

# International Conference “CONSCIOUSNESS 2024”

August 26-30, 2024 Russian Academy of Sciences with the participation of the national academies of sciences of Belarus, Kazakhstan, Uzbekistan, scientific centers of Russia, Belarus, Kazakhstan, Uzbekistan, China, India and other countries within the framework of the section of the World Congress “Systems Theory, Algebraic Biology, Artificial Intelligence : mathematical foundations and applications” (hereinafter referred to as the Congress) The forum "Consciousness: from problem formulation to mathematical models" is held

## CONFERENCE "CONSCIOUSNESS-2024".

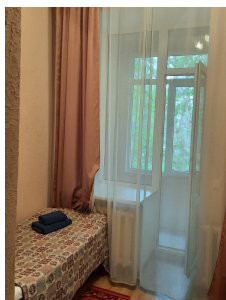
All conference sessions are held in person with the ability to connect via Zoom and broadcast on YouTube at the Krasnovidovo Rest House, located near the city of Mozhaisk on the banks of the Mozhaisk Reservoir - one of the most picturesque places in the Moscow region.



Accommodation for participants in the international conference “CONSCIOUSNESS 2024” is provided at the Moscow State University holiday home “Krasnovidovo”, located in a picturesque green area on the shore of the Mozhaisk Sea. Participants are accommodated in 2 buildings: yellow and red in single, double and triple rooms.



Single Room



Double Room



Refrigerator, etc.



Table in the room



Bathroom



The cost of accommodation, including three meals a day, for conference participants is 2,400 rubles per day per person. For booking, payment is made in advance; as usual, payment is made

during the gathering of participants at the Physics Department of Moscow State University on the day of departure; all participants must (for check-in, etc.) have a passport with them.

When registering, please indicate the days on which you plan to attend the conference, and also take into account that the bus departure from the Physics Department of Moscow State University is scheduled for 08/25/24 at 14-00. In case of independent arrival at the Holiday House, payment for accommodation is paid to the cashier of the Holiday House on an individual basis. Mandatory, both for speakers and for participants without a report, payment for a collection of abstracts, materials (issued to participants present at the conference, including those who do not give a report) and their electronic version is paid in advance and amounts to 3000 rubles. (for undergraduate and graduate students 1,500 rubles). For immediate questions regarding booking and payment, please contact the Conference Executive Organizing Committee listed below.

Free buffet service is available to all conference participants (including those not planning to stay). The meeting rooms and the Organizing Committee are located on the 3rd floor of the yellow building.

*Entrance to the building*



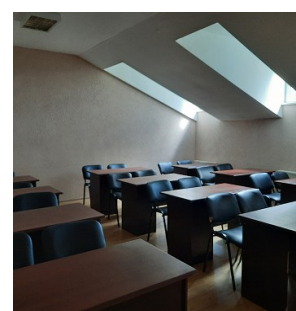
*Foyer*



*Main hall*



*Section rooms*



### *Conference bus*

Participants of the conference, held at the Krasnovidovo Rest House, are provided with buses from the Faculty of Physics of Moscow State University to the Rest House on the day of arrival and back to Moscow on the day of departure. Departure from Moscow from the Faculty of Physics of Moscow State University on August 25 at 14-00 (it is advisable to arrive an hour before departure, take a seat on the bus, pay for accommodation in the Rest House).

If you wish, you can get to the Holiday Home on ***your own***:

from the Belarusian railway station in Moscow by train to Mozhaisk (trains, including Lastochka, depart at intervals of 1-1.5 hours, the journey takes 1-2 hours), then by autoline or bus from the bus station, which is located nearby (70 m, crossing the bridge) with the railway station for the arrival of trains to Krasnovidovo, stop "Zoo" (15 minutes on the way); immediately ahead along the road from the stop, after 20 m turn left and then straight ahead, without turning, on foot for 10 minutes, you will see

*Supermarket*



*Right turn*



*Checkpoint (20 m from the turn)*



Among the attractions of the Moscow State University Holiday House "Krasnovidovo" we note the unique Artistic composition "Meeting of the headquarters of the Western Front"



### ***Procedure for preparation and conduct***

1. Submission of abstracts by August 1, 2024 via the Congress and Conference website <https://congrsysalgbai.ru/> (format requirements are indicated on the website, vol. 1-3 pages, etc.).

2. After receiving the abstracts, the Organizing Committee considers and makes a decision (approximately within a week from the receipt of the abstracts) on the participation of the abstract authors in the Conference and informs them of its decision.

3. Within a week from the moment of receiving a positive decision from the Organizing Committee, participants make a mandatory payment for the collection of abstracts, materials (issued to participants present at the conference) and their electronic version, which amounts to 3000 rubles. (for undergraduate and graduate students 1,500 rubles). Information about the details and details of the payment procedure is provided by the Executive Organizing Committee of the Conference (participants are asked to quickly decide on point 1, in view of issues of suitable accommodation in Krasnovidovo, choosing and booking a room number, etc.).

4. In addition to theses, speakers prepare presentations of their reports, which are reproduced during the report on appropriate equipment.

