

PROGRAM

of INTERNATIONAL CONFERENCE

CRITERIA OF SELF-ORGANIZATION
IN PHYSICAL, CHEMICAL AND BIOLOGICAL SYSTEMS

Moscow—Suzdal, June 12–18, 1995

June 12, Monday

- 10.00 - 13.00 Excursion to Suzdal
13.00 - 15.00 Lunch
15.00 - 15.30 Opening ceremony
Co-Chairs: Yury M. Romanovsky and Dmitry S. Chernavsky
15.30 - 16.30 Yury L. Klimontovich, Moscow State University, Moscow, Russia
"Criteria of Self-Organization"
16.30 - 17.30 Werner Ebeling, Humboldt University, Berlin, Germany
★ "Dynamic Entropies and Predictability of Nonlinear Processes"
17.40 - 18.10 Galina Yu. Ryzhichenko, Moscow State University, Moscow, Russia
"Nonlinear Scientific Thinking and Ecological Perception"
18.10 - 19.00 Yuly A. Danilov, Kurchatov Institute of Atomic Energy, Moscow, Russia
"On the Basic Models of Nonlinear Physics"
19.00 Reception

June 13, Tuesday

Morning Session

Co-Chairs: Werner Ebeling and Eugeny I. Volkov

- 9.00 - 9.45 Vladimir E. Zakharov, Institute of Theoretical Physics, Moscow, Russia
"Models of Competition in Continuous Media"
9.45 - 10.15 Lutz Shimansky-Geier, Humboldt University, Berlin, Germany
"Structure formation by Active Brownian Particles"
10.15 - 11.45 Semen I. Kuchanov, Institute of Applied Mathematics, Moscow, Russia
"Dynamics of Cooperative Phenomena in One-Dimensional Systems"
11.45 - 12.00 Coffee-break
12.00 - 12.30 Yury M. Romanovsky, Moscow State University, Moscow, Russia
"Cluster Dynamics of Functionally Active Proteins"
12.30 - 13.00 Len M. Pismen, Technion, Haifa, Israel
"Kink Arrays and Solitary Structures Sustained by Diffusional, Global and
Diffractional Interactions"
13.00 - 15.00 Lunch

Evening Session

Co-Chair: Yury L. Klimontovich and Lutz Schumansky-Geier

- 15.00 - 15.30 Vladimir A. Koptsik, Moscow State University, Moscow, Russia
"Order-disorder, Sinergetical Phase Transitions and Generalized Symmetry"
15.30 - 16.00 Eugeny I. Volkov, Lebedev Physical Institute, Moscow, Russia
"Temporal Patterns in Small Networks of Coupled Relaxational Oscillators"
16.00 - 16.30 Vyacheslav V. Alexeev, Moscow State University, Moscow, Russia
"Processes of Self-Organization in Economy and Ecology"
16.30 - 17.00 Reinhard Mahnke, Rostock University, Rostock, Germany
"Nucleation Under Different Boundary Conditions"
17.00 - 17.20 Coffee-break

★ A. A. A. A.

- 17.20 - 17.50 *Schmelzer Juern*, Rostock University, Rostock, Germany
"Structure Formation in First-Order Phase Transformation Processes"
- 17.50 - 18.20 *Eugeny P. Ageev*, Moscow State University, Moscow, Russia
"Autooscillatory Mass Transmission in Polymeric Systems Experiment, Mechanism and Mathematical Model"
- 18.20 - 19.00 *Schebesch Ilze*, Theoretical Physics Institute, Berlin, Germany
"Dynamics of Spiral Waves in Photosensitive BZ Media"
- 19.00 - 20.00 Dinner
- 20.00 - 22.00 Round Table: "Sinergetics Not Only in Natural Science"
Co-Chairs: Dmitry S. Chernavsky, Mark Ya. Kazhdan and Vladimir I. Maevsky
Nikita N. Morseev "Universal evolutionarism"
Victor B. Kireev, Moscow Institute of Physics and Technology
"Sustainable Development as a Physical Concept"

