The Program of 6th International Scientific Conference on INFORMATION, CONTROL, AND COMMUNICATION TECHNOLOGIES (ICCT-2022)

Astrakhan, October 03-07 2022

V.A. Trapeznikov Institute of Control Sciences of RAS

Astrakhan State Technical University

V.A. Kotelnikov Institute of Radio Engineering and Electronics of RAS

Scientific and Technological Centre of Unique Instrumentation of RAS

National Research University Moscow Power Engineering Institute

V. A. Trapeznikov Institute of Control Sciences of RAS

Astrakhan State Technical University

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V.A. Kotelnikov Institute of Radio Engineering and Electronics of RAS

Moscow Power Engineering Institute (MPEI)

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6th International Scientific Conference on INFORMATION, CONTROL, AND COMMUNICATION TECHNOLOGIES (ICCT-2022)

October 3-7, 2022
Astrakhan, Russian Federation

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Schedule of Conference ICCT-2022
03.10.2022 Monday

No.	Time	Speakers	Presentation
1	10.00 10.40	***I. Babushkin***, Head of the Astrakhan region ***Prof. I. Kvyatkovskaya***, Vice Rector of Astrakhan State Technical University ***Acad. D. Novikov***, Director of Institute of Control Science of RAS ***Acad. A. Bugaev,*** Chairman of Department of Vacuum Electronics, Moscow Institute of Physics and Technology ***A.m. A. Dvorkovich,*** Chairman of Department of Multimedia Technologies and Telecommunications, Moscow Institute of Physics and Technology ***Prof. M. Bulatov***, Director of Scientific and Technological Centre of Unique Instrumentation of RAS	Conference Opening
2	10.40 10.50	***Alexander Bugaev*** Russia	Welcome speech from the Russian Academy of Sciences
3	10.50 11.30	***Alexander Dvorkovich*** Russia	Perspective Global Maritime Distress and Safety System NAVDAT

4	11.30 12.00	**Coffee-break**	
5	12.00 12.40	***Mahmoud Reza Delavar*** Iran	Spatial data fusion for smart city management
6	12.40 13.20	***Konstantin Vytovtov*** Russia	Remote sensing of water pollution by oil products
14.30-20.30 Sessions			
20.30. Welcome party			
04.10.2022 Tuesday			
7	10.00 10.40	***Pavel Belov*** Russia	Wireless power transmission using new physical principles
8	10.40 11.20	***Vitold Pozhar*** Russia	Acousto-optics as a modern optical technology
9	11.20 11.40	**Coffee-break**	
10	11.40 12.20	***Rakesh Kumar*** Namibia	Modelling and analysis of cloud ccomputing ssystems using queuing models with correlated arrivals and correlated reneging
13.30-16.30 Sessions			
16.30. Excursion to the Astrakhan State United Historical, Architectural Museum-Reserve			
05.10.2022 Wednesday			
11	10.00 10.40	***Alexander Zeifman*** Russia	On the study of forward Kolmogorov system: the corresponding problems and bounds for inhomogeneous continuous-time Markov chains and models
12	10.40 11.10	***Kubatbek Talypov,*** Kyrgyzstan	Digital optics methods and their application for image processing

13	11.10 11.40	***Oleg Tretiakov*** Australia	Nucleation and Dynamics of Magnetic Solitons in Topological Materials
14	11.40 12.00	**Coffee-break**	
12.00 Excursion to K. Sagyrbaeva Museum in village Alttynzhar			
06.10.2022 Thursday			
10.00-17.10 Sessions			
17.10-17.40 Conference Closing			
17.40-21.00 Sport competitions			
07.10.2022 Friday			
10.00-19.00 Barbecue party			

Session 1. Scientific Instrumentation in Telecommunication and Control Systems
Subsession 1.1. Physical Devices and Techniques
(14.30-20.30, Monday 03.10.2022)
Chairmans Prof. K. Vytovtov, Dr. V. Batshev

1	14.30 14.50	***I.B. Kutuza[1],*** ***M.V. Danilychev[2],*** ***D.P. Egorov[2],*** ***B.G. Kutuza[2],*** ***O.V. Kravchenko[2]*** [1] Scientific and Technological Centre of Unique Instrumentation of the Russian Academy of Sciences, [2]Institute of Radio Engineering and Electronics. V.A. Kotelnikov of RAS	Reconstruction of Atmospheric Parameters from the Data of Joint Measurements in the Microwave and IR Ranges
2	14.50 15.10	***A.V. Anisimov,*** ***I. Sh. Khasanov*** Scientific and Technological Centre of Unique Instrumentation of RAS	Determination of the complex refractive index profile of a gradient-index thin film using surface plasmon resonance
3	15.10 15.30	***O.A. Kolganov,*** ***R.A. Egorov,*** ***A.V. Ilyinsky,*** ***I.Yu. Kinzhagulov,*** ***A.V. Fedorov*** University ITMO	Development of the design of the sensor and elements of software data processing of the dynamic indentation device
4	15.30 15.50	***K.A. Vytovtov[1],*** ***E.A. Barabanova[1],*** ***M.G. Ivanov[2],*** ***E.V. Shalimova[2]*** [1] V.A. Trapeznikov Institute of Control Science of RAS, [2] National Research University “Moscow Power Energy Institute”	Optical antenna with controlled pattern for atmospheric link of mobile air object
5	15.50 16.10	***A.V. Balabanov,*** ***A.M. Kasimov,*** ***A.A. Mamontova,*** ***A.A. Suhorukov,*** ***V.S. Bezmenov,*** ***A.A. Khitrovo,***	Development of Test Generator to Investigate Performances of Microfluidic Bistable Elements