5. The theme of the Conference "CONSCIOUSNESS 2024" continues and develops the theme of the Forum "Consciousness: from problem formulation to mathematical models" held on June 26-30, 2023 within the framework of the Congress: detailed information is available in the Collection of Congress materials published by the Russian Academy of Sciences, which can be downloaded from the Congress website link

[https://congrsysalgbai.ru/media/files\\_to\\_download/%D0%91%D1%83%D0%BA%D0%BB%D0%B5%D1%82-%D0%BE%D0%B1%D0%BB%D0%B6-%D0%BF%D1%80%D0%B8%D0%BB%D0%BE%D0%B6\\_9eyLnQk.pdf](https://congrsysalgbai.ru/media/files_to_download/%D0%91%D1%83%D0%BA%D0%BB%D0%B5%D1%82-%D0%BE%D0%B1%D0%BB%D0%B6-%D0%BF%D1%80%D0%B8%D0%BB%D0%BE%D0%B6_9eyLnQk.pdf)

This Collection also contains information about the Organizing Committee of the Congress, the Executive Organizing Committee of the Congress and the Conference, the topics of the sections, including the Forum section "Consciousness: from problem formulation to mathematical models", the decisions of the Congress, including the holding of the Conference "CONSCIOUSNESS 2024" and other detailed information that participants need to know.

6. The "CONSCIOUSNESS 2024" conference is being held on the basis of M.V. Lomonosov Moscow State University, one of the participants and organizers of the Congress. Faculty of

Physics, Moscow State University. M.V. Lomonosov and his Department of Biophysics provide the relevant part of the organization of the Conference, including the bus connection with the Recreation House of M.V. Lomonosov Moscow State University "Krasnovidovo".

The Executive Organizing Committee of the Conference has been formed, which includes members of the Organizing Committee and the Secretariat of the Congress.

The co-chairs of the Executive Organizing Committee of the Conference, where you can contact for details of the preparation and holding of the Conference, are:

**Tverdislov Vsevolod Aleksandrovich**, Doctor of Physical and Mathematical Sciences, Head. Department of Biophysics, member of the Congress Organizing Committee (general issues), [tverdislov@mail.ru](mailto:tverdislov@mail.ru)

**Mazurov Mikhail Efimovich**, Doctor of Physical and Mathematical Sciences, member of the Organizing Committee of the Congress (issues of publishing abstracts, placement in Krasnovidovo), [mazurov37@mail.ru](mailto:mazurov37@mail.ru)

**Vityaev Evgeniy Evgenievich**, Doctor of Physical and Mathematical Sciences, member of the Organizing Committee of the Congress (general issues), [vityaev@math.nsc.ru](mailto:vityaev@math.nsc.ru)

**Ryabchikova Natalia Afanasyevna**, Doctor of Biological Sciences, member of the Congress Organizing Committee (issues of publishing abstracts, placement in Krasnovidovo), [nat@guesstest.ru](mailto:nat@guesstest.ru)

**Tolokonnikov Georgy Konstantinovich**, Ph.D., Head of the Congress Secretariat (general issues of the Conference and Congress), [admci@mail.ru](mailto:admci@mail.ru)

### ***The following directions have been identified***

Theories of consciousness	Neurophotonics and optogenetics for consciousness research
Experimental Evidence on Consciousness	Medical and social aspects of consciousness
Consciousness in artificial intelligence	Social consciousness, its types
Strong AI and artificial consciousness in engineering solutions	Nonlinear dynamics and information systems
Formation of consciousness in biological and artificial intelligence	The list is being formed.
Neuroinformatics methods for studying consciousness	

### ***Mini-courses of lectures***

The CONSCIOUSNESS 2024 conference has a component similar to the form of a summer scientific school.

Every day, from 16-00 (early on the last day) three lectures are held, the first by S.K. Sudakova, the second by E.E. Vityaeva. and the third - Tolokonnikova G.K., lectures for 30-40 minutes, 5-10 minutes for discussion.

**Sudakov S.K.** "Functional systems of P.K. Anokhin - K.V. Sudakova, complex structure of the acceptor of the result of an action, system quanta, interaction of functional systems"

**Vityaev E.E.** "Semantic probabilistic inference, modeling of functional systems based on it, integrated information according to Tononi and information non-reductionist theory of consciousness, ensuring maximum accuracy of reality forecast"

**Tolokonnikov G.K.** "Categorical systems and the category model of neural networks, neural information networks according to Yu.I. Manin, covering the theory of consciousness according to Tononi"

The minicourse program is being formed.

The publications of the Congress, including the CONSCIOUSNESS 2024 Conference, are endowed with the RAS logo (300th anniversary of the RAS)



The conference program includes the following sections  
Symposium "*Medical and social aspects of consciousness*", organized by



Institute for Advanced Brain Research  
Lomonosov Moscow State University

the section was organized with the participation



Academician N.N. Burdenko Neurosurgery Center



N.A. Alekseev Psychiatric Clinical Hospital No. 1



Neuroscience Research Center

coordinator *Ushakov Vadim Leonidovich* ([tiuq@yandex.ru](mailto:tiuq@yandex.ru))

section "*Strong AI with elements of artificial consciousness in engineering solutions*",  
organized by



Russian Engineering Academy, section  
"System approach: engineering, industry, agro-industrial  
complex, artificial intelligence"

chaired by Vice President of RIA Academician of the Russian Academy of Sciences and RIA  
*Chernoivanov Vyacheslav Ivanovich*

***Within the framework of the Section, the General Meeting of the Branch (section) of RIA  
"System approach: engineering, industry, agro-industrial complex, artificial intelligence" is  
held.***

The meeting is led by the Academician-Secretary of the Department, Academician of the  
Russian Academy of Sciences and RIA Chernoivanov V.I., Scientific Secretary of the Department,  
Corresponding Member. RIA Tolokonnikov G.K.