June 14, Wednesday

Morning Session

- Co-Chairs: Kyoung Lee and George T. Guria
- 9.00 - 9.30 *Konstantin I. Agladze*, Institute of Theoretical & Experimental Biophysics, Puschino, Russia
"Computing Chemical Medium"
- 9.30 - 10.00 *Theo Plesser*, Max-Planck Institute of Molecular Physiology, Dortmund, Germany
"Bifurcation Schemes of Spiral Tip Motion in Excitable Media"
- 10.00 - 10.30 *Tomohiko Yanaguchi*, National Institute of Materials & Chemical Research, Tsukuba, Japan
"Mesoporous Media For the BZ Reaction"
- 10.30 - 10.45 Coffee-break
- 10.45 - 11.15 *Albert N. Zaikin*, Institute of Theoretical & Experimental Biophysics, Puschino, Russia
"The Formation, Propagation and Interaction of Excitons (Autowaves - Quasi-Particles) in an Active Medium"
- 11.15 - 11.45 *Kyoung Lee*, Princeton University, Princeton, USA
"Experimental Observation and Analysis of Various Patterns in a System of Agregating Dicytostelium"
- 11.45 - 12.15 *Arkady D. Margolin*, Semenov Institute of Chemical Physics, Moscow, Russia
"Fractal Waves of Polymer's Oxidizing Electrocarboxylation"
- 12.15 - 12.45 *Vasily Davydov*, Moscow Inst. for Radioelectronics & Automation, Russia
"Pattern Formation in Moving Excitable Media"
- 13.00 - 15.00 Lunch

Evening Session

- Co-Chairs: Simon E. Shnol and Arkady D. Margolin
Session Dedicated to David A. Frank-Kamenetsky Memory
- 15.00 - 15.20 *Arkady D. Margolin*, Semenov Institute of Chemical Physics, Moscow, Russia
"Scientific Biography of David A. Frank-Kamenetsky"
- 15.20 - 16.00 *Alexandr S. Noskov*, Institute of Catalysis, Novosibirsk, Russia
"Development of Frank-Kamenetsky Ideas in Creating Catalytic Processes Theory"

1916 Kamenetsky
1937 Frank-Kamenetsky
1938-39 Kamenetsky
1938-39 Kamenetsky

First paper 1937
Article 1945
Second paper 1950
1972

D. Margolin
on the occasion of his 60th birthday
1997

- 16 00 - 16 45 *George T. Guria*, National Scientific Center for Hematology, Moscow, Russia
"Ideas of David A. Frank-Kamenetsky and Progress in Self-Organization Theory"
- 16 45 - 17 00 Coffee-break
- 17 00 - 17 30 *Eduard N. Rumanov*, Inst. Structural Macrokinetics, Chernogolovka, Russia
"The reaction Waves and Their Diffusional Instability"
- 17 30 - 18 30 *Simon E. Shnol*, Institute of Theoretical & Experimental Biophysics, Puschino, Russia
"Ideas of Oscillations and Waves in Active Media. History of development"
- 18 30 - 19 00 Discussion
- 19 00 - 20 00 Dinner
- 20 00 - 22 00 Round Table on Educational Problems
Co-Chairs: Galina Yu. Riznichenko, Victor B. Kireev and Alexei I. Lobanov
Dmitrii I. Trubeckov
Saratov University, Saratov, Russia
"Speciality "Nonlinear Physical Dynamical Systems" in College of Applied Science in the Saratov University"
Vladimir D. Ivanov
Moscow Inst. of Physics & Technology, Dolgoprudny, Russia
"To be determined"

June 15, Thursday

Morning Session

Co-Chairs: Vadim S. Anishenko and Jerzy Gorecki

- 9 00 - 10 00 *Juergen Kurths*, University of Potsdam, Germany
"Analysis and Modeling of Complex Bimanual Motion"
- 10 00 - 10 30 *Vadim S. Anishenko*, Saratov University, Saratov, Russia
"On the Destruction of Three Dimensional tori"
- 10 30 - 10 45 Coffee-break
- 10 45 - 11 15 *Jerzy Gorecki*, Institute of Physical Chemistry, Warsaw, Poland
"Molecular Dynamics Simulations of Self-Organization Phenomena"
- 11 15 - 11 45 *George G. Malinetsky*, Institute of Applied Mathematics, Moscow, Russia
"New Aspects of Self-Organized Criticality"
- 11 45 - 12 15 *George G. Elenin*, Moscow State University, Moscow, Russia
"Mathematical Modeling of Self-Organization Phenomena in Heterogenic Catalytic Reaction NO+ CO At the Plane (100) of Pt Monocrystal"
- 12 15 - 12 45 *Moshe Steintuch*, Technion, Haifa, Israel
"Spatio-Temporal Patterns in Catalytic High Pressure Reactions"

