



PROGRAM

World Congress

"Systems Theory, Algebraic Biology, Artificial Intelligence: Mathematical Foundations and Applications"

June 26-30, 2023

Moscow 2023

World Congress Program
**"Systems Theory, Algebraic Biology, Artificial
intelligence: mathematical foundations and applications"**

June 26, 2023, Moscow, Russian Academy of Sciences, Presidential Hall (Leninsky pr., 32 a)

9-00 registration of participants, buffet service

10-00 **Opening of the congress** (simultaneous translation Russian-Chinese-English)

President of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences Krasnikov G.Ya.

From the National Academy of Sciences of Belarus Deputy Chairman of the Presidium of the National Academy of Sciences of Belarus Academician of the Russian Academy of Sciences Corresponding Member of the National Academy of Sciences of Belarus Kazakevich P.P.

From the Chinese Academy of Sciences, Director of the Chinese-Russian Mathematical Center, Academician of the Chinese Academy of Sciences Zhang Jiping

From Indian National Academy of Sciences Director of Pentagon Research Center Dr. E. G. Rajan

President of the National Academy of Sciences of the Republic of Kazakhstan under the President of the Republic of Kazakhstan L. Eraliyeva

From the Republic of Uzbekistan and the Academy of Sciences of Uzbekistan First Deputy Speaker of the Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan Academician of the Academy of Sciences of Uzbekistan Saidov A.Kh.

President of the National Academy of Sciences of Tajikistan F. Rahimi

10-30 **Greetings to the Congress**

Department of Nanotechnologies and Information Technologies of the Russian Academy of Sciences Vice-President of the Russian Academy of Sciences Academician of the Russian Academy of Sciences Panchenko V.Ya.

Department of Energy, Mechanical Engineering, Mechanics and Control Processes of the Russian Academy of Sciences Academician of the Russian Academy of Sciences Kalyaev I.A.

Department of Mathematical Sciences RAS

Department of Physiological Sciences RAS Academician Tkachuk V.A.

Department of Medical Sciences RAS

Department of Social Sciences of the Russian Academy of Sciences Academician of the Russian Academy of Sciences Khabrieva T.Ya.

Department of Agricultural Sciences of the Russian Academy of Sciences Academician of the Russian Academy of Sciences Lobachevsky Ya.P.

Scientific Council of the Russian Academy of Sciences for Chemical Physics, Vice-President of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences Aldoshin S.M.

Russian Physiological Society. I.P. Pavlov RAS Academician RAS Ostrovskii M.A.

Research Institute of Normal Physiology P.K. Anokhin RAS Corresponding Member of RAS Pertsov S.S.

International Research Association of Modern Education and Computer Science, China (RAMECS), Dr. Z.B. Hu

Moscow State Conservatory named after P.I. Tchaikovsky, rector Sokolov A.S.

Plenary reports

11-00 Lektorsky V.A., Academician of the Russian Academy of Sciences, "Systems, theories of consciousness, philosophy of artificial intelligence, the role of formalization and mathematical modeling"

11-30 Sudakov S.K., corresponding member. Russian Academy of Sciences, "Functional systems, complex structure of the action result acceptor"

12-00 Chernoiivanov V.I., Academician of the Russian Academy of Sciences, "Biomashsystems, the role of a systematic approach in the agro-industrial complex and other industries"

12-30 Tolokonnikov G.K., Ph.D., "Categorical systems"

13-00 Petukhov S.V., Doctor of Physics and Mathematics, "Matrix Genetics and Algebraic Biology"

13-30 Goncharov S.S., Academician of the Russian Academy of Sciences, "Problem approach in mathematics and applications to artificial intelligence"

14-00 Vityaev E.E., Doctor of Physical and Mathematical Sciences, "Non-reductionist theory of consciousness"

From 14-30 to 15-00 break, coffee break

15-00 Anokhin K.V., Academician of the Russian Academy of Sciences, "Consciousness in neural hypernetworks"

15-30 Ushakov D.V., Academician of the Russian Academy of Sciences, "Architecture of the human cognitive system and artificial intelligence"

16-00 Wenbin Hu, Zhengbing Hu «The Research Progress and Application of Signed Social Network» (Wuhan University, Wuhan, China)

16-20 Xiaojun Yang «A New Hot Problem in Analytic Number Theory» (China University of Mining and Technology, Xuzhou, China)

16-40 Xiaojing Ma «A Gradients Scrutinizer to Thwart Split-Learning Hijacking Attacks» (Huazhong University of Science and Technology, Wuhan, China)

17-00 Semenov A.L., Academician of the Russian Academy of Sciences, "Education of the extended personality of the age of artificial intelligence"

17-30 Dr. E. G. Rajan "On the Notion of Constructive Sets and Function Spaces in the Framework of Markov's Mathematico-Logic" (India)

18-00 Max Rempel, Ph.D, "Parallelism of Water Layers and DNA Bases: Unfolding the Crystallization Origin of Layered Water Structure and its Implication on Chromatin Dynamics" (San Diego, USA)

18-30 Mazurov M.E., Doctor of Physics and Mathematics, "On the physics of consciousness and its formation"

19-00 Koblyakov A.A., "Logic of Creativity - new transdimensional relations"

19-20 Concert of genetic music, broadcast from the Moscow State Tchaikovsky Conservatory

20-00 Completion of the program on June 26, the first day of the Congress.

Program
***World Congress "Systems Theory, Algebraic Biology, Artificial
intelligence: mathematical foundations and applications"***

June 27, 2023

Moscow, Presidium of the Russian Academy of Sciences,
Green Hall (Leninsky pr., 32 a)
9-00 registration of participants, buffet service

10-00 Opening day of the Congress of RAS departments: Department of Nanotechnology and Information Technology RAS, Department of Mathematical Sciences RAS, Department of Energy, Mechanical Engineering, Mechanics and Control Processes RAS

Panchenko V.Ya., Academician of the Russian Academy of Sciences, Kolchanov N.A., Academician of the Russian Academy of Sciences, Department of Nanotechnologies and Information Technologies of the Russian Academy of Sciences;

Khomich V.Yu., Academician of the Russian Academy of Sciences, Department of Energy, Mechanical Engineering, Mechanics and Control Processes of the Russian Academy of Sciences;

Semenov A.L., Academician of the Russian Academy of Sciences, Department of Mathematical Sciences of the Russian Academy of Sciences

Plenary reports

10-20 Semenov A.L., Academician of the Russian Academy of Sciences, "Issues of definability"

10-50 Petukhov S.V., Doctor of Physics and Mathematics, Genetic biomechanics and universal rules of genomic DNA stochastics

11-20 Garbuk S.V., National Research University Higher School of Economics, "Regulatory and technical support for the use of artificial intelligence methods in data processing in measuring instruments"

11-50 Prof. Dr. Michael Patrick Coyle (Brody Medical School of ECU/ Avatar MedVision US LLC, NC, USA) "Three-Dimensional Logical Image Processing System"

12-20 M. V. Ramanujam (Founder and CEO, Propinquity Genomics and Sciences, Bangalore, India) "Fractal Genome-Fractal Cancer-Science to Real world Clinical implications: Genome Analytics to Rescue Ancient Indian Prowess in Mathematics and Computer Science"

12-50 Gavryushin S.S., Doctor of Technical Sciences, "Hardware and software support for high-tech medical surgical operations."