		V.Y. Fateev V. A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences	
6	16.10 16.30	***V.V. Toporovsky[1],*** ***V.V. Samarkin[1],*** ***A. A. Skvortsov[1,2],*** ***A.V. Kudryashov[1],*** ***I.V. Galaktionov[1]*** [1]Sadovsky Institute of Geosphere Dynamics, [2]Moscow Polytechnic University	Characteristics of piezoelectric deformable mirror produced with laser ablation and resistance microwelding techniques
7	16.30 16.50	***Ya.A. Ilyushin*** Moscow State University named after M.V. Lomonosov	Propagation of polarized pulses of optical radiation in thin cloud layers
8	16.50 17.10	***N. L. Menshikh*** ***S. A. Fedorov*** ***R. V. Gilmutdinov*** Institute for Theoretical and Applied Electrodynamics of RAS	Application of Antenna – Lens System for Measurement of Bistatic Parameters of Materials
9	17.10 17.30	***N.I. Petrov,*** ***G.N. Petrova*** Scientific and Technological Centre of Unique Instrumentation of RAS	Physical mechanisms of generation of microwave and THz radiation in lightning discharge
10	17.30 17.50	***M. V. Marunin,*** ***N. V. Polikarpova*** Moscow State University named after M.V. Lomonosov	Two-dimensional phononic crystal based on fused silica with hexagonal symmetry
11	17.50 18.10	***N. Yu. Sivov*** ***A. Yu. Poroykov*** ***V. V. Pinchukov*** ***E. V. Shmatko*** National Research University “Moscow Power Energy Institute”	Computer simulation of the intrinsic parameters decalibration for the stereo system of video cameras
12	18.10 18.30	***N. Yu. Sivov*** ***A. Yu. Poroykov*** ***E. V. Shmatko*** National Research University “Moscow Power Energy Institute”	Application of the structured illumination method to assess the error of photogrammetric systems

13	18.30 18.50	***A.S. Beliaeva[1,2,3]***, ***V.I. Batshev[1,3]***, ***A.V. Guryleva[1,3]*** [1]Scientific and Technological Center of Unique Instrumentation, Russian Academy of Sciences, Moscow, Russia [2]Saint Petersburg State University of Aerospace Instrumentation, Saint-Petersburg	Design of the endoscope optical illumination system
14	18.50 19.10	***A.S. Sovlukov*** V.A. Trapeznikov Institute of Control Sciences of RAS	Microwave Method for Measurement of Water Content in a Dielectric Liquid independently on its Dielectric Permittivity
15	19.10 19.30	***A.I. Lyashenko[1]***, ***Yu.A. Goldin[2]***, ***E.M. Volodina[1]***, ***V.A. Kukushkina[1]*** [1]Scientific and Technological Centre of Unique Instrumentation of RAS [2]Institute of Oceanology, P.P. Shirshov RAS	Two-wavelength laser system on YAG: Nd3+ of blue-green range for lidar sounding of water areas
16	19.30 19.50	***V.A. Vagin,*** ***S. R. Kostyukovsky*** [1]Scientific and Technological Centre of Unique Instrumentation of RAS	Features of specialized pyrometers developed at STC UI of RAS
17	19.50 20.10	***V.A. Vagin,*** ***S. R. Kostyukovsky*** [1]Scientific and Technological Centre of Unique Instrumentation of RAS	Fourier spectrometer for remote pyrometry
18	20.10 20.30	***V.A. Vagin,*** ***A.I. Horohorin,*** ***I.A. Stupin*** Scientific and Technological Centre of Unique Instrumentation of RAS	Data Acquisition System for Registration of Nanosecond Pulse Signals

Subsession 1.2. Hyperspectral and acousto-optic methods, devices and systems
(10.00-12.50, Thursday 06.10.2022)
Chairmans Prof. V. Pozhar, Dr. A. Machikhin

1	10.00 10.20	***N.V. Polikarpova[1], V.E. Pozhar[2]*** [1] Moscow State University named after M.V. Lomonosov, [2] Scientific and Technological Centre of Unique Instrumentation of RAS	Frequency range of operation of the piezoelectric transducer of the acousto-optic filter
2	10.20 10.50	***N.V. Polikarpova, E.A. Dyakonov, I.K. Chizh*** Moscow State University named after M.V. Lomonosov	Investigation of the attenuation of ultrasound in a paratellurite crystal
3	10.50 11.10	***S.A. Titov, A.S. Machikhin, V.E. Pozhar, V.A. Lomonov*** Scientific and Technological Centre of Unique Instrumentation of RAS	Modeling the structure of the ultrasonic field in acousto-optic modulators
4	11.10 11.30	***M. I. Kupreychik[1] V. I. Balakshy[1,2] V. E. Pozhar[2]*** [1] Moscow State University named after M.V. Lomonosov, [2] Scientific and Technological Centre of Unique Instrumentation of RAS	Spatial Filtering of Optical Images in Acousto-Optic Cells Based on Biaxial Crystal
5	11.30 11.50	***M.G. Milkov[1], M.O. Sharikova[2], A.S. Machikhin[2]*** [1] Moscow State University named after M.V. Lomonosov, [2] Scientific and Technological Centre of Unique Instrumentation of RAS	Deflection of multifrequency radiation in a biaxial crystal
6	11.50 12.10	***M.M. Mazur[1], V.E. Pozhar[1,2], Yu.A. Suddenok[1]*** [1]VNII of Physical, Technical	Consideration of acoustic anisotropy in acoustooptical modulators designing

		and Radio Engineering Measurements (VNIIFTRI) [2] Scientific and Technological Centre of Unique Instrumentation of RAS	
7	12.10 12.30	***V.S. Khorkin[1]*,** ***S.N. Mantsevich[1]*,** ***M.S. Kuznetsov[2]*,** ***K.S. Zaramenskikh[2]*** [1] Moscow State University named after M.V. Lomonosov, [2] JSC "State Research and Design Institute of Rare Metal Industry "Giredmet"	Acousto-optic properties of a cubic KRS-5 crystal and tellurium-based amorphous glasses
8	12.30 12.50	***A.S. Belyaeva[1]*,** ***G.E. Romanova[2]*** [1] Scientific and Technological Centre of Unique Instrumentation of RAS [2]University ITMO	Analysis of the use of an acousto-optic polychromator in color reproduction tasks

Subsession 1.2. Hyperspectral and acousto-optic methods, devices and systems
(13.00-14.50, Thursday 06.10.2022)
Chairmans Prof. V. Pozhar, Dr. A. Machikhin

9	13.00 13.20	***O. Polshchikova[1]*,** ***A. Gorevoy[2]*,** ***A. Machikhin[3]*,** ***E. Stoykova[4]*** [1,2,3] Scientific and Technological Centre of Unique Instrumentation of RAS, [4]Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences	Features of the use of acousto-optic filters in off-axis multiwave digital holography
10	13.20 13.50	***P.A. Nikitin*** Scientific and Technological Centre of Unique Instrumentation RAS, Moscow Power Engineering Institute	Determining the Optimal Parameters of a Terahertz Radiation Acousto-Optic Deflector Using a Sectioned Ultrasound Transducer