The agenda is formed with the participation of members of the Branch, including colleagues  
recommended for election to the RIA, the final text of the agenda is sent out on August 15, 2024.

***book presentation*** "Fundamentals of the theory of biomachine systems" Chernoivanov V.I.,  
Tolokonnikov G.K. by its authors (the book file can be received by e-mail by contacting the  
Organizing Committee; to receive a printed copy of the book, you must pay for it before the start of  
the conference)

## **section "Methodological aspects of forecasting"**

*Section co-chairs:*

**Ryabchikova Natalia Afanasyevna**, Doctor of Biological Sciences; Innovation center Skolkovo, Moscow State University. M.V. Lomonosov, e-mail: nat@guesstest.ru

**Godarev-Lozovsky Maxim Grigorievich**, head of the Laboratory-Department of "Forecasting Research" of the Institute of IIPV (Moscow - St. Petersburg), Doctor of Philosophy (PhD), corresponding member of PANI, e-mail: godarev-lozovsky@yandex.ru Tel. 8 (950) 038 57 90. Candidate of Philosophical Sciences.

Scientific secretary of the section

**Poltarakova Varvara Aleksandrovna**, master, e-mail: v.poltarakova@gmail.com

Section moderator

**Petrunya Oleg Eduardovich**, candidate of philosophical sciences.

### ***Areas of the section's work***

Forecasting as one of the types of intellectual activity in a broad sense is the ability to discover factors and predict the main trends that underlie fundamental science and influence its development. There is a need to identify areas for expanding knowledge and assess the priority of the main areas of science. One of the main directions can be considered the development of a methodology for philosophical forecasting, namely: finding means and resources for the development of science, predicting the consequences of this development, and identifying its long-term forecasts. Of great importance for the success of results in any field is the determination of a person's intellectual abilities to make adequate decisions in a problem situation.

For this purpose prof. ON THE. Ryabchikova at Moscow State University named after M.V. Lomonosov has developed a computer complex of psychological testing "Forecast 2.5", which makes it possible to determine a person's cognitive abilities. Such properties of the brain as consciousness and thinking make it possible to predict human behavior in any, and especially important, problem situation that requires quick and adequate decision-making.

The next event within the section was organized on the basis of "Forecast 2.5".

***Testing the cognitive abilities of participants*** (of course, those who wished to take the test!) of the CONSCIOUSNESS 2024 conference.

Detailing the topic of the section involves the following series of questions.

What systemic factors influence science and what is the role of the scientist's consciousness in its progress?

What are the specifics of such a forecasting object as science?

How to determine the forecast time horizon?

What are the forecast alternatives?

How to combine search and target approaches to forecasting?

In what areas of fundamental science are breakthroughs possible and where can they be used?

What are the limitations for the development of science?

What is the active role of the scientific community?

How to achieve completeness of predictive models and continuity of forecast?

How to realize independence and complexity in the analysis of information about the future?

How to practically predict man-made and natural disasters, as well as carry out appropriate monitoring?

How and by what criteria should forecasting experts be selected?

What radical changes are coming in fundamental science?

See the work of the section "Methodological aspects of forecasting", conducted by the Laboratory-Department of Forecasting Research of the Institute of IPV (World Congress "Systems Theory, Algebraic Biology, Artificial Intelligence: Mathematical Foundations and Applications", June 26-30, 2023) <https://www.youtube.com/watch?v=wyqg7ptHep8&t=4s>

**round table** "Philosophical ethics, science, production, agro-industrial complex: artificial societies, consciousness, intelligence" chaired by

Vice President of RIA Academician of the Russian Academy of Sciences and RIA **Chernoivanov Vyacheslav Ivanovich**

Chairman of the National Research Institute of Fine Arts of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences **Vladislav Aleksandrovich Lektorsky**  
round table organized



Federal State Budgetary Educational Institution of Higher Education  
"Samara State Technical University"



Russian Engineering Academy, section  
"System approach: engineering, industry, agro-industrial complex,  
artificial intelligence"



Scientific Council of the Russian Academy of Sciences on the  
methodology of artificial intelligence and cognitive research  
(sections of Mathematical Biology and Bionics)



Institute of Scientific Information for Social Sciences RAS  
(INION RAS)

Co-leaders and moderators of the round table

prof. **Shestakov Aleksandr Alekseevich**, shestakov.aa@ssau.ru,

prof. **Vladislav Olegovich Sheleketa**, vladshelo@mail.ru,

Doctor of Philosophy **Malyshev Vladislav Borisovich**, vlmaly@yandex.ru,

Ph.D. **Elena Aleksandrovna Gavrilina**, gavrilina@inion.ru

prof. RAS **Elena Aleksandrovna Dergacheva**, eadergacheva2013@yandex.ru

As part of the round table, the founding meeting of the opening of the "International Scientific Center for Comprehensive Socio-Humanitarian Expertise of Innovative Technologies" is taking place; the expertise is based, among other things, on the use of artificial intelligence. The leaders of the initiative group will make a detailed report and comments, the Conference will make an appropriate decision based on the results of the Round Table and the founding meeting. Colleagues and conference participants are invited to participate in discussions at the Round Table and work at the Scientific Center.