13-20 Tselishchev V.V., Ph.D., "Algorithmic version of mentalism: Penrose's diagonal argument"

13-50 Schepin E.V., corresponding member. RAS, "Application of topology to optical recognition"

From 14-20 to 15-00 break, coffee break

Presidential Hall (Leninsky pr., 32 a)

15-00 Svirin V.I. "Clifford Algebras in Genetic Biomechanics"

15-30 Dr. Deepika Naimpally, Dr. Pradeepthi K.V., Dr. S. Venkata Raman (University of Hyderabad, CR Rao Research Centre) "Application Identification from Encrypted Traffic using Entropy Estimation and Machine Learning"

16-00 Introductory part of the evening in memory of the Nobel laureate Academician of the Russian Academy of Sciences Zhores Ivanovich Alferov, Lyubimov A.P., Doctor of Law, "Zhores Alferov - a legend of world science"

16-30 Budhagavi Rajarao Badrinath, "Applied Markov Models of Social Engineering Processes for Fundamental Information Rights Issue" (India)

17-00 Amosov G.G., Doctor of Physical and Mathematical Sciences, Komissarenko A.V. "The Possibility of Algebraic Operations on a Musical Text: Rhythm, Intonation, Timbre".

17-30 Galtsov D.V., Doctor of Physical and Mathematical Sciences, "On the role of the subject in music and physics"

18-00 Kaputkina N.E., Doctor of Physics and Mathematics, Altaisky M.V., Doctor of Physics and Mathematics, "Thermodynamic limitations of quantum computing systems"

18-30 Boulet J-Yu "Numbering of twenty proteinogenic amino acids"

19-00 Puchkov M.M. "New Music Media in the Age of Post-Digital Art"

19-30 Soshinsky I.S. "Algorithmization of the principle of "deception of expectation" and its system-forming factor in musical creativity"

20-00 Completion of the program on June 27 of the second day of the Congress.

Program
***World Congress "Systems Theory, Algebraic Biology, Artificial
intelligence: mathematical foundations and applications"***

June 28, 2023, Moscow, Russian Academy of Sciences,
Presidential Hall (Leninsky pr., 32 a)

9-00 registration of participants, buffet service

10-00 ***Opening*** day of the Congress of the Department of Physiological Sciences and Medical Sciences of the Russian Academy of Sciences, Russian Physiological Society. I.P. Pavlov, Scientific Council of the Russian Academy of Sciences on Chemical Physics (headed by Academician of the Russian Academy of Sciences Tkachuk V.A., Academician of the Russian Academy of Sciences Starodubov V.I., Academician of the Russian Academy of Sciences Ostrovsky M.A., Vice President of the Russian Academy of Sciences Academician of the Russian Academy of Sciences Aldoshin S.M. , Corresponding Member of RAS Pertsov S.S., Corresponding Member of RAS Sudakov S.K.)

Plenary reports

10-20 Ostrovsky M.A., Academician of the Russian Academy of Sciences, "The mechanism of generation, transmission and processing of the visual (photoreceptor) signal in the retina"

10-50 Riznichenko G.Yu., Doctor of Physical and Mathematical Sciences, Rubin A.B., Academician of the Russian Academy of Sciences, "Modeling of processes in the photosynthetic membrane of higher plants and microalgae"

11-20 Umryukhin A.E., Doctor of Medical Sciences, "Algorithms of human behavior: can artificial strong intelligence be devoid of human limitations"

11.50 Murtazina E.P., PhD, Pertsov S.S. corresponding member RAS, prof. RAS, Doctor of Medical Sciences, "System aspects of the interaction of people and subjects with artificial intelligence"

12.15 Kovaleva A.V. PhD, Kriklenko E.A., Likhomanova E.N. "Cardiorespiratory interactions when a person performs tasks of different levels of complexity"

12.40 Karatygin N.A. PhD, Korobeynikova I.I. Ph.D., Pertsov S.S. corresponding member RAS, prof. Russian Academy of Sciences, Doctor of Medical Sciences, "The influence of rhythmically organized optical stimulation on the spectral-spatial characteristics of the α -range of the human EEG during the performance of a cognitive task"

13.05 Klimenko A.V. Candidate of Medical Sciences, Pertsov S.S. corresponding member RAS, prof. RAS, MD, Yakovenko I.Yu prof. Doctor of Biological Sciences, "The physiological cost of highly effective goal-directed behavior in people with different psychophysiological characteristics on the model of endosurgical training"

13.30 Babanov N.D. PhD, Kubryak O.V. d.b.n. "Features of human sensorimotor activity in the exoskeleton"

13.55 Aristov V.V., Kubryak O.V. Doctor of Biological Sciences, Stepanyan I.V. "Search for new methods of EEG analysis using different-scale ring structures"

From 14-20 to 15-00 break, coffee break

15-00 Gavrilova T.A., Doctor of Technical Sciences, "Visualization of conceptual knowledge within the paradigm of "transparent" or explainable artificial intelligence"

15-30 Smelyansky R.L. corresponding member RAS, Stepanov E.P. "Applying Machine Learning Methods to Manage Network Computing Infrastructure"

16-00 Averkin A.N., Ph.D., "Explainable artificial intelligence, as part of the 3rd generation artificial intelligence"

16-30 Eremeev A.P., Varshavsky P.R. "Methods and approaches to the development of intelligent real-time DSS"

17-00 Rostovtsev V.N., Doctor of Medical Sciences, "Project of the FSD health monitoring system"

17-30 Afanasyeva T.V., Doctor of Technical Sciences, "Fuzzy models in the problem of descriptive and predictive analysis of medical data of patients with chronic diseases"

18-00 Ikhlov B. L., Ph.D., "Destruction of viral RNA using microwaves"

18-40 Rempel M.V., PhD, "Verification of the DNA resonance hypothesis using computational genomics. Approaches to Modeling the Water Shell of DNA" (San Diego, USA)

19-30 Zyryanova N. V., Ph.D., "Structuring of aqueous solutions under the influence of DNA oligomers and the influence of electromagnetic fields on living structures"

20-00 Completion of the program on June 28 of the third day of the Congress.

Program
***World Congress "Systems Theory, Algebraic Biology, Artificial
intelligence: mathematical foundations and applications"***

June 29, 2023

Moscow, Russian Academy of Sciences, Presidential Hall (Leninsky pr., 32 a)

9-00 registration of participants, buffet service

10-00 ***Opening*** day of the Congress of the Department of Social Sciences of the Russian Academy of Sciences and the Department of Agricultural Sciences of the Russian Academy of Sciences (headed by Academician of the Russian Academy of Sciences Khabrieva T.Ya., Academician of the Russian Academy of Sciences Lektorsky V.A., Academician of the Russian Academy of Sciences Lobachevsky Ya.P., Deputy Chairman of the Presidium of the National Academy of Sciences of Belarus, Corresponding Member NAS of Belarus Kazakevich P.P.)

Plenary reports

10-00 Lektorsky V.A., Chairman of the NSMII RAS, Academician of the RAS
Introductory speech

10-05 Khabrieva T.Ya., Academician-Secretary of the Department of Social Sciences of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences, Welcome speech, opening day of the Congress of the Department of Social Sciences of the Russian Academy of Sciences

10-10 Glazyev S.Yu., Academician of the Russian Academy of Sciences
"Strategic planning and artificial intelligence"

10-40 Makarov V.L., Deputy Chairman of the NSMII RAS, Academician of the Russian Academy of Sciences, "Digital platform of the network of information centers as the basis of digital transformation"

11-10 Bakhtizin A.R., Corresponding Member of the Russian Academy of Sciences "Tools of Digital Transformation"

11-40 Petrunin Yu.Yu. Ph.D. "Public administration and artificial intelligence: history and modernity"

12-10 Kudina M.V., Doctor of Economics, Deputy Dean of the Faculty of Public Administration of Moscow State University named after M.V. Lomonosov "Digital technologies in human capital management"

12-40 Alekseev A.Yu., Doctor of Philosophy, coordinator of scientific programs of the NSMII RAS "Main Issues of the Philosophy of Artificial Intelligence"