11	13.50 14.10	***A.V. Guryleva[1,2],*** ***V.I. Gresys[3],*** ***D.S. Fomin[4],*** ***D.S. Fomin[4]*** ***A.A. Zolotukhina[2],*** ***V.I. Bukova[1,2],*** ***I. Cao[2]*** [1] Moscow State Technical University named after N.E. Bauman, [2]Scientific and Technological Centre of Unique Instrumentation RAS, [3]Peoples' Friendship University of Russia, [4]Perm Research Institute of Agriculture	Grains Impurity Assessment by Imaging Spectroscopy Means
12	14.10 14.30	***S.A. Titov,*** ***P.V. Zinin,*** ***A.M. Lomonosov,*** ***M.Yu. Popov*** Scientific and Technological Centre of Unique Instrumentation RAS	Ultrasonic Characterization of Superhard Carbon Nanomaterials
13	14.30 14.50	***I.V. Galaktionov,*** ***A.N. Nikitin,*** ***V.V. Toporovsky,*** ***J.V. Sheldakova,*** ***A.V. Kudryashov*** Institute of Geosphere Dynamics RAS	Automated adaptive optical system for laser beam shaping using spatial light modulator

Subsession 1.3. Optical instruments and methods
(13.30-15.30, Tuesday, 04.10.2022)
Chairmans Dr. I. Khasanov, Dr. P. Nikitin

1	13.30 13.50	***M.A. Vaganov*** ***V.I. Kazakov,*** ***V.V. Kitaev,*** ***A.S. Paraskun*** St. Petersburg State University of Aerospace Instrumentation	Emission spectra of metals experimental study by contactless optical spectroscopy methods
2	13.50 14.10	***T.S. Misnikova,*** ***M.A. Vaganov,***	Application of the method of laser-spark emission spectroscopy for the control

		V.F. Lebedev St. Petersburg State University of Aerospace Instrumentation	of technological processes in the mining industry
3	14.10 14.30	***V.I. Kazakov,*** ***A.S. Paraskun*** St. Petersburg State University of Aerospace Instrumentation	System for registration and processing of spatial characteristics of laser beams for detecting thermal convective flow
4	14.30 14.50	***N. I. Petrov*[1]** ***Yu. M. Sokolov*[1]** ***V. V. Stoiakin*[1]** ***V. A. Danilov*[1]** ***V. V. Popov*[2]** ***B. A. Usievich*[3]** [1] Scientific and Technological Centre of Unique Instrumentation RAS, [2] Moscow State University named after M.V. Lomonosov	Goos-Hanchen Shift in Subwavelength Gratings Enhanced by Surface Plasmon Resonance in the Infrared Range
5	14.50 15.10	***А.С. Мачихин*[1,2],** ***А.Ю. Поройков*[1],** ***М.О. Шарикова*[1,2]** [1] National Research University “Moscow Power Energy Institute”, [2] Scientific and Technological Centre of Unique Instrumentation RAS	Application of the digital image correlation method for endoscopic examinations
6	15.10 15.30	***P.S. Martyanov*** Scientific and Technological Centre of Unique Instrumentation RAS	Carbon monoxide recording with multi-channel alert capability and comparison with optical measurement methods

Session 2. Biomedicine information systems and biomedical Informatics (14.30-19.30 Monday 03.10.2022)

Chairmans Prof. A. Burlakov, Prof. I. Sysoev, Dr. Antsiperov

1	14.30 14.50	***V.A. Deryugina,*** ***I.A. Matveeva,*** ***I.A. Bratchenko*** Samara National Research University named after academician S.P. Korolev	Neural network classification of dermatological images

2	14.50 15.10	***A.V. Guryleva*[1,2]** ***A.V. Toldanov*[3]** ***A.S. Machikhin*[1]** ***V. Bukova*[1]** ***V. Svistushkin*[3]** ***Y. Kulikova*[1]** [1] Scientific and Technological Centre of Unique Instrumentation RAS, [2]Moscow State Technical University named after N.E. Bauman, [3] First Moscow State Medical University named after I.M. Sechenov	Microcirculatory perfusion imaging of the soft palate and tonsils
3	15.10 15.30	***A.G. Selyukov*[1],** ***A.B. Burlakov*[2,3],** ***A.V. Guryleva*[2,4],** ***V.I. Bukova*[2,4],** ***D.D. Khokhlov*[2],** ***E.V. Efremova*[5]** [1] Tyumen State University, [2] Scientific and Technological Centre of Unique Instrumentation RAS, [3] Moscow State University named after M.V. Lomonosov, [4] Moscow State Technical University named after N.E. Bauman, [5]LLC "NPO Sobsky fish-breeding plant"	Non-invasive study of the cardiovascular system of whitefishes in early ontogenesis
4	15.30 15.50	***A.A. Grishchenko*[1,2]** ***I.V. Sysoev*[1,2]** [1]Saratov State University N.G. Chernyshevsky, [2]Saratov branch of the Institute of Radio Engineering and Electronics. V.A. Kotelnikov of RAS	Testing and Comparing Connectivity Search Methods in Absence Epilepsy Models
5	15.50 16.10	***E.V. Sorokina,*** ***Yu.A. Khristoforova*** Samara National Research University S.P. Koroleva	Investigation of the Raman spectra of the skin of different parts of the body and different phototypes

			using various methods of spectrum normalization
6	16.10 16.30	***V.S. Bashirov,*** ***I.A. Matveeva*** Samara National Research University named after academician S.P. Korolev	Module for registration of human biomechanical parameters with a harvester of electricity
7	16.30 16.50	***I.V. Sysoev[1,2],*** ***T.M. Medvedev[1],*** ***L.V. Vinogradova[1]*** [1] Institute of Higher Nervous Activity and Neurophysiology of RAS, [2] Saratov National Research State University named after N.G. Chernyshevsky	Analysis of the connectivity between the cerebral hemispheres during a wave of spreading depression caused by epileptic seizures
8	16.50 17.10	***A.A. Kapustnikov[1,2],*** ***I.V. Sysoev[1,2],*** ***M.V. Sysoeva[1,3]*** [1] Saratov branch of the Institute of Radio Engineering and Electronics. V.A. Kotelnikov of RAS, [2]Saratov State Technical University named after Gagarina Yu.A, [3]Saratov National Research State University named after N.G. Chernyshevsky	Using different types of neuron models to model epilepsy
9	17.10 17.30	***Y.A. Kupriyanova,*** ***G.V. Zhikhareva,*** ***T.B. Mishenina,*** ***A.I. Bobrovskaya,*** ***I.V. Andreev*** National Research University “Moscow Power Energy Institute”	Selection of the regularization coefficient in solving the inverse problem of electrocardiography by high-frequency low-amplitude components of ECG signals
10	17.30 17.50	***Y.A. Kupriyanova,*** ***G.V. Zhikhareva,*** ***A.I. Bobrovskaya,*** ***I.V. Andreev*** National Research University “Moscow Power Energy Institute”	Approbation of the algorithm of physiological interpretation of the results of solving the inverse problem of electrocardiography using the model of the electrical activity of the heart