**cultural program includes**

- boat trips with descriptions of the sights and history of the region, coordinators **Sergei Vladimirovich Garbuk** (garbuk@list.ru) and prof. **Evgeniy Antonovich Yumatov** (eayumatov@mail.ru).

- **friendly dinner** on August 28 from 20-00

The program is being formed.

**Postal address** of the Executive Organizing Committee of the Conference: 119992, GSP-2, Moscow Lenin Hills, Moscow State University. M.V.Lomonosov Building 1, building 2, Faculty of Physics, Department of Biophysics, room: 5-67 (see also <http://biophys.phys.msu.ru/index.php/ru/>)

***We are waiting for you at the CONSCIOUSNESS 2024 Conference!***



WORLD CONGRESS  
**THEORY OF SYSTEMS,  
ALGEBRAIC BIOLOGY,  
ARTIFICIAL INTELLIGENCE:**  
*mathematical foundation and applications*

ВСЕМИРНЫЙ КОНГРЕСС  
**ТЕОРИЯ СИСТЕМ,  
АЛГЕБРАИЧЕСКАЯ БИОЛОГИЯ,  
ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ:**  
*математические основы и приложения*

世界大會  
**系統論、代數生物  
學、人工智能:**  
*數學基礎與應用*

*Российская Академия Наук  
Национальная Академия Наук Беларуси  
Национальная Академия Наук республики Казахстан  
при Президенте Республики Казахстан  
Академия Наук республики Узбекистан*

*Всемирный Конгресс  
«ТЕОРИЯ СИСТЕМ, АЛГЕБРАИЧЕСКАЯ БИОЛОГИЯ,  
ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ: МАТЕМАТИЧЕСКИЕ  
ОСНОВЫ И ПРИЛОЖЕНИЯ»*

*ФОРУМ «СОЗНАНИЕ: ОТ ПОСТАНОВКИ ПРОБЛЕМ К  
МАТЕМАТИЧЕСКИМ МОДЕЛЯМ»*

# **CONFERENCE PROGRAM «CONSCIOUSNESS 2024»**

**26-30 августа 2024 года**



*Российская Академия Наук*

Москва, Красновиново, 2024



**ВСЕМИРНЫЙ КОНГРЕСС**

**«Теория систем, алгебраическая биология, искусственный интеллект:  
математические основы и приложения»**

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**ФОРУМ КОНГРЕССА**

**«Сознание: от постановки проблем к математическим моделям»**

**Секция «Феномен инсайта с точки зрения психологии, нейробиологии  
и физиологии, возможности моделирования», Москва, 26-30 июня 2023 г.**

**Международная конференция**

**«СОЗНАНИЕ 2024»**

***Московская область, Красновидово,  
26-30 августа 2024 г.***

**August 26, 2024,**

9-00 registration of participants

Main Hall

10-00 Opening of the Conference

***Conference Greetings***

Department of Nanotechnology and Information Technology of the Russian Academy of Sciences, Vice-President of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences Kolchanov N.A.

Department of Power Engineering, Mechanical Engineering, Mechanics and Control Processes of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences Kalyaev, I.A. Blagonravov Institute of Machine Building, Director Glazunov V.A.

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

Department of Social Sciences of the Russian Academy of Sciences, National Scientific Research Institute of Mathematics of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences Lektorsky V.A.

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

Department of Physiological Sciences of the Russian Academy of Sciences, I.P. Pavlov Russian Physiological Society of the Russian Academy of Sciences, Academician of the Russian Academy of Sciences Ostrovsky M.A.

From the National Academy of Sciences of Azerbaijan, President of the National Academy of Sciences of Azerbaijan, Academician Isa Akbar oglu Habibbayli

From the Indian National Academy of Sciences, Director of Pentagram Research Centre Dr. E. G. Rajan

От КНР Linyi University, professor Fu Deqian,

От КНР Shenzhen University, professor Joshua Zhexue Huang

### *Доклады Reports*

10-30 Анохин К.В., академик РАН, Сознание в нейронных гиперсетях, Consciousness in neural hypernetworks

10-50 Мазуров М.Е. О физике сознания и его формировании, About the physics of consciousness and its formation

11-20 Ушаков Д.В., академик РАН, Когнитивная система человека и искусственный интеллект. Architecture of the human cognitive system and artificial intelligence

11-40 Черноиванов В.И. академик РАН, Толоконников Г.К. Системный взгляд на развитие агроинженерной науки в России, A systemic view of the development of agricultural engineering science in Russia

12-00 Витяев Е.Е. Формализация сознания как механизма разрешения противоречий, Formalization of consciousness as a mechanism for resolving contradictions

12-30 Шогенов Ю.Х. академик РАН, Мазуров М.Е., Толоконников Г.К. Минимальное сознание растений – современные представления, Elements of consciousness in plants

13-00 Малинецкий Г.Г. Самоорганизация, сознание и искусственный интеллект, Self-organization, consciousness and artificial intelligence

Перерыв на обед с 13-30 до 14-30 Lunch break from 13:30 to 14:30

14-30 Петрунин Ю.Ю. Эволюция концепции сознания и искусственный интеллект, Evolution of the concept of consciousness and artificial intelligence