13-10 Mikhailov I.F., Ph.D. "Fallibilism as the Basis of Rationality: Philosophical Implications for Natural and Artificial Intelligence"

13-40 Tselishchev V.V., Doctor of Philosophy, Scientific Supervisor of the Institute of Philosophy and Law of the Siberian Branch of the Russian Academy of Sciences, "Computability and non-computability in the context of the philosophy of mathematics"

From 14-10 to 14-40 break, coffee break

14-40 Lobachevsky Ya.P., Academician-Secretary of the Department of Agricultural Sciences of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences; Kazakevicha P.P., Deputy Chairman of the National Academy of Sciences of Belarus, corresponding member. NAS of Belarus - Opening speech (presidential hall)

14-50 Lachuga Yu.F., Academician of RAS, Dorokhov A.S. Academician of the Russian Academy of Sciences "Possibilities of modern approaches in artificial intelligence for breakthrough technologies in agricultural production"

15-20 Kazakevich P.P., Academician of the Russian Academy of Sciences (online, Minsk) "Automated sorting of apples by a vision system with an artificial neural network of deep learning"

15-50 Alt V.V., Academician of the Russian Academy of Sciences (online, Novosibirsk) "Information technologies in agriculture"

16-20 Fedorenko V.F., Academician of the Russian Academy of Sciences "Alternative innovative solutions for technical and technological support for the cultivation and increase in the fertility of root-inhabited soil horizons"

16-50 Shogenov Yu.Kh. Academician of the Russian Academy of Sciences "Modeling of running electrical impulses in the conductive system of a higher plant"

17-20 Glinushkin A.P., Academician of the Russian Academy of Sciences "Application of intelligent monitoring and early warning systems in the fight against potato late blight"

17-50 Gabitov I.I., Doctor of Engineering. Sciences (online, Ufa) "Intellectualization of the technical service of machines in the agro-industrial complex"

18-10 Godzhaev Z.A., corresponding member. Russian Academy of Sciences "Development and creation of adaptive, agrophilic running systems of agricultural mobile power equipment using elements of AI"

18-40 Bryukhanov A.Yu., corresponding member. RAS (online, St. Petersburg) "Intelligent analytical software platform for proactive management of the environmental safety of agroecosystems"

19-10 Tsoi Yu.A., corresponding member. RAS "Energy conversion and digitalization of agricultural production"

19-40 Rostovtsev R.A., corresponding member. RAS; Dichensky A.V., Ph.D. s.-x. Sciences (online, Tver) "Development of the concept of an information and analytical system for the production of crop products"

20-00 Completion of the program on June 29, the fourth day of the Congress.

Program
***World Congress "Systems Theory, Algebraic Biology, Artificial
intelligence: mathematical foundations and applications"***

June 30, 2023

Moscow, Russian Academy of Sciences, Presidential Hall (Leninsky pr., 32 a)

9-00 registration of participants, buffet service

10-00 ***Opening*** of the day of the Congress dedicated to the problems of artificial intelligence (headed by Academician of the Russian Academy of Sciences Kalyaev I.A., Academician of the Russian Academy of Sciences Lektorsky V.A., Academician of the Russian Academy of Sciences Panchenko V.Ya., Academician of the Russian Academy of Sciences Khabrieva T.Ya., Academician of the Russian Academy of Sciences Goncharov S.S.)

Plenary reports

10-10 Lektorsky V.A., Academician of the Russian Academy of Sciences, "Artificial intelligence in the modern picture of the world"

10-20 Kobrinsky B.A., MD, RAAI, "Interpretation, explainability and trust in artificial intelligence systems"

10-50 Khabrieva T.Ya., Academician of the Russian Academy of Sciences, "Artificial intelligence in the coordinates of law"

11-20 Betelin V.B., Academician of the Russian Academy of Sciences, Galkin V.A., Doctor of Physical and Mathematical Sciences, "Mathematical problems of creating artificial neural networks and artificial intelligence"

12-10 B. Kumar B.S. (Hyderabad, India) "Artificial Intelligence Based Smart Advocacy in Legal Proceedings"

12-40 Qin Yong, prof., (Beijing Jiaotong University, Beijing, China), "Interdisciplinary integration intelligence for rail traffic operation and safety"

13-10 Alekseev A.Yu., Doctor of Philosophy, "Main Issues of the Philosophy of Artificial Intelligence"

13-40 Sergeev S.F., Doctor of Psychology, "Theory of self-organizing cognitive systems"

From 14-10 to 14-40 break, coffee break

14-40 Borisov V.V., Doctor of Technical Sciences, RAAI, "Soft models and methods in artificial intelligence problems"

15-10 XiaoSong Zhang, prof., (University of Electronic Science and Technology of China, Chengdu, China) Addressing AI-driven global cybersecurity challenges with artificial intelligence

15-40 Vorontsov K.V., Doctor of Physics and Mathematics, "Unification of text fragment markup and evaluation of markup models for the formalization of

humanitarian knowledge”

16-10 Gorodetsky V.I., Doctor of Technical Sciences, "Mathematical models of group behavior and management based on expert knowledge"

16-40 Srikanth Pooram, Samir Khalekar, Nitin Pagariya (Aurangabad, India) "Artificial Intelligence Based Image Analysis of an Innovative Product Lead-Free X-Ray Radiation Blocking Tiles"

17-10 Dr. Prasanna A., Dr. Rifayathali M. A., Dr. Premkumar M. "Estimation of Radar Signal Parameters for Creating Electronic Order of Battle Records"

17-40 Zhdanov A.A., Doctor of Physical and Mathematical Sciences, "Natural Intelligence, Artificial Intelligence and Artificial Organisms"

18-10 Kotenko I.V., Doctor of Technical Sciences, "Artificial intelligence for cybersecurity: analysis of the current state of fundamental and applied research"

18-40 Dragana Bajić1, prof., Goran Dimić, Yuliya Gaidamaka, Nikola Zogović (Univ. of Belgrade IMP, Belgrade, Serbia) "On Telescopic Error-Correcting Capabilities of Splitting Codes"

19-10 Misnik A.E., Assoc. (Belarus), "Ontological engineering of cyber-physical systems based on meta-associative graphs"

19-40 Adoption of decisions of the Congress, closing of the Congress

THE SECTION

“Theory and Application of Symbolic Computing with Artificial Intelligence Perspective”

Leader and moderator Dr. E. G. Rajan

26 June 2023

17-30 Hours – 18-00 Hours:

Dr. **E. G. Rajan** (Chairman, Pentagram Group of Companies, India, USA, UK and Canada), Dr. **V. Krishnan** (Department of Mathematics, Jamal Mohamed College, Trichy, India)

“On the Notion of Constructive Sets and Function Spaces in the Framework of Markov’s Mathematico-Logic”

27 June 2023

11-50 Hours – 12-20 Hours:

Dr. **Michael Patrick Coyle** (Medical School of ECU/ Avatar MedVision US LLC, NC, USA)

“Three-Dimensional Logical Image Processing System”

12-20 Hours – 12-50 Hours:

M. V. Ramanujam (Founder and CEO, Propinquity Genomics and Sciences, Bangalore, India)

“Fractal Genome-Fractal Cancer-Science to Real world Clinical implications: Genome Analytics to Rescue Ancient Indian Prowess in Mathematics and Computer Science”

15-30 Hours – 16-00 Hours:

Dr. **Deepika Nainpally** (University of Hyderabad, CR Rao Research Centre, India), Dr. **Pradeepthi K.V.** (University of Hyderabad, CR Rao Research Centre, India), Dr. **S. Venkata Raman** (University of Hyderabad, CR Rao Research Centre, India)