11	17.50 18.10	***D.A. Balakin*** National Research University "Moscow Power Energy Institute"	Analysis of electrocardiographic signals using a new method based on the principles of wavelet processing and Gauss-Hermit functions
12	18.10 18.30	***E.P. Altova,*** ***A.N. Rykov,*** ***I.F. Shishkov*** Moscow State University named after M.V. Lomonosov	Molecular structure of bioactive objects by gas-phase electron diffraction and quantum chemical calculation
13	18.30 18.50	***V.E. Antsiperov,*** ***V.A. Kershner*** Institute of Radio Engineering and Electronics them. V.A. Kotelnikov of RAS	A model for identifying objects in images based on the concept of a receptive field of neurons
14	18.50 19.10	***И.А. Кершнер[1],*** ***Ю.В. Обухов[1],*** ***М.В. Синкин[2,3]*** [1] Institute of Radio Engineering and Electronics them. V.A. Kotelnikov of RAS, [2]Scientific Research Institute of Emergency Medicine named after N.V. Sklifosovsky Department of Health of the city of Moscow, [3] Lomonosov Moscow State University of Medicine and Dentistry A.I. Evdokimova	Detection of epileptic activity in long-term signals of multichannel EEG monitoring
15	19.10 19.30	***M.V. Danilychev,*** ***G.K. Mansurov,*** ***V.E. Antsiperov,*** ***D.V. Churikov*** Institute of Radio Engineering and Electronics them. V.A. Kotelnikov of RAS	Analysis of blood pressure pulse wave data using the phase plane method

Session 2. Biomedicine information systems and biomedical Informatics (14.00-16.10 Thursday 06.10.2022)

Chairmans Prof. A. Burlakov, Prof. I. Sysoev

16	14.00 14.20	***S. A. Titov[1]*** ***L. A. Zykova[2]*** ***A. B. Burlakov[2]*** ***Chih C. Huang*** [1] Scientific and Technological Centre of Unique Instrumentation	Estimation of Blood Flow Velocity in the Heart of the Danio rerio Embryo Using Correlation of Ultrasonic Signals

		RAS, [2] Moscow State University named after M.V. Lomonosov	
17	14.20 14.50	***M.V. Volkov[1,2]***, ***N.B. Margaryants[1]***, ***D.I. Myalitsin[1]***, ***A.V. Potemkin[1]*** [1]University ITMO [2] Scientific and Technological Centre of Unique Instrumentation of RAS	Calculation of the trajectory and velocity of blood flow elements in zebrafish larva based on signal analysis using the phase correlation method
18	14.50 15.10	***A.Yu. Dolinina[1,2,3]***, ***M.V. Sysoeva[1,2]***, ***I.V. Sysoev[1,3]*** [1] Saratov Branch of Kotel'nikov Institute of Radioengineering and Electronics of RAS, [2] Yuri Gagarin State Technical University of Saratov, [3] Saratov State University	Detection of epileptic discharges based on the peculiarities of the time-frequency organization seizure
19	15.10 15.30	***D.A. Lachinova[1]***, ***G. van Luijtelaar[2]***, ***P. Ossenblock[3]***, ***I.V. Sysoev[1]*** [1] Institute of Higher Nervous Activity and Neurophysiology of RAS, [2] Centre of Cognition, Radboud University Nijmegen, [3] Eindhoven University of Technology	Temporal evolution of undirected couplings between cortical areas associated with spreading of pathological activity
20	15.30 15.50	***A.E. Gavlina,*** ***A.S. Veselov,*** ***I.A. Balandin,*** ***V.I. Batshev*** Scientific and Technological Centre of Unique Instrumentation of RAS	Development of an ophthalmic video system for image registration in stereomicroscopes
21	15.50 16.10	***M.A. Mishchenko[1]***, ***D.I. Bolshakov[1]***, ***I.V. Ushakov[1]***, ***V.V. Matrosov[1]***, ***I.V. Sysoev[1,2]***	Neuromorphic generator based on the phase locked loop system

		[1] Nizhny Novgorod State University, N.I. Lobachevsky, [2] Saratov National Research State University named after N.G. Chernyshevsky	

Session 3. Hardware and software for information and communication systems

(14.30-20.10, Monday, 03.10.2022)

Chairmans Prof. V. Vishnevsky, Dr. D. Kozyrev

1	14.30 14.50	***Ilia Peshkov*** ***Natalia Fortunova*** ***Irina Zaitseva*** Yelets State University I.A. Bunin	Determining the optimal geometry of planar antenna arrays for joint estimating the coordinates of two signal sources on azimuth
2	14.50 15.10	***O.M. Brekhov,*** ***E.O. Nikolaev*** Moscow Aviation Institute	Интегрированная модель отказоустойчивой спутниковой сети
3	15.10 15.30	***A. Ivchenko*** ***P. Izyumov*** Moscow Institute of Physics and Technology	AGMV Approach for Reduce Complexity of Classification Tasks
4	15.30 15.50	***A.A. Berezkin,*** ***D.S. Kukunin,*** ***R.V. Kirichek*** Bonch-Bruevich Saint-Petersburg State University of Telecommunications	Neural network coding in data compression systems in communication channels
5	15.50 16.10	***D.S. Kukunin,*** ***A.A. Berezkin,*** ***R.V. Kirichek*** Bonch-Bruevich Saint-Petersburg State University of Telecommunications	Asynchronous Address System Using Code Division Based on Maximum Length Sequences
6	16.10 16.30	***Д.Э. Баев,*** ***А.В. Боднар*** Donetsk National Technical University	Software system for embedding digital watermarks in video files
7	16.30 16.50	***R.R. Agambetov*** Astrakhan State Technical University	Conditions for the occurrence of attacks on information systems using methods of intellectual analysis
8	16.50	***K.A. Borisov,*** ***N.V. Davidyuk***	Analysis of existing methods for recognizing objects and