14-50 Петухов С.В. Генетическое булево-логическое кодирование, цикличность в живом и циклические коды Грея. Коллективное алгебрологическое сознание, Genetic Boolean-logical coding, cyclicity in the living and cyclic Gray codes. Collective algebraic consciousness

15-20 Каплан А.Я. На пути к антропоморфному копированию семантических полей человека на основе нейронтерфейсных технологий пятого

поколения, Towards anthropomorphic copying of human semantic fields based on fifth-generation neural interface technologies

15-40 Цукерман В.Д. Теоретические и прикладные аспекты резервуарных вычислений на основе реляционных сетей с чётным циклическим торможением, Theoretical and applied aspects of reservoir computing based on relational networks with even cyclic braking

16-00 Щепин Е.В. чл.-корр РАН, О распознавании рукописных символов, On the recognition of handwritten characters

16-30 Яхно В.Г. Динамические режимы в моделях живых систем, Dynamic modes in models of living systems

16-50 Орлов Ю.Л., Орлова Н.Г. Математические подходы к анализу сложности геномных текстов, Computational Tools for the DNA Text Complexity Estimates for Microbial Genomes Structure Analysis

17-10 Нечесов А.В. Теория обучения как один из ключевых элементов сознания в ИИ, Learning theory as one of the key elements of consciousness in AI

17-30 Судаков С.К., Витяев Е.Е., Толоконников Г.К., Нечесов А.В. Мини-Курс лекций «Теория функциональных систем, ее формализации и искусственный интеллект»

Dinner from 18-00 to 20-00

### ***Cultural and health program***

Permanent (Conference Headquarters, 3rd floor) computer diagnostics "Determination of human intellectual abilities using the original patented psychological computer method "Prognosis 2.5". Individual reception by prior appointment (procedure 10 min, result, results with interpretation individually at the end of the reception).

20-00

Kraynov G.I., doctor, Master class. Demonstration of the effectiveness of the method of holistic biomechanics for brain function and health (degree of emotional stress, exercises including work with training belts, etc.)

## ***August 27, 2024***

### ***9-00 registration of participants***

#### ***Main hall***

10-00 Черноиванов В.И., Петухов С.В., Толоконников Г.К. Биомашсистемы: технология холодной плазмы и реализация потенциалов геномов, Biomachsystems:

Cold Plasma Technology and Realization of Genome Potentials

10-20 Кобляков А.А. Трансмерные отношения и логика творчества, Transdimensional relationships and logic of creativity

11-00 General meeting of the Russian Engineering Academy Branch "System approach: engineering, industry, agro-industrial complex, artificial intelligence"

Round table of the establishment of the "International scientific center for complex socio-humanitarian expertise of innovative technologies"

***Among the speeches:***

Rubtsov S.V. "Bionics and ethics: history and relevance",

Sheleketa V.O. "Ethical, legal and methodological problems of forming international centers of ethical and humanitarian expertise".

Dergacheva E.A. "The need to preserve the socio-biospheric picture of the world in the era of the transformative impact of intelligent machines".

Boykov N. (Serbia) Spiritual security of man in the era of biomedical technology

Fu Deqiang (China) The potential risks of data leakage from LLMs (large language models).

Establishment of the scientific community of specialists in the theory of functional systems of P.K. Anokhin

(the program is being completed)

***Small Hall***

***Symposium "Medical and Social Aspects of Consciousness"***

10-00 Ушаков В.Л. Институт перспективных исследований мозга МГУ им. М.В. Ломоносова, Подходы к определению биологических коррелятов сознания: анализ данных в нейрофизиологических исследованиях, Approaches to Determining Biological Correlates of Consciousness: Analysis of Data in Neurophysiological Research

10-30 Andreyuk D.S. State Budgetary Healthcare Institution "Periodic Clinical Hospital No. 1 of the Moscow Health Department" Collective intelligence as a result of the evolutionary process. Medical consequences of the neuroevolutionary approach to the analysis of social behavior.

11-00 Sergeev D.V. Federal State Budgetary Scientific Institution "Scientific Center of Neurology" Consciousness and its disorders: the view of a doctor and a researcher.

11-30 Cherkasova A.N. Federal State Budgetary Scientific Institution "Scientific Center of Neurology" The phenomenon of "hidden consciousness": development of diagnostic paradigms, significance for neurorehabilitation.

12-00 Aleksandrova E.V. Federal State Autonomous Institution "National Medical Research Center of Neurosurgery named after Academician N.N. Burdenko"

of the Ministry of Health of the Russian Federation Exit from the post-traumatic unconscious state: problems and solutions

12-30 Дорохов В.Б., Ткаченко О.Н., Лигун Н.В. Сознание и эпизодическая память при парадигме сон-бодрствование, вызываемое пробуждением из непрерывного психомоторного теста , Consciousness and episodic memory in a sleep-wake paradigm induced by awakening from a continuous psychomotor test

13-00 Хазова М.Л., Ушаков В.Л., Дорохов В.Б. Нейрофизиологические основы переходов бессознательное-сознательное в модели сон-бодрствование, Neurophysiological bases of unconscious-conscious transitions in the sleep-wake model

Перерыв на обед с 13-30 до 14-30 Lunch break from 13:30 to 14:30

14-30 Mario Martínez Saito ВШЭ On-off synecdoche: a theory of consciousness grounded on evolutionary biological cybernetics, philosophy of mind, and neuroscience

15-00 Козунов В.В. Центр нейрокогнитивных исследований (МЭГ-центр) Общее пространство, видовое взаимодействие и индивидуальное переживание: декомпозиция сознания и материи в рамках онтологии трехаспектного монизма.