“Application Identification from Encrypted Traffic using Entropy Estimation and Machine Learning”

16-30 Hours – 17-00 Hours:

Budhagavi Rajarao Badrinath (Chairman, BRB Associates, Bangalore, India)

“Applied Markov Models of Social Engineering Processes for Fundamental Information Rights Issue”

30 June 2023

12-10 Hours – 12-40 Hours:

Kumar B.S., (Managing Trustee, Law Mechanics, Hyderabad, India)

“Artificial Intelligence Based Smart Advocacy in Legal Proceedings”

16-40 Hours - 17-10 Hours

Dr. **Srikanth Pooram** (Chairman, Pooram and Pooram Associates, Bangalore, India), **Samir Khalekar** (Trigem Innovations, Aurangabad, India), **Nitin Pagariya** (Trigem Innovations, Aurangabad, India)

“Artificial Intelligence Based Image Analysis of an Innovative Product Lead-Free X-ray Radiation Blocking Tiles”

17-10 Hours - 17-40 Hours

Dr. **Prasanna A.**, (Department of Mathematics, Jamal Mohamed College, Trichy, India), Dr. **Rifayathali M. A.**, (Department of Mathematics, Jamal Mohamed College, Trichy, India), Dr. **Premkumar M.**, (Sathyabama Institute of Science and Technology, Chennai, India)

“Estimation of Radar Signal Parameters for Creating Electronic Order of Battle Records”



Congress Forum
Consciousness: from Problem
Statement to Mathematical Models

Co-coordinators Academician of the Russian Academy of Sciences
Lektorsky V.A., Academician of the Russian Academy of Sciences Goncharov
S.S., moderator Dr. Vityaev E.E.

June 26, 2023

11-00 **Lektorsky V.A.**, Academician of the Russian Academy of Sciences, "Systems, theories of consciousness, philosophy of artificial intelligence, the role of formalization and mathematical modeling"

11-30 **Sudakov S.K.**, corresponding member. Russian Academy of Sciences, "Functional systems, complex structure of the action result acceptor"

12-00 **Chernoivanov V.I.**, Academician of the Russian Academy of Sciences, "Biomass systems, the role of a systematic approach in the agro-industrial complex and other industries"

12-30 **Tolokonnikov G.K.**, Ph.D., "Categorical systems"

13-00 **Petukhov S.V.**, Doctor of Physics and Mathematics, Matrix Genetics and Algebraic Biology

13-30 **Goncharov S.S.**, Academician of the Russian Academy of Sciences, "A logical approach to the problems of computability through definability and application in AI"

14-00 **Vityaev E.E.**, Doctor of Physical and Mathematical Sciences, Novosibirsk State University, "Non-reductionist theory of consciousness"

From 14-30 to 15-00 break, coffee break

15-00 **Anokhin K.V.**, Academician of the Russian Academy of Sciences, "Consciousness in neural hypernetworks"

15-30 **Chernigovskaya T.V.** Saint Petersburg State University, Institute for Cognitive Research, Russia. "Language and Mind: Not Algorithms Only".

16-00 **Ushakov V.L.** Candidate of Biological Sciences, Associate Professor,

Leading Researcher Institute for Advanced Brain Research, Lomonosov Moscow State University M.V. Lomonosov. "Approaches to the construction of architectures of neural networks of the brain in cognitive processes"

16-30 *Mazurov M.E.*, Doctor of Physics and Mathematics, Russian University of Economics G.V. Plekhanov, "On the physics of consciousness and its formation"

17-00 *Yakhno V.G.*, Doctor of Physical and Mathematical Sciences, IAP RAS, Nizhny Novgorod, "Basic models" have become a tool for describing the behavior of living systems?"

17-30 *Yumatov E.A.* Research Institute of Normal Physiology named after P.K. Anokhina, Moscow, "Methodology of cognition of the mental activity of the brain"

18-00 *Chernavsky A.V.*, IPTP RAS, Moscow, Russia, "Notes on Natural Intelligence"

18-30 *Ushakov D.V.*, Academician of the Russian Academy of Sciences, "Architecture of the human cognitive system and artificial intelligence"

19-00 *Vasyukov V.L.* Institute of Philosophy, Moscow, "Logical Models of Consciousness and Self-Consciousness"

19-20 *Concert* of genetic music, broadcast from the Moscow State Tchaikovsky Conservatory

20-00 End of the first day of the Forum Congress.



SECTION "Systems Biology, logic and artificial intelligence»

Heads of the Section **Kochetov Aleksey Vladimirovich**, Academician of the Russian Academy of Sciences, Director of the ICG SB RAS, Novosibirsk, Russia; **Kolchanov Nikolai Alexandrovich**, Academician of the Russian Academy of Sciences, Scientific Supervisor of the ICG SB RAS, Novosibirsk, Russia; **Goncharov Sergey Savostyanovich**, Academician of the Russian Academy of Sciences, Novosibirsk State University, Novosibirsk, Russia; **Vityaev Evgeniy Evgenievich**, Doctor of Physics and Mathematics, Novosibirsk State University, Novosibirsk, Russia

Venue of the Section: ICG SB RAS, at the address: Russia, Novosibirsk, Akademika Lavrentiev avenue, 10, conference hall in the main building on the 3rd floor

26.06.2023

12:30-13:30 - Registration of the Section participants.

Place of registration: hall on the 1st floor in the main building of the ICG SB RAS, prosp. Academician Lavrentiev, 10

13:30-14:00: Opening of the Section "SYSTEM BIOLOGY, LOGIC AND ARTIFICIAL INTELLIGENCE". Welcome words of the Section organizers:

Kochetov Aleksey Vladimirovich, Academician of the Russian Academy of Sciences, Director of the ICG SB RAS, Novosibirsk, Russia;

Kolchanov Nikolai Alexandrovich, Academician of the Russian Academy of Sciences, Scientific Supervisor of the ICG SB RAS, Novosibirsk, Russia;

Goncharov Sergey Savostyanovich, Academician of the Russian Academy of Sciences, Novosibirsk State University, Novosibirsk, Russia;

Vityaev Evgeniy Evgenievich, Doctor of Physics and Mathematics, Novosibirsk State University, Novosibirsk, Russia

Chen Ming, Professor, Zhejiang University, Hangzhou, China

14:00-22:00: Opening of the World Congress "SYSTEMS THEORY, ALGEBRAIC BIOLOGY, ARTIFICIAL INTELLIGENCE: MATHEMATICAL

FOUNDATIONS AND APPLICATIONS" (watching the broadcast from the Presidium of the Russian Academy of Sciences, Moscow)

27.06.2023

Subsection "Logic and Artificial Intelligence"

Subsection moderator: Sviridenko Dmitry Ivanovich, Doctor of Physical and Mathematical Sciences, Professor, Novosibirsk State University, SIBSUTI

14:30-15:00 – Marchenko Mikhail Aleksandrovich, Doctor of Physical and Mathematical Sciences, Director of ICM&MG SB RAS, Novosibirsk, Russia

EXPLAINABLE ARTIFICIAL INTELLIGENCE: PROBLEMS, QUESTIONS AND APPLICATIONS

15:00-15:30 – Andrey Nechesov, Candidate of Physical and Mathematical Sciences, Research Engineer, Institute of Mathematics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

ABOUT THREE PROBLEMS OF TRUSTFUL ARTIFICIAL INTELLIGENCE

15:30-16:00 - Huang Zhe Xue, Professor Emeritus, Big Data Institute, Shenzhen University, China

Non-MapReduce COMPUTING FOR INTELLIGENT ANALYSIS OF BIG DATA

16:00-16:30 - coffee break

16:30-17:00 - Ilic Stepic Angelina, Phd, Ognjanovic Z., Mathematical Institute of the Serbian Academy of Sciences and Arts, Belgrade, Serbia