	17.10	Astrakhan State Technical University	events based on video stream data
9	17.10 17.30	***S.A. Yamashkin[1],*** ***E.O. Yamashkina[2],*** ***A.A. Yamashkin[3]*** [1] National Research Mordovia State University, [2] Institute of Information Technology, MIREA – Russian Technological University, 3 Geography Faculty, National Research Mordovia State University	Integration of Neural Network Models in Spatial Data Analysis Systems
10	17.30 17.50	***V. Vishnevsky,*** ***K. Vytovtov,*** ***E. Barabanova,*** ***E. Lesiv,*** ***S. Frolov,*** ***V. Buzdin,*** ***N. Kalmykov*** V. A. Trapeznikov Institute of Control Science	Physical Foundation of Hybrid Navigation System For Tethered High-Altitude Unmanned Platforms
11	17.50 18.10	***V. Vishnevsky,*** ***K. Vytovtov,*** ***E. Barabanova,*** ***S. Frolov,*** ***V. Buzdin,*** ***N. Kalmykov*** V. A. Trapeznikov Institute of Control Science	Modelling of UAV simulator for local navigation system of tethered high-altitude platforms
12	18.10 18.30	***V.Vishnevsky[1],*** ***Dharmaraja,*** ***Selvamuthu[2],*** ***V Rykov[3,4,5],*** ***D. Kozyrev[1,4],*** ***N. Ivanova[1,4]*** [1] V.A. Trapeznikov Institute of Control Sciences of RAS, [2] IIT Delhi, [3] Gubkin Oil & Gas Russian State University	Reliability modeling of a flight module of a tethered high-altitude telecommunication platform

		[4] Friendship University of Russia [5]Institute for Information Transmission Problems	
13	18.30 18.50	***V.M. Vishnevsky[1],*** ***R.N. Minnikhanov[2],*** ***I.V. Barsky[3],*** ***A.A. Larionov[1]*** [1] V.A. Trapeznikov Institute of Control Sciences of RAS, [2] State budgetary institution "Road Safety" [3] CJSC "SIMICON"	Development of a hybrid vehicle identification system based on video recognition and RFID
14	18.50 19.10	***E.A. Likhobabin[1],*** ***A.A. Ovinnikov[1],*** ***R.S. Goriushkin[2],*** ***P.B. Nikishkin[2],*** ***E.I. Khokhryakov[1]*** [1]Moscow Institute of Physics and Technology [2]Ryazan State Radio Engineering University	High Throughput FPGA Implementation of LDPC Decoder Architecture for DVB-S2X Standard
15	19.10 19.30	***A.V. Poltavsky*** V.A. Trapeznikov Institute of Control Science of RAS	Information model of the communication line of the control point with an unmanned aerial vehicle
16	19.30 19.50	***E.A. Barabanova[1],*** ***K.A. Vytovtov[1],*** ***A.N. Fedorovskaya[2]*** ***G.K. Vytovtov[2]*** [1] V.A. Trapeznikov Institute of Control Science of RAS, [2]Astrakhan State Technical University	Analysis of Insertion Loss and Crosstalk in Multistage Photonic Switches
17	19.50 20.10	***K.A. Vytovtov,*** ***E.A. Barabanova,*** ***T.Ya. Gladkikh,*** ***V.A. Trapeznikov,*** ***A. L. Kulina,*** ***G. K. Vytovtov*** V.A. Trapeznikov Institute of Control Science of RAS	Remote monitoring of water pollution with oil products in the visible range by using UAV multispectral camera

Session 3. Hardware and software for information and communication systems
(13.30-16.10, Tuesday, 04.10.2022)
Chairmans Prof. V. Vishnevsky, Dr. D. Kozyrev

18	13.30 13.50	***V.A. Bogatyrev[1],*** ***S.V. Bogatyrev[2],*** ***A.V. Bogatyrev[2]*** [1] Saint-Petersburg State University of Aerospace Instrumentation, [2]JSC NEO Saint Petersburg Competence Center	Control of Multipath Transmissions in the Nodes of Switching Segments of Reserved Paths
19	13.50 14.10	***M. E. Belkin[1],*** ***N. Smirnov[1],*** ***V. Andreev[2],*** ***A. S. Sigov[1]*** [1] MIREA-Russian Technological University, [2] MPSU-Moscow Pedagogical State University	A Bidirectional High-Efficient Optical Interconnect for New Generation of Communication and Remote Control Systems
20	14.10 14.30	***V.A. Bogatyrev[1],*** ***S.V. Bogatyrev[2],*** ***A.V. Bogatyrev[2]*** [1] Saint-Petersburg State University of Aerospace Instrumentation, [2] JSC NEO Saint Petersburg Competence Center	Choosing the Discipline of Restoring Computer Systems with Acceptable Degradation with Consolidation of Node Resources Saved After Failures
21	14.30 14.50	***E.A. Barabanova[1],*** ***K.A. Vytovtov[1],*** ***I.S. Shesterikova[2]*** [1]V.A. Trapeznikov Institute of Control Science of RAS, [2] National Research University “Moscow Power Energy Institute”	Equivalent electrical circuit of a photonic switch and a method for calculating its speed
22	14.50 15.10	***A. M. Sokolov,*** ***A. A. Larionov,*** ***A. A. Mukhtarov,*** ***I. A. Fedotov*** V.A. Trapeznikov Institute of Control Sciences of RAS	Architecture of a distributed parallel computing system using docker cluster
23	15.10 15.30	***M. P. Farhadov,*** ***O. D. Kuprikov,*** ***D. V. Komanich***	Hydroacoustic signal characteristics researching for an underwater

		V.A. Trapeznikov Institute of control science RAS	communication channel development
24	15.30 15.50	***O. Demidenko*** F. Skorina Gomel State University	Techniques of adapting a calculating process to operating load in nodes of a local area network
25	15.50 16.10	***D. I. Isaenko,*** ***E. A. Logvinova,*** ***A. V. Pachin,*** ***B. K. Reznikov*** The Bonch-Bruevich Saint Petersburg State University of Telecommunicaions	Reducing traffic delays in data transmission networks of cyber-physical systems: current state and promising methods

Session 3. Hardware and software for information and communication systems (10.00-12.50, Thursday, 06.10.2022)
Chairmans Prof. V. Vishnevsky, Dr. D. Kozyrev

26	10.00 10.20	***L.K. Kont,*** ***A.S. Surkov*** Astrakhan State Technical University	Analysis of switching technologies in all-optical communication networks
27	10.20 10.50	***A.I. Petrov*** Astrakhan State Technical University	MOCN technology, a way to solve the shortage of radio frequencies
28	10.50 11.10	***D. S. Bondarenko,*** ***N.S. Maltseva*** Astrakhan State Technical University	Model for calculating the parameters of the fifth generation network
29	11.10 11.30	***N.S. Maltseva,*** ***A.V. Osovsky,*** ***D.V. Kutuzov*** Astrakhan State Technical University	Analysis of traffic routing algorithms in sensor networks
30	11.30 11.50	***K. P. Voronina,*** ***O.N. Pischin*** Astrakhan State Technical University	Investigation of the efficiency of noise immunity of the radio channel of aviation radio communication
31	11.50 12.10	***V.A. Nesterov,*** ***H.S. Maltseva*** Astrakhan State Technical University	Increasing the bandwidth of a digital terrestrial television signal using the NOMA method