15-30 Чернавская О.Д. Физический Институт им. П. Н. Лебедева, РАН (Москва, Россия) Понятия «Сознание», «Разум» и «Мозг» с точки зрения Общей Теории Сложных Развивающихся Систем, The concepts of "Consciousness", "Mind" and "Brain" from the point of view of the General Theory of Complex Developing Systems

16-00 Самсонович А.В. Можем ли мы внести ясность в вопрос о сознании? Can we clarify the issue of consciousness?

16-30 Дискуссия Симпозиума, подведение итогов и принятие решений

### ***Cultural and health program***

Permanent (Conference Headquarters, 3rd floor) computer diagnostics "Determination of human intellectual abilities using the original patented psychological computer method "Prognosis 2.5". Individual reception by prior appointment (procedure 10 min, result, results with interpretation individually at the end of the reception).

20-00

Kraynov G.I., doctor, Master class. Demonstration of the effectiveness of the method of holistic biomechanics for brain function and health (degree of emotional stress, exercises including work with training belts, etc.)

## *August 28, 2024*

### *9-00 registration of participants*

#### *Main hall*

10-00 Годжаев З.А. чл.-корр. РАН, Искусственный интеллект в агропромышленном комплексе России, Artificial Intelligence in the Russian Agro-Industrial Complex

10-20 Юматов Е.А. Системная организация и методология изучения природы сознания, Systemic organization and methodology for studying the nature of consciousness

10-40 Войцехович В.Э. Тесты Тьюринга для установления уровня «разумности» усложняющегося ИИ, Turing tests to establish the level of "intelligence" of an increasingly complex AI

11-00 Стригин М.Б. Четыре этапа эволюции мышления: экспликация мирового разума, Four stages of the evolution of thinking: explication of the world mind

11-20 Хмелевская С.А. Базальное познание как метод изучения когнитивных систем на ненейронной основе, Basal cognition as a method for studying cognitive systems on a non-neural basis

11-40 Береснева М.А. Ценностно-мотивационно-смысловая система как системообразующий фактор самоорганизации сознания, Value-motivation-semantic system as a system-forming factor in the self-organization of consciousness

12-00 Быльева Д.С. Искусственная интеллектуальность: прошлое и будущее, Artificial Intelligence: Past and Future

12-20 Васильев Н.С., Громько В.И. Транссемантическое сознание в системно-информационной культуре как задача универсального ИИ: от цифровизации к информатизации, Transsemantic consciousness in system-informational culture as universal AI problem: from cy-phervisation to informatics

12-40 Журавлев Н.А. Время инфодинамики, Time of infodynamics

13-00 Малышев В.Б. Метаязык сознания в эру искусственного интеллекта: культурно-исторические аспекты, The Metalanguage of Consciousness in the era of Artificial Intelligence: cultural and historical aspects

Перерыв на обед с 13-30 до 14-30 Lunch break from 13:30 to 14:30

14-30 Шелекета В. О. Перспективные модели цифровизации сознания и культуры в контексте механистического и постмодернистского понимания сознания, Promising models of digitalization of consciousness and culture in the

context of mechanistic and postmodern understanding of consciousness

15-00 Гапанюк Ю.Е., Каганов Ю.Т., Карабулатова И.С. Когнитивная архитектура на основе подхода Гибридных Интеллектуальных Информационных Систем, Cognitive architecture based on the approach of Hybrid Intelligent Information Systems

15-20 Ермаков Д.Н., Самусенко О.Е. Свойства сознания современного человека в условиях цифровой экономики, Properties of consciousness of a modern person in the conditions of a digital economy

15-40 Каганов Ю.Т., Оселедчик М.Б. Полисемиотика когнитивных процессов и проблема генезиса сознания, Polysemiotics of cognitive processes and the problem of the genesis of consciousness

16-00 Лехницкая П.А. Вербализация объекта и действия: результаты исследования на айтрекере, Object and action naming: eye-tracking study results

16-20 Никольский А.Е., Никольский А.А., Петрунина Е.В. Особенности формирования модели динамического сознания, Features of the formation of a dynamic consciousness model

16-40 Филипеня О.Л., Ткаченко В.В. Концептуальное проектирование семантических моделей речи, Conceptual Design of Semantic Model of Speech

17-00 Рапопорт Камподонико Диего Лусио (Diego Lucio Rapoport Campodonico) О супрадуальной (недвойственной) интеграции разума и процессов и структур физико-химических и когнитивных областей, On a supradual (nondual) integration of the mind and the processes and structures of physical chemical and cognitive domains

17-20 Sudakov S.K., Vityaev E.E., Tolokonnikov G.K., Nechesov A.V. Mini-course of lectures "Theory of functional systems, its formalization and artificial intelligence"

17-50 Kraynov G.I., doctor, Results of the Master Classes held on August 26 and 27.