FORMALIZATION OF COGNITIVE-BEHAVIORAL THERAPY IN LOGIC BASED ON MODAL REASONING

(remote report)

17:00-17:30 – Atayeva O.M., Serebryakov V.A., Tuchkova Natalia Pavlovna, Senior Researcher, Candidate of Physical and Mathematical Sciences, FRC IU RAS, Moscow, Russia

ON CONSTRUCTION OF A KNOWLEDGE GRAPH OF A SCIENTIFIC SUBJECT AREA IN A SEMANTIC LIBRARY

(remote report)

17:30-18:00 – Veljkovic Aleksandar Nebojsa, MSc, Mitic N.S., University of Belgrade, Faculty of Mathematics, Belgrade, Serbia

DATA STRUCTURE FOR BINDING AND QUERYING DIFFERENT BIOLOGICAL METADATA

(remote report)

18:00-18:30 - Mikhailovsky Nikolai Ernestovich, Higher IT School of TSU, Tomsk; NTR LLC, Moscow, Russia

THREE DEFINITIONS OF THE MEASURE OF KNOWLEDGE

28.06.2023

Subsection "Task Approach to Artificial Intelligence"

Subsection moderator: Sviridenko Dmitry Ivanovich, Doctor of Physical and Mathematical Sciences, Professor, Novosibirsk State University, SIBSUTI

14:00-14:30 – Sviridenko Dmitry Ivanovich, Doctor of Physical and Mathematical Sciences, Professor, Novosibirsk State University, SIBGUTI, ANO "Artificial Intelligence Cluster", Novosibirsk, Russia

TASK APPROACH TO BUILDING A DIGITAL TWIN OF ORGANIZATION

14:30-15:00 – Mantsivoda Andrey Valerievich, Doctor of Physical and Mathematical Sciences, Professor, Gavrilina D.E., Gavrilin D.N., Irkutsk State University, Irkutsk, Russia

OBJECT ONTOLOGIES AS LOGICAL STORAGE OF DATA AND KNOWLEDGE

15:00-15:30 – Vityaev Evgeniy Evgenievich, Doctor of Physical and Mathematical Sciences, Leading Researcher, Novosibirsk State University, Novosibirsk, Russia

TASK APPROACH TO ARTIFICIAL INTELLIGENCE AND THE THEORY OF FUNCTIONAL SYSTEMS OF THE BRAIN

15:30-16:00 - Boldyrev Igor Anatolyevich, Sviridenko D.I.2, Fedin K.V.3, Rofe A.R.1, Gritsenko A.A.1 .1 NSU; 2 SibGUTI; 3 INGG SB RAS, Novosibirsk, Russia

DECISION SUPPORT SYSTEM FOR WAVE

OF NON-DESTRUCTIVE TESTING OF BUILDINGS AND STRUCTURES

16:00-16:30 - coffee break

16:30-17:00 - Vitaly Gumirov, head and founder of the Eyeline.mobi group. Co-founder of ANO Cluster II (AI-Cluster.ru), Novosibirsk, Russia

AI DIGITAL TRANSFORMATION AND INFORMATION SECURITY

17:00-17:30 – Rakshun Yakov Valerievich, Candidate of Physical and Mathematical Sciences, Acting Head of the CAD Department, SIBGUTI, Novosibirsk, Russia

PROBLEMS OF BUILDING DIGITAL TWINS FOR RESEARCH IN BIOLOGY AND MICROELECTRONICS

17:30-18:00 - Anton Kolonin, Novosibirsk State University, Novosibirsk, Russia

A MODEL OF INDIVIDUAL CONSCIOUSNESS BASED ON THE PRINCIPLE OF SOCIAL PROOF AND MINIMIZATION OF RESOURCE CONSUMPTION

18:00-18:30 – Fedor Anatolyevich Kolpakov, Ph.D., Sirius University, Novosibirsk, Russia

DIGITAL PATIENT TWIN

29.06.2023

Subsection "Systems biology"

Moderator: Zemlyanskaya Elena Vasilievna, PhD, Senior Researcher, ICG SB RAS, Novosibirsk, Russia

10:00-10:35 - Chen Ming, Professor, Zhejiang University, Hangzhou, China
SYSTEM THEORY, ALGEBRAIC BIOLOGY, ARTIFICIAL INTELLIGENCE: MATHEMATICAL PRINCIPLES AND APPLICATIONS

10:35-11:10 – Kolchanov Nikolai Alexandrovich, Academician of the Russian Academy of Sciences, Academic Supervisor, Academician of the Russian Academy of Sciences, Ivanisenko V.A., Oshchepkov D.Yu., Ponomarenko M.P., ICG SB RAS, Novosibirsk State University, Novosibirsk, Russia

SYSTEM BIOLOGY: GENE NETWORKS AND BIG GENETIC DATA

11:10-11:40 – Shtark Mark Borisovich, Doctor of Biological Sciences Academician of RAS, FRC FTM, Novosibirsk, Russia

NEURAL NETWORKS AND THEIR INTERACTIVE RECONSTRUCTION (fMRI - EEG study)
(remote report)

11:40-12:00 - coffee break

Moderator: Dmitry Afonnikov, Leading Researcher, Associate Professor, PhD, ICG SB RAS, Novosibirsk, Russia

12:00-12:30 – Dygalo Nikolai Nikolaevich, corresponding member. RAS, Doctor of Biological Sciences, Prof., ICG SB RAS, Novosibirsk, Russia

NEURAL NETWORK ASPECTS OF BEHAVIOR REGULATION

12:30-13:00 – Sergey A. Lashin, Leading Researcher, Ph.D., ICG SB RAS, Novosibirsk, Russia

RECONSTRUCTION OF MATHEMATICAL MODELS OF LIVING SYSTEMS: PROBLEMS AND PROSPECTS

13:00-13:30 – Palyanov Andrey Yurievich 1, 2, 3, Doctor of Physical and Mathematical Sciences, Director of the ISI SB RAS, Palyanova N.V.2. 1 ISI SB RAS; 2 Research Institute FRC FTM SB RAS; 3 Novosibirsk State University, Novosibirsk, Russia

ON CURRENT PROBLEMS OF SIMULATION OF EVOLVING SYSTEMS

13:30-14:30 - lunch

Moderator: Sergey A. Lashin, Leading Researcher, Ph.D., ICG SB RAS, Novosibirsk, Russia

14:30-15:00 – Vladimir A. Kozlov, NIIFKI, Novosibirsk, Russia
IMMUNE SYSTEM: HOMEOSTASIS CONTROL FUNCTIONS,

MOLECULAR AND CELLULAR CONTROL MECHANISMS

15:00-15:30 – Ivanisenko Vladimir Alexandrovich, leading researcher, associate professor, Ph.D., Venzel A.S., Demenkov P.S., Ivanisenko T.V., Antropova E.A. ., Gaisler E.V., Rogachev A.D., Pokrovsky A.G., Kolchanov N.A., ICG SB RAS, Novosibirsk, Russia

APPLICATION OF ARTIFICIAL INTELLIGENCE AND GENE NETWORK METHODS FOR THE INTERPRETATION OF OMIX DATA

15:30-15:50 - Akberdin Ilya Rinatovich, Ph.D., senior researcher, ANO VO "Sirius University" (Sirius), Sochi, Russia

FLOW SIMULATION FOR BIOTECHNOLOGY

(remote report)

15:50-16:10 – Golubyatnikov Vladimir Petrovich, Doctor of Physical and Mathematical Sciences, Tatarinova E.A., Novosibirsk State University, Novosibirsk, Russia

GEOMETRY OF PHASE PORTRAITS OF ONE CLASS OF GENE NETWORKS

(remote report)

