27, p. 886-889,(1982)
7. A.V.Panfilov, O.A.Mornev, M.A.Tsiganov, V.I.Krinsky, Analytical estimation of reverberator period in an arbitrary active medium; *Biofizica* v.27, p.1064-1068,(1982)
8. A.M.Pertsov, A.V.Panfilov, F.U.Medvedeva, Instabilities of auto-waves in excitable media associated with critical curvature phenomenon; *Biofizica* v.28, p.100-102, (1983)
9. A.M.Pertsov, E.A.Ermakova, A.V.Panfilov, Spiral waves rotating around a hole and reverberators in the Fitz-Hugh-Nagumo model; Preprint OIChPh Chernogolovka, 13p, (1983)
10. K.I.Agladze, N.A.Gorelova, G.G.Zurabishvily, A.S.Mikhailov, A.V.Panfilov, M.A.Tsiganov The autowaves control; NCBI Pushchino,48p, (1983)
11. A.N.Rudenko, A.V.Panfilov, Drift and interaction of vortices in two-dimensional heterogeneous active medium; *Studia Biophysica*, v.98, p.183-188, (1983)
12. A.V.Panfilov, A.M.Pertsov, Vortex ring in three-dimensional active medium in described by reaction-diffusion equations; *Doklady Akademii NAUK SSSR* v.274, p.1500-1503, (1984)
13. A.V.Panfilov, A.N.Rudenko, A.M.Pertsov, Twisted scroll waves in three-dimensional active media; *Doklady Akademii Nauk SSSR* v.279 p.1000-1002, (1984)
14. R.N.Khramov, A.N.Rudenko, A.V.Panfilov, V.I.Krinsky, Drift of vortices in heterogeneous active medium (simplified analysis); *Studia Biophysica*, v.102, p.69-74, (1984)
15. A.M.Pertsov, E.A.Ermakova, A.V.Panfilov, Rotating spiral waves in a modified Fitz-Hugh-Nagumo model; *Physica* v.14D, p.117-124, (1984)
16. A.B.Medvinsky, A.V.Panfilov, A.M.Pertsov, Properties of rotating waves in three dimensions. Scroll rings in myocard; in book "Self-Organization. Autowaves and Structures Far from Equilibrium. Ed. V.I.Krinsky, Springer-Verlag, Berlin,Heidelberg, New York, Tokyo, p.195-199, (1984)

17. A.V.Panfilov, A.N.Rudenko, A.M.Pertsov, Twisted scroll waves in three- dimensional active media; in book "Self-Organization. Autowaves and Structures Far from Equilibrium. Ed. V.I.Krinsky, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, p.103- 105, (1984)
18. V.I.Krinsky, A.S.Mikhailov, A.V.Panfilov, E.A.Ermakova, M.A.Tsiganov , Spiral waves in active media; *Radiofizica* v.27, p.1116-1129, (1984)
19. A.V.Panfilov, A.N.Rudenko, A.T.Winfree, Twisted scroll rings in three- dimensional active media; *Biofizica* v.30, p.464- 466, (1985)
20. A.S.Mikhailov, A.V.Panfilov, A.N.Rudenko, Twisted scroll waves in active three- dimensional media; *Physics Letters* v.109A, p.246-250, (1985)
21. A.V.Panfilov, A.T.Winfree, Dynamical simulations of twisted scroll rings in three- dimensional excitable media; *Physica* v.17D, p.323-330, (1985)
22. E.A.Ermakova, V.I.Krinsky, A.V.Panfilov, A.M.Pertsov, Interaction between spiral and flat periodic autowaves in an active medium; *Biofizica* v.31, p.318-323, (1986)
23. A.V.Panfilov, A.N.Rudenko, V.I.Krinsky, Scroll rings in three- dimensional active medium with two component diffusion; *Biofizica* v.31, p.850-854, (1986)
24. K.B.Aslanidi, A.V.Panfilov, The Boyle-Conway model including the effect of an electrogenic pump for nonexcitable cells; *Mathematical Biosciences* v.79, p.45-54, (1986)
25. A.V.Panfilov, A.N.Rudenko, Three-dimensional vortices in active medium; in book "Sinergetics". Shtinitza, Kishinev, p.21-22, (1986)
26. K.B.Aslanidi, A.V.Panfilov, Metabolic regulation of ionosmotic homeostasis of elecrounexcitable cells; *Biofizica* v.31, p.814-819, (1986)
27. Book: V.I.Krinsky, A.B.Medvinsky, A.V.Panfilov, Evolution of Autowave Vortices; Moscow Znanie, (1986)
28. G.R.Ivanitsky, A.V.Panfilov, M.A.Tsiganov, Pulsation mechanism of spatial distribution of population numbers of dividing bio objects; *Biofizica* v.32, p.354-356, (1987)
29. A.V.Panfilov, A.N.Rudenko, Two regimes of the scroll ring drift in the three-dimensional active media; *Physica* v.28D, p.215-218, (1987)
30. A.V.Panfilov, M.A.Tsiganov, Wave propagation in the reaction- diffusion equations in both component diffusion; *Deponent VINITI 8027-B87*, 24p, (1987)
31. A.V.Panfilov, M.A.Tsiganov, Dependence of front velocity on its curvature in reaction-diffusion equations with both component diffusion; in book: "Collective dynamics of excitation and pattern formation in biological tissues". IPF, Gorky, p.178-184, (1988)
32. A.V.Panfilov, M.A.Tsiganov, L.R.Gainulina, Doppler shift in active media; in book: "Collective dynamics of excitation and pattern formation in biological tissues". IPF, Gorky, p.185-189, (1988)

33. K.I.Agladze, A.V.Panfilov, A.N.Rudenko, Nonstationary rotation of spiral waves: three-dimensional effect; *Physica* v.29D, p.409-415, (1988)
34. A.V.Panfilov, B.N.Vasiev, Studying of the reverberator arising in nonhomogeneous active medium; Preprint, Pushchino, NCBI, 16p, (1989)
35. B.N.Vasiev, A.V.Panfilov, Reverberator in coupled fibers model; Preprint, Pushchino, NCBI, 23p, (1989)
36. B.N.Vasiev, A.V.Panfilov, K.I.Agladze, Drift of the reverberator in thin layer of B-Z reaction with temperature gradient; in book "Proceedings of the conference of young scientists of the NCBI". Pushchino, NCBI, p.26-30, (1989)
37. G.R.Ivanitsky, V.I.Krinsky, A.V.Panfilov, M.A.Tsiganov, Two regimes of the drift of reverberators in nonhomogeneous active media; *Biofizica* v.34, p.297-299, (1989)
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