### ***Small Hall***

#### ***Section "Methodological aspects of forecasting"***

11-00 Рябчикова Н.А. Теория сознания и искусственный интеллект, Theory of consciousness and artificial intelligence

11-30 Годарев-Лозовский М.Г. Сознание, системный эффект и запутанность в теории барионной симметрии, Consciousness, system effect and entanglement in the theory of baryon symmetry

11-50 Буянкин В.М., Семенов С.В. Нейроинтуитивное прогнозирование физических процессов адаптивной нейронной сетью на основе системы нечеткого вывода «adaptive neuro-fuzzy inference system» (ANFIS), Neurointuitive prediction of physical processes by an adaptive neural network based on a fuzzy

inference system «adaptive neuro-fuzzy inference system» (ANFIS)

12-10 Дорохов И., Малышев Ю.М. Искусственный интеллект и искусственный Разум, Artificial Intelligence and Artificial Mind

12-30 Елхова О.И., Кудряшев А.Ф. Интегративный подход и новые перспективы в исследовании сознания, Integrative Approach and New Perspectives in Consciousness Research

12-50 Канделинский С.Л., Ткаченко В.В. Управление интуицией и научно-техническое прогнозирование, Intuition Management and Scientific and Technical Forecasting

13-10 Малыхина Г.Ф. Мультикритериальное управление производственными процессами ТЭЦ с использованием прогнозирующих моделей, Multicriteria control of production processes of thermal power plants using predictive models

Перерыв на обед с 13-30 до 14-30 Lunch break from 13:30 to 14:30

14-30 Петруня О.Э. Теоретико-методологические проблемы сознания: описание, объяснение, прогнозирование, Theoretical and methodological problems of consciousness: description, explanation, forecasting

15-00 Емельянов А.Н., Маркова А.Ю. Теория места в прогностике развития Философского Монтеневского Общества г. Луганска. The theory of place in predicting the development of the Philosophical Montaigne Society of Lugansk

15-20 Прись И.Е. Искусственный интеллект, естественный интеллект и цифровая реальность, Artificial Intelligence, Natural Intelligence and Digital Reality

15-40 Сапунов В.Б. Прогнозирование социальной эволюции на основе трудов Герберта Джорджа Уэллса, Predicting social evolution based on the works of Herbert George Wells

16-00 Колтовой Н.А. Музыкаотерапия, Music therapy

16-20 Ковалев М.А. Проблематика автономности процессов обучения и самообучения в задачах искусственного интеллекта, The problems of a autonomy of learning and self-learning processes in artificial intelligence tasks

16-40 Тайманов Р.Е., Сапожникова К.В. Материя и сознание с позиций метрологии, Matter and Consciousness in the Context of Metrology

17-00 Полтаракова В.А., Годарев-Лозовский М.Г. Гипотеза взаимопревращения психикой человека информации и знания

17-20 Фалько В.И. Парадоксальность прогнозирования развития прогностики в условиях приближения технологической сингулярности, The paradox of forecasting the development of forecasting in the context of the approaching technological singularity

17-40 Шульц Э.О. А есть ли «просвет»? Is there any hope for the best?



Ужин с 18-00 по 20-00

***Культурно оздоровительная программа***

Постоянно действующая (Штаб Конференции, 3 -й этаж) компьютерная диагностика «Определение интеллектуальных способностей человека с помощью оригинальной патентованной психологической компьютерной методики "Прогносис 2.5". Индивидуальный прием по предварительной записи (процедура 10 мин , результат, результаты с интерпетацией индивидуально в конце приема).

20-00 *Дружеский вечер*

**29 августа 2024 г.,**

9-00 регистрация участников

***Основной зал***

10-00 Иванус А.И. О возможности создания системы искусственной генерации новых знаний, On the possibility of creating a system for artificial generation of new knowledge

10-30 Толоконников Г.К. Формальная конструктивная философия с элементами сознания, Formal constructive philosophy with elements of consciousness

11-00 Симонов Н.А. Моделирование сознания ментальными образами в представлении пятен, Modeling consciousness with mental images in the representation of spots

11-20 Смолин В.С. Нейросетевые интуиция, мышление и сознание, как средства формирования действий в сложной среде, Neural network intuition, thinking and consciousness as means of forming actions in a complex environment

11-40 Слипченко А.В., Мазуров М.Е. О прогнозировании нестационарных временных рядов на основе метода скользящего окна, Forecasting of non-stationary time series on the basis of the sliding window method

12-00 Белякин С.Т., Степанов А.В. Применение теоремы KAN для двух взаимодействующих нейронов, Application of the KAN theorem for two interacting neurons

12-20 Кулабухов В.С. Общий принцип изоморфизма: начала алгебраической теории сознания, General Principle of Isomorphism: The Beginnings of an Algebraic Theory of Consciousness

12-40 Чуличков А. И., Фаломкина О. В., Пытьев Ю. П., Балакин Д. А. Математический формализм субъективного моделирования, Mathematical formalism of subjective modeling

13-00 Колесников А.В. Темпоральная арифметика сознания, Temporal arithmetic of consciousness

Перерыв на обед с 13-30 до 14-30 Lunch break from 13:30 to 14:30

14-30 Руденко Э.В., Семикина Е.В. Математический подход к понятию мышления и сознания на основе расчета маршрутов на графе генетическим алгоритмом, A Mathematical Approach to the Concept of Thinking and Consciousness Based on the Calculation of Routes on a Graph by a Genetic Algorithm