16:10-16:30 – Dmitry Afonnikov, Leading Researcher, Associate Professor, PhD, ICG SB RAS, Novosibirsk, Russia

DEEP MACHINE LEARNING METHODS IN PLANT PHENOMICS

16:30-16:50 – Krivorotko Olga Igorevna 1,2, Ph.D., senior researcher, Kabanikhin S.I. -kor. RAS, Zyatkov N.Yu.1, 1 IM SB RAS, 2 ICM&MG SB RAS, Novosibirsk, Russia

CONSTRUCTION OF MATHEMATICAL MODELS OF EPIDEMIOLOGY, ECONOMY AND SOCIAL PROCESSES BASED ON NEURAL NETWORKS

16:50-17:10 - coffee break

Moderator: Palyanov Andrey Yurievich, Doctor of Physical and Mathematical Sciences, Director of the ISI SB RAS, ISI SB RAS; Research Institute FRC FTM SB RAS; NSU, Novosibirsk, Russia

17:10-17:30 – Turkina V.A., Savina E.A., Vishnyakova E.V., Orlova N.G., Orlov Yury Lvovich, Doctor of Biological Sciences, Professor, Sechenov University, Financial University under the Government of the Russian Federation, Moscow, Russia

COMPUTER RECONSTRUCTION OF DISEASE GENE NETWORKS: EDUCATION AND ONLINE TOOLS OF BIOINFORMATICS

17:30-17:50 - Filippov Stanislav Sergeevich, Kazennov A.M., MIPT, Moscow, Russia

USING THE AlphaFold2 NEURAL NETWORK TO IMPROVE PROTEIN-PROTEIN DOCKING RESULTS

17:50-18:10 - Djapic Vladimir, PhD, Institute for the Study and Development of Artificial Intelligence of Serbia, Belgrade, Serbia

PneumoScreener: AI-BASED TOOL FOR AUTOMATIC ANOMALY DETECTION IN X-RAY AND COMPUTER CHEST IMAGES

18:10-18:30 - Milovanovic Milos, Dr., Mathematical Institute SAN (Serbian Academy of Sciences), Belgrade, Serbia

TIME AND CONSCIOUSNESS IN INTUITIONISM

18:30-18:50 – Nersisyan S.1, Hovhannisyan A.1, 2, Yusyan A.3, Hakobyan S.1, Avagyan S.3, Jordan F.3, Arakelyan A.A.1, 2, Mailyan Karine Rafikovna1, Doctor of Biological Sciences, 1Institute of Molecular Biology, NAS RA; 2 Russian-Armenian University; 3 “Armenian Bone Marrow Donor Registry” Charitable Foundation, Yerevan, Armenia

LACK OF APPLICATION OF SYSTEMS BIOLOGY APPROACHES IN ASSESSING THE RELATIONSHIP BETWEEN HLA-C AND COVID-19 Severity

Subsection "First Steps in Science"

Subsection moderator: Kolchanov Nikolai Alexandrovich, Academician of the Russian Academy of Sciences, Scientific Supervisor of the ICG SB RAS, Novosibirsk, Russia

18:50-19:05 - Kirpichev Vladimir Ernestovich, student of MBOU secondary school No. 8 named after M.I. Busygina, Ust-Ilimsk, Irkutsk region, Russia

APPLICATION OF TECHNOLOGIES AND TOOLS OF ARTIFICIAL INTELLIGENCE IN THE RECOGNIZATION AND PREDICTION OF FOREST FIRES IN THE RUSSIAN FEDERATION

19:05-19:30 - closing of the Section "SYSTEM BIOLOGY, LOGIC AND ARTIFICIAL INTELLIGENCE".

Summarizing:

Kolchanov Nikolai Alexandrovich, Academician of the Russian Academy of Sciences, Scientific Supervisor of the ICG SB RAS, Novosibirsk, Russia;

Goncharov Sergey Savostyanovich, Academician of the Russian Academy of Sciences, Novosibirsk State University, Novosibirsk, Russia;

Vityaev Evgeniy Evgenievich, Doctor of Physics and Mathematics, Novosibirsk State University,

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математические основы и приложения

Congress section "Legends of the world and national science"

Moderators:

Lyubimov A.P., Doctor of Law, ***Markov V.V.***, Doctor of Physical and
Mathematical Sciences, ***Muzafarov V.M.***, Ph.D.,
Petukhov S.V., Doctor of Physical and Mathematical Sciences

06.27.2023 RAS, Office of Academician of the RAS Nobel Laureate
Zhores Ivanovich Alferov (Moscow, Lenininsky pr. 32 a)

16-00 Lyubimov A.P. , Doctor of Law Sci., prof., "Zhores Alferov - a legend of
world science"

Discussions, memoirs of the Section participants

17-30 Markov V.V., Doctor of Physical and Mathematical Sciences, "Sedov
Leonid Ivaanovich and the Mathematical Institute. V.A. Steklov"

Discussions, memoirs of the Section participants

18-10 Petukhov S.V. Doctor of Physics and Mathematics, "Yuri Ivanovich
Manin Co-Chairman of the International Interdisciplinary Seminar Algebraic Biology
and Systems Theory"

Discussions, memoirs of the Section participants

19-00 Muzafarov V.M. Doctor of Physical and Mathematical Sciences, "Yuri
Mikhailovich Shirokov as a Man and a Scientist"

Discussions, memoirs of the Section participants

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Section of the Congress "ARTIFICIAL INTELLIGENCE: THEORY AND PRACTICE"

Leaders and moderators:

***Borisov V.V.**, Doctor of Technical Sciences, President of the Russian Association of AI (RAAI), **Zabekhailo M.I.**, Doctor of Physical and Mathematical Sciences, **Kobrinsky B.A.**, Doctor of Medical Sciences*

06.30.2023

10.50-11.20 **Gribova V.V.**, Doctor of Technical Sciences, "Ontological infrastructures for creating intelligent systems"

12.10–12.30 **Zabekhailo M.I.**, Doctor of Technical Sciences, "On the problem of stability of the results of intellectual analysis of replenished data sets"

12.30-12.50 **Borisov V.V.**, Doctor of Technical Sciences, Zharkov A.P., Doctor of Technical Sciences, "Analysis and multidimensional prediction of the state of complex systems and problem situations based on fuzzy temporal ontological and cognitive models"

12.50-13.10 **Prokopenko S.A.**, Doctor of Technical Sciences, Misnik A.E., Doctor of Technical Sciences, "Temporal neuro-fuzzy Petri nets for modeling and managing complex processes under uncertainty"

13.10-13.30 **Vinogradov G.P.**, Doctor of Technical Sciences, "Information technologies based on artificial intelligence models in the formations of the armed forces"

13.30-13.50 **Blagosklonov N.A.**, Kobrinsky B.A. Intelligent decision support systems in the diagnosis of orphan diseases

From 13-50 to 15-10 break, coffee break

15.10-15.40 **Mikheenkova M.A.** Formalization of cognitive activity in the social sciences

16.40-17.00 **Atayeva O.M. Serebryakov V.A., Tuchkova N.P.** On building a knowledge graph of a scientific subject area in a semantic library

17.00 -17.20 **Smorodinov A.D., Rassadin A.A., Gavrilenko T.V., Galkin V.A.**

Visual correlation analysis of data based on artificial neural networks

18.40-19.00 *Palyukh B.V., Ivanov V.K.*, Models and methods for joint use of trust functions and fuzzy neural networks for diagnostics of multi-stage technological processes

19.10-19.30 *Malykhina G.F.* Model-Based Design of Information and Measurement Systems Using Recurrent Neural Networks

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Section of the Congress *«Application of artificial intelligence technologies for preventive medicine and health protection»*