13 00 - 15 00 Lunch

Evening session

Co-Chairs: Juergen Kurths and Konstantin I. Agladze

- 15 00 - 15 30 *Alexandr P. Levich*, Moscow State University, Moscow, Russia
"Self-Organization Criteria and Governing Parameters in Ecology of Community"
- 15 30 - 16 00 *Galina D. Kuznetsova*, Inst. of Neuroscience, Moscow, Russia
"Modeling of peculiarities of Regimes of Epileptiform Activity in Brain"

23-27

June 16, Friday
Morning Session
Co-Chairs: Juergen Kurths and Konstantin I. Agladze
15 00 - 15 30 *Alexandr P. Levich*, Moscow State University, Moscow, Russia
"Self-Organization Criteria and Governing Parameters in Ecology of Community"

- 16 00 - 16 30 *Andrei A. Polezhaev*, Lebedev Physical Institute, Moscow, Russia
"Catastrophic Extinction, Noise-Stabilized Turbulence and
Unpredictability of Competition in a Modified Volterra-Lotka Model"
- 16 30 - 17 00 *Alexandr Medvinsky*, Institute of Theoretical & Experimental Biology,
Pushino, Russia
"A Model of Spontaneous Formation of Non-Turing Aperiodic Structures"
- 17 00 - 17 30 Coffee-break
- 17 30 - 18 00 *Leonid V. Yakovenko*, Moscow State University, Moscow, Russia
"Cellular Automata Stimulation of Collective Phenomena in an Ensemble
of Ion Channels"
- 18 00 - 18 30 *Vsevolod V. Shakin*, Computer Centre of Russian Academy of Science,
Moscow, Russia
"Biological Systems under Extreme Conditions: the Self-Organization Problem
in Nonautonomous Systems"
- 18 30 - 19 00 *Alexei I. Lobanov*, Moscow Institute of Physics & Technology, Dolgoprudny,
Russia
"Application of Numerical Methods to Twice Excitable Active Media
Modeling"
- 19 00 - 20 00 Dinner
- 20 00 - 20 30 Computer technologies
- 20 30 - 21 00 (Firms - to be determined)

June 16, Friday

Morning Session

Co-Chairs: Tomohiko Yamaguchi and Albert N. Zaikin

- 9 00 - 9 30 *Aguda Baltazar*, Laurentian University, Ontario, Canada
"Switching and Clustering Behaviour in Coupled Bistable Enzyme Systems"
- 9 30 - 10 00 *Vladislav A. Vasiliev*, Sklifosofsky Medical Institute, Moscow, Russia
"Variability of Parameters of Large Systems as a Measure of Their Functional
Stability"
- 10 00 - 10 30 *Andrzej Kawczynski*, Institute of Physical Chemistry, Warsaw, Poland
"Periodic Perturbation of Chaotic Dynamics Induced Order"
- 10 30 - 10 45 Coffee - break
- 10 45 - 11 15 *Vladimir G. Yafno*, Institute of Applied Physics, Nizhny Novgorod, Russia
"Spatio-temporal Dynamic Structure in Neuron-like Systems"
- 11 15 - 11 45 *Sergey I. Aksjonov*, Moscow State University, Moscow, Russia
"Peculiarities of Stability of Biological Systems"
- 11 45 - 12 15 *Ludmila A. Uvarova*, University of Tver, Russia
"About Self-Stabilization of Systems With Nonlinear Properties"
- 12 15 - 13 00 *Konstantin Birukov*, Cardio Center, Moscow, Russia
"Periodic Mechanical Stimulation and Phenotype of Smooth Muscle Cells of
Vessels"
- 13 00 - 15 00 Lunch

Evening session

- 15 00 - 18 00 General Discussion
Closing ceremony

June 17, Saturday

- 10 00 - 14 00 Excursion to Vladimir
14 00 - 15 00 Lunch
15 00 Departure of participants

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Hot spot, S. G. G. G.
S. G. G. G. D. G. G. G.

Changes in the Program are possible. Follow Announcements
of Organizing Committee