14-50 Афанасьева В.М., Спиридонов В.Ф. Синтаксис как источник сложности в задаче на отдаленные ассоциации, Syntax as a source of compound remote associate task difficulty

15-10 Микрюков А.А., Мазуров М.Е., Микрюкова А.А. Моделирование сложных технических систем на основе когнитивных технологий, Modeling of complex technical systems based on cognitive technologies

15-30 Спасков А.Н. Квантовая модель элементарного сознания, Quantum model of elementary consciousness

15-50 Станкевич Л.А. Искусственный мозг, разум и сознание гуманоидных роботов, Artificial brain, mind and consciousness of humanoid robots

16-10 Беликова К.М. Проверка научных текстов, созданных предположительно с помощью нейросетей: проблемы доверия результатам, Verification of scientific texts created presumably with the help of neural networks: problems of trust in the results

16-30 Котов В.Б., Сохова З.Б. Сознание агентов, Agent consciousness

16-50 Цыганков В.Д. Генетический субстрат атома сознания и процессы в нем. Программная реализация генератора живой материи, Genetic substrate of the atom of creation and processes in it. Software implementation of the generator of living matter

17-20 Sudakov S.K., Vityaev E.E., Tolokonnikov G.K., Nechesov A.V. Mini-course of lectures "Theory of functional systems, its formalization and artificial intelligence"

### ***Cultural and health program***

Permanent (Conference Headquarters, 3rd floor) computer diagnostics "Determination of human intellectual abilities using the original patented psychological computer technique "Prognosis 2.5". Individual reception by

appointment (procedure 10 min, result, results with interpretation individually at the end of the reception).

During the day on August 29 and 30

Boat rides along the Mozhazhskoye Sea, excursion by appointment.

Visit to the Borodino Field Museum, excursion by appointment.

## *August 30, 2024*

9-00 registration of participants, buffet service

### *Доклады Reports*

10-00 Ткаченко В.В. Модель локального регуляторного звена рефлекторной дуги в парадигме векторной психофизиологии, Model of the local regulatory link of the reflex arc in the paradigm of vector psychophysiology

10-20 Масальский Н.В. Компактное устройство для высокочувствительной рН-метрии, Compact device for highly sensitive pH measurement

10-40 Соловьева К.П., Клеева Д.Ф., Грунин А.А., Беляев В.А., Лебедев М.А. Интерфейсы 'мозг-компьютер' как инструмент исследования и понимания сознания, Brain-computer interfaces as a tool for researching and understanding consciousness

11-00 Аверин Г.В., Звягинцева А.В. Человеческое самосознание в шкале производства энергии биологическими организмами, Human self-awareness on the scale of energy production by biological organisms

11-20 Арбатский М.С., Баландин Д.Е., Чуров А.В., Варачев В.О., Сусова О.Ю., Наседкина Т.В. Использование нескольких баз данных для изучения внутриопухолевой клеточной гетерогенности первичных клеточных линий глиобластомы, выявленной с помощью scRNA-seq, Using multiple databases to study intratumoral cellular heterogeneity of primary glioblastoma cell lines identified by scRNA-seq

11-40 Воронков Г.С. В поиске нейрофизиологического фундамента, обуславливающего характеристики субъективного зрительного образа пространства. In search of a neurophysiological foundation that determines the characteristics of the subjective visual image of space

12-00 Гребеневич Г. Б., Лемешко Е. В., Пузанков А. А., Ткаченко В. В., Хрустицкая Л. Б. Машиннообучаемая система «цифровой помощник» врача на основе данных неинвазивного электрофизиологического картирования кожных потенциалов, Machine-learning system "digital assistant" of a doctor based on data from non-invasive electrophysiological mapping of skin potentials

12-20 Ихлов Б.Л. Воздействие модулированных микроволн на ЦНС, The effect of modulated microwaves on the central nervous system

12-40 Сидорова В.Ю. Эволюция интеллекта сельскохозяйственных животных и биосенсоры в животноводстве, Evolution of intelligence in farm animals and biosensors in animal husbandry

13-00 Скачилова С.Я., Симакина Е.А. Медицинские и социальные аспекты нейромедиаторных аминокислот, Medical and social aspects of neurotransmitter amino acids

Перерыв на обед с 13-30 до 14-30 Lunch break from 13:30 to 14:30

14-30 Гасилова С.С., Глушанина М.Е., Разумнов А.С., Садовая Е.М. Исследование законов последействия в процессе категоризации в зрительном поиске, Study of the laws of aftereffect in the process categorization in visual search

14-50 Савельев И. В., Вихорев А. В., Ремпель М. М., Полеская О. О., Миллер Р. А., Вечер А. А., Мякишев-Ремпель М.В. Модель и геномные доказательства влияния последовательности ДНК на структуру воды, динамику хроматина и клеточное мышление, Model and genomic evidence for the influence of DNA sequence on water structure, chromatin dynamics and cellular thinking

15-10 Sudakov S.K., Vityaev E.E., Tolokonnikov G.K., Nechesov A.V. Mini-course of lectures "Theory of functional systems, its formalization and artificial intelligence"

15-50 Discussion of the project and adoption of decisions of the Conference, end of the Conference.

18-00 Organized departure to Moscow