***Head Kalyaev I.A., academician of the Russian Academy of Sciences,
moderators: Grigoriev O.G., d.p.m.s., Kobrinsky B.A., d.m.s.***

06.28.2023

17-00 ***Rostovtsev V.N.***, Doctor of Medical Sciences, “Project of the FSD health monitoring system”

17-30 ***Afanasyeva T.V.***, MD, "Fuzzy models in the problem of descriptive and predictive analysis of medical data of patients with chronic diseases"

18-00 ***Kobrinsky B.A.***, Doctor of Medical Sciences, “Approaches to the creation of an intelligent system for monitoring the state of critical infrastructure operators”

18-30 ***Blagosklonov N.A.***, Doctor of Technical Sciences, Bersenev E.Yu., Doctor of Medical Sciences, Voropaeva Ya.V., “Donitova V.V. Intelligent recommender system for health saving”

19-00 ***Molodchenkov A.I.***, Doctor of Technical Sciences, Nikolaev A.A., Palchevsky A.I., Lukin A.V. "Technology for building knowledge bases based on heterogeneous semantic networks for creating intelligent systems (on the example of AI-Hippocrates)"

19-30 ***Korovin Ya.S.***, Ph.D., "Technologies for remote monitoring of the psycho-emotional state of critical infrastructure operators"

06.30.2023

10-10 ***Lektorsky V.A.***, Academician of the Russian Academy of Sciences, "Artificial intelligence in the modern picture of the world"

10-20 ***Kobrinsky B.A.***, MD, RAAI, "Interpretation, explainability and trust in artificial intelligence systems"

10-50 ***Petrova V.V., Shulepov P.A.***, Doctor of Technical Sciences, “Medico-biological basis of the digital medical profile model”

11-20 ***Senko O.V., Matveev I.A., Kuznetsova A.V.*** "Systems of fully meaningful interpretable models in biomedical research using artificial intelligence technologies"

11-50 ***Enikolopov S.N.***, Doctor of Medical Sciences, Kuznetsova Yu.M., Chudova N.V., Chuganskaya A.A. "Prospects for the development of tools for automatic recognition of anxiety and depression among users of social networks"

12-20 ***Smirnov I.V.*** "Technologies for intellectual analysis of texts based on multi-level processing of natural language"

12-50 ***Stankevich M.A.***, Doctor of Medical Sciences, "Identification of signs of mental ill-being according to social networks"

13-20 ***Zhebel V.V., MD, Zubarev D.V., Devyatkin D.A., Sochenkov I.V.*** "Methods for cross-language identification of thematically similar and related documents in scientific and technical search systems"

14-00 - 15-00 Discussion and closing of the Section



Congress section

"Topology and its applications"

Head Shchepin E.V., Corr. RAS
moderator Melikhov S.A., Ph.D.

June 27, 2023 RAS, Green Hall (Leninskiy pr. 32a)

13-50 Schepin E.V., corresponding member. RAS, MIAN im. V.A. Steklova,
"Applying topology to optical recognition"

From 14-20 to 15-00 break, coffee break

15-00 Frolkina O.D. (M.V. Lomonosov Moscow State University) "Properties of a compact set in R^N from its projections"

15-30 Skopenkov A., Styrts O.G. "Embeddability of join powers and minimal rank of partial matrices"

16-00 Melikhov S.A. Ph.D., MIAN im. V.A. Steklova, "Is every knot isotopic to a PL knot?"

16-30 Kudryavtseva E.A. Moscow State University M.V. Lomonosov "Algebraic Morse functions and realizability of any planar arrangement of ovals as an algebraic curve"

17-00 Gugin D.V. MIAN them. V.A. Steklova "Any suspension and any homology sphere are $2H$ -spaces"

17:30 Akhmetiev P.M. Tikhonov Moscow Institute of Electronics and Mathematics, "On regular cobordism groups with internal symmetries"

From 18-00 to 18-40 break, coffee break

18-40 V. Novikov V., Ph.D., Moscow State University M.V. Lomonosov "On inequalities in arbitrary simplices"

19-15-19-45 Pokrovsky I.L., MSTU im. N.E. Bauman, "On the issue of

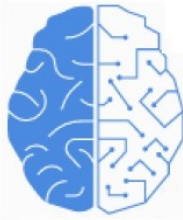
recognition of geometric patterns"

June 28, 2023

17-00 Makarenko N.G., Doctor of Physical and Mathematical Sciences, Doctor of Technical Sciences, GAO RAS, St. Petersburg, "Topology and graphodynamics of the solar magnetic fields"

18-00 Manturov V.O., Doctor of Physics and Mathematics, "Topology and artificial intelligence"

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Congress section "DNA Resonances"

***Head Rempel M.V., Ph.D.,
moderator Polimery Alexandra***

28.06.2023

18-00 Ikhlov Boris Lararevich, Ph.D., "Destruction of viral RNA using microwaves"

18-40 Rempel Maksim Viktorovich, PhD, "Parallelism of purine DNA sequences in nucleosomes and structural models of the DNA water shell".

19-30 Zyryanova Nelli Viktorovna, Ph.D., "Structuring of aqueous solutions under the influence of DNA oligomers and the influence of electromagnetic fields on living structures"

20-20 Sergey V. Petukhov, Doctor of Physics and Mathematics, "Resonant interactions in biosystems and universal rules for the stochastic organization of genomic DNA"

29.06.2023

7-20 AM PDT (17-20 PT): Dr. Irene Caesar "Non-Local DNA Wave Optics for Remote Bioholography"

8:00 am PT: Richard Alan Miller, Ph.D. "Modern Physics and Biological Resonant Signaling" Grants Pass, Oregon, USA

8-30 am PT: Max Rempel, Ph.D. "Parallelism of water layers and DNA bases: unraveling the origin of crystallization of the multilayered structure of water and its impact on chromatin dynamics", San Diego, USA

9:00 a.m. PT (12:00 p.m. EST): Glen Raine, Ph.D. "Environmental reactions of human DNA monitored by dielectric impedance spectroscopy", USA.

9:45 a.m. PT (12:45 p.m. EST) Panel discussion

10-50 PT (20-50, Finland) Matti Pitkanen "TGD's perspective on quantum biology and the concept of a morphogenetic field"

11-30am PT (8-30pm, Italy) Diego Lucio Rapoport Campodonico, Ph.D.
"Logophysics of the Klein bottle and super-dual ontopoiesis: the unity of the mind and spatio-temporal physical-chemical-biological organizations"

13:00 PDT (16:00 EDT): Anthony Fuccione "Electrodynamics of the cell cycle. Bioelectromagnetic fields, USA"

30.06.2023

16-20 Alexey Melkikh "Interactions of DNA and proteins: unresolved issues"

17-00 Nikolai Koltovoi "Effect of electromagnetic field on DNA"

17-40 Sergei Kotkovsky "Gold-complex section. The principle of skew-symmetric conjugation. Dual fields. (confirmed)"

18-20 Panchelyuga V.A., Ph.D., "On the systemic significance of the universal spectrum of periods"

19-00 Myakishev-Rempel M.V., Ph.D. "Testing the hypothesis of DNA resonances using computational genomics. Cancer mutations preferentially avoid entering the electronic wires in DNA"



Symposium "Functional systems", dedicated to the 125th anniversary of the birth of P.C. Anokhin

Head **Pertsov S.S.** corresponding member RAS,
moderator **Klimenko A.V.** PhD

06/28/2023, RAS, Presidential Hall (Moscow, Leninsky pr., 32a)

11.50 Murtazina E.P., PhD, Pertsov S.S. corresponding member RAS, prof. RAS, Doctor of Medical Sciences, "System aspects of the interaction of people and subjects with artificial intelligence"