32	12.10 12.30	***K.V. Petrova,*** ***O.N. Pischin*** Astrakhan State Technical University	Improving the efficiency of studying the design of radio relay systems
33	12.30 12.50	***R.R. Azhmuratova,*** ***N.S. Maltseva*** Astrakhan State Technical University	The use of wireless sensor networks to improve the reliability of gas processing complex facilities

Session 4. Technical robotics
(14.30-18.30 Monday, 03.10.2022)
Chairmans Prof. E. Barabanova, Dr. O. Pishchin

1	14.30 14.50	***A. V. Rybakov,*** ***Yu. A. Golovko,*** ***N.A. Vybornov,*** ***E.Yu. Stepanovich*** Astrakhan State University	The method of recognition and determination of the spatial position of tomato fruits for robotic harvesting
2	14.50 15.10	***A. V. Rybakov,*** ***A. M. Kandil,*** ***V. G. Ilichev,*** ***R.G. Djambekov*** Astrakhan State University	Providing energy weapons for a marine unmanned multi-purpose platform with catamaran and trimaran type hulls
3	15.10 15.30	***A. A. Dubelschikov[1],*** ***T. G. Tsoy[2], Y. Bai[3],*** ***M. M. Svinin[3],*** ***E. A. Magid[1,2]*** [1]National Research University Higher school of economics, [2]Institute of Information Technology and Intelligent Systems, [3]College of Information Science and Engineering	Intelligent System Concept of an IoT Cameras Network Application for an Unmanned Aerial Vehicle Control via a Graphical User Interface
4	15.30 15.50	***D. T. Imameev[1],*** ***A. A. Zakiev[1], H. Li[2],*** ***E. A. Martínez-García[3],*** ***E. A. Magid[1,4]*** [1]Institute of Information Technology and Intelligent Systems, [2]Department of Instrument Science and Engineering, [3]Institute of Engineering and Technology, [4]National Research University Higher school of economics	Modelling Autonomous Perpendicular Parking Procedure for Car-like Robot Avrora Unior in Gazebo Simulator

5	15.50 16.10	***N.A. Mostakov,*** ***N.V. Goloburdin,*** ***K.A. Kulagin*** ***A.N. Migachev*** V. A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences	UAV-based drowning rescue system
6	16.10 16.30	***V.S. Bakaev,*** ***N.V. Goloburdin,*** ***R.O. Anisimov,*** ***K.A. Kulagin*** V. A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences	Trajectory planning of a manipulator robot in joints space
7	16.30 16.50	***K.A. Kulagin,*** ***N.V. Goloburdin,*** ***A.N. Migachev,*** ***T.Y. Gladkikh*** V. A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences	UAV Group Operator Decision Support System
8	16.50 17.10	***R.O. Anisimov,*** ***N.V. Goloburdin,*** ***K.A. Kulagin,*** ***Y.D. Vorobiev*** V. A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences	Visual Localizationt System Algorithm for UAV
9	17.10 17.30	***G.K. Tevyashov*** V. A. Trapeznikov Institute of Control Sciences of RAS	The use of a mobile robotic complex in a system of closed water supply devices
10	17.30 17.50	***L.Y. Korolev*** National Research Mordovia State University	Analysis of algorithms for filtering the orientation parameters of unmanned aerial vehicles under changing external conditions
11	17.50 18.10	***Vilmen Abramian*** ***Andrey Larionov*** V. A. Trapeznikov Institute of Control Sciences of RAS	Numerical research of the probability of radio frequency identification of tags using a UAV-mounted RFID Reader
12	18.10 18.30	***V. M. Vishnevsky,*** ***A.N. Gorkov,*** ***G.N. Akobadze***	Noninertial Control of Power Cable Advanced to Tethered Unmanned Air Vehicle

		V.A. Trapeznikov Institute of Control Sciences of RAS	

Session 5. Reliability, diagnostics and non-destructive testing
(13.30-16.10 Tuesday, 04.10.2022)
Chairmans Dr. S. Titov, Dr. A. Poroykov

1	13.30 13.50	***А.А. Тутуров*[1],** ***Е.В. Юркевич*[1],** ***Л.Н. Крюкова*[1],** ***Э.С. Слепцов*[2],** ***О.Г. Андрианова*[1,3]** [1] V.A. Trapeznikov Institute of Control Sciences of RAS [2]JSC VNIIEM Corporation [3]Research Institute of Advanced tech, Mexico	Construction of automated scenarios of emergency situations for spacecraft within the framework of the concept of detection, localization of failures and restoration of operability
2	13.50 14.10	***V.V. Malyy*** ***A.V. Fedorov*** ***A.S. Kostyukhin*** ***I.Y. Kinzhagulov*** University ITMO	Development of Technology for Automated Non-Destructive Quality Testing of Soldered Joints of Heat Exchangers
3	14.10 14.30	***D.O. Kuzivanov*** ***K.A. Stepanova*** ***A.V. Fedorov*** ***I.Y. Kinzhagulov*** ***A. Kovalevich*** University ITMO	Acoustic Emission Control of Fatigue Destruction of Thin Aluminium Alloy Structures
4	14.30 14.50	***I.E. Alifanov*[1],** ***A.V. Fedorov*[1],** ***V.A. Bychernok*[1,2],** ***I.V. Berkutov*[2]** [1] University ITMO, [2] Institute of Science ICC ECT	Acoustoelasticity Method with Thermo-Optical Generation of Ultrasonic Vibrations for Controlling Residual Stresses in Special Pipes
5	14.50 15.10	***S. Yu. Krasnoborodko*** ***B. K. Medvedev*** ***Y. E. Vysokikh*** ***N. A. Filippov*** ***V. V. Paramonov*** ***A. V. Andreev*** Scientific and Technological Centre of Unique Instrumentation of RAS	The Study of Deposition Process of the TiN coatingfor Atomic Force Microscopy Cantilevers
6	15.10 15.30	***A.V. Dyachenko,*** ***A.G. Kokuev***	Application of microelectromechanical