12.15 Kovaleva A.V. PhD, Kriklenko E.A., Likhomanova E.N. "Cardiorespiratory interactions when a person performs tasks of different levels of complexity"

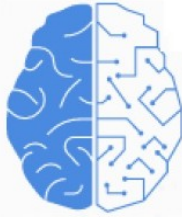
12.40 Karatygin N.A. PhD, Korobeynikova I.I. Ph.D., Pertsov S.S. corresponding member RAS, prof. Russian Academy of Sciences, Doctor of Medical Sciences, "The influence of rhythmically organized optical stimulation on the spectral-spatial characteristics of the α -range of the human EEG during the performance of a cognitive task"

13.05 Klimenko A.V. Candidate of Medical Sciences, Pertsov S.S. corresponding member RAS, prof. RAS, MD, Yakovenko I.Yu prof. Doctor of Biological Sciences, "The physiological cost of highly effective goal-directed behavior in people with different psychophysiological characteristics on the model of endosurgical training"

13.30 Babanov N.D. PhD, Kubryak O.V. d.b.n. "Features of human sensorimotor activity in the exoskeleton"

13.55 Aristov V.V., Kubryak O.V. Doctor of Biological Sciences, Stepanyan I.V. "Search for new methods of EEG analysis using different-scale ring structures"

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математические основы и приложения

Section of the Congress *"Agro-industrial complex and rural society: agrarian systems, agricultural engineering, artificial intelligence"*

Leaders: **Lobachevsky Ya.P.**, Academician-Secretary of the Department of Agricultural Sciences of the Russian Academy of Sciences, **Lachuga Yu.F.**, Academician of the Russian Academy of Sciences, **Dorokhov A.S.** academician of the Russian Academy of Sciences

06/29/2023 RAS, Presidential Hall (Moscow, Leninsky pr., 32a)

14-40 Lobachevsky Ya.P., Academician-Secretary of the Department of Agricultural Sciences of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences; Kazakevicha P.P., Deputy Chairman of the National Academy of Sciences of Belarus, corresponding member. NAS of Belarus - Introduction (Presidential Hall of the Russian Academy of Sciences)

14-50 Lachuga Yu.F., Academician of RAS, Dorokhov A.S. Academician of the Russian Academy of Sciences "Possibilities of modern approaches in artificial intelligence for breakthrough technologies in agricultural production"

15-20 Kazakevich P.P., Academician of the Russian Academy of Sciences (Minsk) "Automated sorting of apples by a vision system with an artificial neural network of deep learning"

15-50 Alt V.V., Academician of the Russian Academy of Sciences (Novosibirsk) "Information technologies in agriculture"

16-20 Fedorenko V.F., Academician of the Russian Academy of Sciences "Alternative innovative solutions for technical and technological support for the cultivation and increase in the fertility of root-inhabited soil horizons"

16-50 Shogenov Yu.Kh. Academician of the Russian Academy of Sciences "Modeling of running electrical impulses in the conductive system of a higher plant"

17-20 Glinushkin A.P., Academician of the Russian Academy of Sciences "Application of intelligent monitoring and early warning systems in the fight against potato late blight"

17-50 Gabitov I.I., Doctor of Engineering. Sciences (Ufa) "Intellectualization of the technical service of machines in the agro-industrial complex"

18-10 Godzhaev Z.A., corresponding member. Russian Academy of Sciences
"Development and creation of adaptive, agrophilic running systems of agricultural mobile power equipment using elements"

18-40 Bryukhanov A.Yu., corresponding member. RAS (St. Petersburg)
"Intelligent analytical software platform for proactive management of the environmental safety of agroecosystems"

19-10 Tsoi Yu.A., corresponding member. RAS "Energy conversion and digitalization of agricultural production"

19-40 Rostovtsev R.A., corresponding member. RAS; Dichensky A.V., Ph.D. s.-x. Sciences (online, Tver) "Development of the concept of an information and analytical system for the production of crop products"

20-00 Completion of the program on June 29, the fourth day of the Congress.

06/30/2023

Moscow, Presidium of the Russian Academy of Sciences,
Presidential Hall (Leninsky pr., 32a)
Moscow, FGBNU FNATS VIM (1st Institutskiy proezd, 5)

9-00 registration of participants, buffet service

10-00 Lektorsky V.A., Chairman of the NSMII RAS, Academician of the RAS
Introductory speech (presidential hall).

10-10 Khabrieva T.Ya., Academician-Secretary of the Branch of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences, Welcome speech, opening day of the Congress on AI (Presidential Hall)

Plenary reports presented in the presidential hall

10-10 Glazyev S.Yu., Academician of the Russian Academy of Sciences
"Strategic planning and artificial intelligence" (Hall of Moscow State University Shuvalov building)

10-40 Makarov V.L., Deputy Chairman of the NSMII RAS, Academician of the Russian Academy of Sciences, "Digital platform of the network of information centers as the basis of digital transformation" (MSU Shuvalov building)

Reports of the section

in the Federal State Budget Scientific Institution FNAC VIM

11-10 Kirsanov V.V., corresponding member. Russian Academy of Sciences
"Application of artificial intelligence systems for managing local biomachine systems in dairy farming"

11-40 Bakach N.G., Azarenko V.V., Goldyban V.V. (online, Minsk) "Technical vision for automatic identification and separation of substandard potato tubers"

12-00 Kataev Yu.V., Kostomakhin M.N., Pestryakov E.V. "Using neural network technologies to control the technical condition of energy-saturated tractors"

12-20 Komlach D.I., Yurin A.N., Vorobey A.S. "Automated sorting of potato

tubers by external defects by a vision system with an artificial neural network of deep learning"

12-40 Smirnov I.G. "Application of artificial intelligence technologies in horticulture"

13-00 Starovoitov S.I. "Control system for tillage machines with active working bodies based on machine vision and neural network"

13-20 Tsoy Yu.A., Kirsanov V.V., Perednya V.I. "Artificial intelligence and directions of its use in agricultural processes"

13-40 Dorokhov A.S., Aksenov A.G., Sibirev A.V. "Robotic system for optical assessment of the functional state of biological objects"

Break from 14:00 to 14:40

15-00 Budnikov D.A. "Application of computer modeling and machine learning as methods for substantiating the parameters of microwave convection installations for efficient processing of grain and seeds"

12-20 Lobachevsky Ya.P., Kurbanov R.K., Zakharova N.I. "Unmanned aerial vehicles as a tool for the digital transformation of agriculture"

15-40 Slinko D.B., Chavdarov A.V. "Robotic complex for plasma-powder surfacing of parts of the "shaft" type"

16-00 Fedorenko V.F., Aristov E.G. "An alternative concept for improving the environmental safety of the use of chemical plant protection products and food security"

16-20 Benevolensky S.B., Kiryanov A.A. "Features of the software of an agrobot with a machine vision system and an artificial intelligence module"

16-40 Vinogradov A.V. "The concept of improving the reliability of electricity supply to rural consumers and the quality of the electricity supplied to them"

17-00 Fedorenko V.F., Ivanov A.B. "Improving the energy efficiency of machine and tractor units using an intelligent telemetry system"

17-20 Saifutdinova Z., Kaspranov I., Beltsova S., Melentyeva N. "Apiary as a model of rational nature management"

17-40 Savchenkova I.P. "Cerebral organoids as new experimental models for studying the early development of the brain at the molecular, cellular, structural and functional levels in vitro"

18-00 Soldatenko A.V., Domblides A.S., "Biotechnology, digitalization and rapid selection of vegetable crops"

18-20 Listening to the final speeches from the Presidential Hall

19-30 Discussion

20-00 ***Completion of the work of the section and the Congress***