		Astrakhan State Technical University	accelerometers in control systems and diagnostics of vibrations and oscillations
7	15.30 15.50	***E.A. Pavlukhin*** University ITMO	Development of a technique for ultrasonic testing of workpieces from carbon-carbon composite materials
8	15.50 16.10	***A.A. Zolotukhina[1,3], A.V. Guryleva[1,2], A.S. Machikhin[2], A. N. Nikitin[3]*** [1] Moscow State Technical University named after N.E. Bauman, [2] V.A. Trapeznikov Institute of Control Sciences of RAS, [3] Institute of Geosphere Dynamics named after Academician M.A. Sadovsky RAS	Approval of rigid endoscopes using a Shack-Hartmann sensor

Session 5. Reliability, diagnostics and non-destructive testing
(10.00-14.10 Thursday, 06.10.2022)
Chairmans Dr. S. Titov, Dr. A. Poroykov

9	10.00 10.20	***A.S. Sovlukov[1], V.V. Yatsenko[2], A.V. Kaychenov[2]*** [1]V.A. Trapeznikov Institute of Control Sciences of RAS, [2]Murmank State Technical University	Radiofrequency Resonator Method for Measurement of a Liquid Level in a Reservoir
10	10.20 10.50	***V.A. Bogatyrev[1], S.V. Bogatyrev[2] A.V. Bogatyrev[2]*** [1] Saint-Petersburg State University of Aerospace Instrumentation, [2]JSC NEO Saint Petersburg Competence Center	Reliability and timeliness of servicing requests in infocommunication systems, taking into account the physical and information recovery of redundant storage devices
11	10.50 11.10	***G.A. Kushner*** Astrakhan State Technical University	Implementation of Software for Technical Diagnostics of Shafts Based on Vibration Analysis

12	11.10 11.30	***I. V. Bogachkov[1],*** ***N. I. Gorlov[2],*** ***T.I. Monastyrskaya[2]*** [1] Department of Communications and Information Security, [2] Siberian State University of Telecommunications and Computer Science	Types and applications of fiber-optic sensors based on the Mandelstam-Brillouin scattering principle
13	11.30 11.50	***S.V. Muravyov,*** ***D.C. Nguyen*** National Research Tomsk Polytechnic University	Weld defects automatic visual recognition by combined application of Canny edge detector and interval fusion with preference aggregation
14	11.50 12.10	***D.Yu. Rusakov[1],*** ***A.S. Machikhin[2]*** [1] JSC ONPP Tekhnologiya name after A.G. Romashina, [2] National Research University "Moscow Power Energy Institute"	Разработка методики оценки надежности сотовых конструкций из ПКМ по результатам активного теплового контроля
15	12.10 12.30	***I.Sh. Khasanov,*** ***S.A. Lobastov,*** ***A.V. Anisimov*** Scientific and Technological Centre of Unique Instrumentation of the RAS	Optical characterization of diffusion transition layers in thin films using surface plasmon resonance spectroscopy
16	12.30 12.50	***P.N. Shkatov*** Scientific and Technological Centre of Unique Instrumentation of the RAS	Measurement of changes in electrical resistivity of flat samples under uniaxial tension
17	12.50 13.10	***A.S. Machikhin[1],*** ***IN AND. Batshev[1,2],*** ***A.V. Kryukov[1,2],*** ***D.D. Khokhlov[1],*** ***I.A. Balandin[1],*** ***A.S. Belyaeva[1,3],*** ***A.M. Perfilov[4]*** [1]Scientific and Technological Centre of Unique Instrumentation of the RAS, [2]Moscow State Technical University named after N.E. Bauman, [3]St. Petersburg State University of Aerospace Instrumentation,	Development of a video endoscope with an additional channel for recording spectral images

		[4] JSC NPO Energomash	
18	13.10 13.30	***S.A. Titov[1]*,** ***Y.S. Petronyuk[1,2]*,** ***V.M. Levin[2]*,** ***A.N. Bogachenkov[2]*** [1] Scientific and Technological Centre of Unique Instrumentation of RAS, [2] N.M. Emanuel Institute of Biochemical Physics of RAS	Formation of ultrasonic signals in layered objects with abrupt changes in acoustic impedance
19	13.30 13.50	***K.M. Bulatov,*** ***P.V. Zinin*** [1]Scientific and Technological Centre of Unique Instrumentation of the RAS	Multispectral camera for fast measurement of high temperature distribution of a heated body
20	13.50 14.10	***S.A. Kargin[1]*,** ***A.D. Ibadullaev[1]*,** ***P.A. Dorokhov[2]*** [1]Astrakhan State Technical University, [2]Russian Maritime Register of Shipping	Method for calculating thermodynamic processes in the organization of a gas-steam cycle in an internal combustion engine

Session 6. Control and automation systems
(14.30-20.10, Munday 03.10.2022)
Chairmans Prof. V. Shurshev, Dr. E. Chertina

1	14.30 14.50	***A.N. Serov,*** ***A.A. Shatokhin,*** ***N.A. Serov*** National Research University "MPEI"	Application of the "worst case" method to assess the effect of ADC nonlinearity on the RMS measurement error
2	14.50 15.10	***V.V. Konyashov*** ***A.S. Sergeev*** ***A.V. Fedorov*** ITMO University	Development of an algorithm for searching for a mark, determining its center and shift from the initial position for software and hardware processing of signals for video inspection of a vision system.
3	15.10 15.30	***Yahui Liu,*** ***Xingfen Wang,*** ***Shijie Wang***	Multi-scale Price Forecasting Based on Temporal Convolutional Network

		Beijing Information Science & Technology University	
4	15.30 15.50	***Yahui Liu,*** ***Xingfen Wang,*** Beijing Information Science & Technology University	Short-term Power Load Forecasting Based on Temporal Convolutional Network
5	15.50 16.10	***A.N. Seliverstov,*** ***D.V. Nemchinov*** Астраханский государственный технический университет	Analysis of emergency risk assessment methods at the catalytic reformer
6	16.10 16.30	***Ya.K. Dyakonova*** Astrakhan State Technical University	Field service and mobile workforce management systems (WFM/FSM): market trends, competitive landscape and IT drivers
7	16.30 16.50	***D.V. Kornienko,*** ***S.V. Mishina*** Yelets State University I.A. Bunin	Ways to increase the bandwidth of distributed telecommunication systems of highly available cloud data storage
8	16.50 17.10	***E.V. Devil,*** ***S.O. Gordienko*** Astrakhan State Technical University	The task of stimulating consumer behavior as a mechanism for managing the purchasing trajectory
9	17.10 17.30	***Yuhao Cong[1],*** ***Shan Wu[2]*** [1]Shanghai Customs College, [2]Shanghai University	Estimating parameters of permanent magnet synchronous motor via finite element methods
10	17.30 17.50	***Yuhao Cong[1],*** ***Menglin Li[2]*** [1]Shanghai Customs College, [2]Shanghai University	A numerical method for feedback stabilization of linear delay systems with applications
11	17.50 18.10	***Xin Jin,*** ***Guang-Da Hu*** Shanghai University	A numerical algorithm for estimating the region of attraction of nonlinear systems with applications in power systems
12	18.10 18.30	***Guang-Da Hu[1],*** ***Xin Jin[2]*** Shanghai University	Feedback Stabilization for Velocity Regulation of Permanent Magnet Synchronous Motors

13	18.30 18.50	***D. D. Dimitryuk,*** ***A. V. Bodnar*** Donetsk National Technical University	Web application for developing newscast events
14	18.50 19.10	***N.A. Aksionova,*** ***O.M. Demidenko,*** ***A.V. Varuyeu*** F. Skorina Gomel State University	Implementation of the student identification system by the Viola-Jones method
15	19.10 19.30	***К.С. Задиран*** ***М.В. Щербаков*** Волгоградский государственный технический университет	Специализированный фреймворк для прогнозирования остаточного ресурса оборудования
16	19.30 19.50	***S. Dragunov*** ***A. Matochina*** ***K. Kuturkin*** Volgograd state technical university	Method of synthesis of geometric model of assembling components of a technical system with requirements included, by exoskeleton example
17	19.50 20.10	***Yu.A. Lezhnina[1],*** ***A.B. Abubakirov[2],*** ***I.K. Gaipov[2],*** ***N.K. Eshmuratov[2]*** [1]MIREA - Russian Technological University, [2]Karakalpak State University named after Berdakh	Monitoring of asymmetric values and parameters of electric networks

Session 6. Control and automation systems
(13.30-15.50, Tuesday 04.10.2022)
Chairmans Prof. V. Shurshev, Dr. E. Chertina

19	13.30 13.50	***Zheng Wang,*** ***Yuhao Cong*** Shanghai Customs College	Output feedback stabilization of linear systems with multiple delays using model reduction methods
20	13.50 14.10	***I.A. Brokarev[1],*** ***S.V. Vaskovsky[2],*** ***M.P. Farkhadov[2]*** [1] Russian State University of Oil and Gas (National Research University) named after I.M. Gubkin,	Current Approaches to Determination of Energy Characteristics and Component Composition of Natural Gas

		[2] V.A. Trapeznikov Institute of Control Sciences of RAS	
21	14.10 14.30	***I.M. Molotov[1,2]*,** ***A.I. Schastlivtsev[2]*,** ***O.M. Protalinsky***[1] National Research University "Moscow Power Energy Institute", [2] Joint Institute for High Temperatures of RAS	Simulation of the technological process of hydrogen storage of solar energy in an autonomous microgrid
22	14.30 14.50	***A. A. Khitrovo*** V. A. Trapeznikov Institute of Control Sciences of RAS	Positional turbine pneumatic actuator with jet control system
23	14.50 15.10	***A. A. Khitrovo*** V. A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences	Possibilities of using piezoelectric converters to produce "green" energy
24	15.10 15.30	***И. М. Исмаилов[1]*,** ***М. М. Исаев[1]*,** ***Н. М. Хасаева[2]*** [1] Institute of Management Systems at the National Academy of Sciences of Azerbaijan, Baku, Azerbaijan, [2]Azerbaijan Technical University, Baku,Azerbaijan	Синтез системы управления на основе нечеткой логики
25	15.30 15.50	***M. M. Isayev[1]*,** ***M. B. Mammadova[1]*,** ***N. M. Khasayeva[2]*** [1] Institute of Management Systems at the National Academy of Sciences of Azerbaijan, Baku, Azerbaijan, [2]Azerbaijan Technical University, Baku, Azerbaijan	Evaluation of the Accuracy of The Information and Measurement System Under Test

Session 6. Control and automation systems
(14.00-16.30, Thursday 06.10.2022)
Chairmans Prof. V. Shurshev, Dr. E. Chertina

26	14.00 14.20	***F. F. Pashchenko,*** ***S. V. Gulyaev,*** ***A. F. Pashchenko,*** ***L. D. Khizhinskaya*** V. A. Trapeznikov Institute of Control Sciences of RAS	Simulation of the gas production process at the field under restrictions on the flow rate
27	14.20 14.50	***A. V. Andryushin[1]***	Selection of the composition of the included generating

		E. K. Arakelyan[1] ***F. F. Pashchenko[2]*** ***A. V. Neklyudov[1]*** ***J. Y. Yagupova[1]*** ***N. S. Dolbikova[1]*** [1] National Research University "Moscow Power Energy Institute", [2] V. A. Trapeznikov Institute of Control Sciences of RAS	equipment considering the reliability factor
28	14.50 15.10	***J. L. Ordoñez Ávila[1],*** ***E. R. Torres Maldonado[2],*** ***I. A Magomedov[3]*** [12] Universidad Tecnológica Centroamericana, [3]Kadyrov Chechen State University	Water generation based on condensation controlled by gray scale and artificial vision
29	15.10 15.30	***Daharnis Daharnis,*** ***Zadrian Ardi,*** ***Abdul Halim Ade*** Universitas Negeri Padang	The Mobile-Based Model of Cooperation between School Personnel and Parents for Optimising the Post-Global Pandemic Learning Process
30	15.30 15.50	***E.M. Baranova,*** ***A.N. Baranov*** Tula State University	Process control in terms of reduction number of controlled parameters
31	15.50 16.10	***E.M. Baranova,*** ***A.N. Baranov*** Tula State University	Automated production process control complex
32	16.10 16.30	***D.A. Skorobogatchenko[1],*** ***A.I. Frolovichev[2],*** ***A.A. Sokolov[1],*** ***Yu.M. Vlasova[1]*** [1] Volgograd State Technical University, [2] Russian University of Transport	Simulation of facilities that ensure adaptive functioning of urban street and road network

Session 7. Digital ecosystems, production and logistics management
(13.00-17.10, Thursday 06.10.2022)
Chairmans Prof. A. Khanova, Dr. E. Chertina

1	13.00 13.20	***A. V. Rozhnov*** V. A. Trapeznikov Institute of Control Sciences of RAS	Integration Components of Assistive Technologies: New Opportunities of Using Stigmergia
2	13.20 13.50	***A. V. Rozhnov*** V. A. Trapeznikov Institute of Control Sciences of RAS	An Overview of Integration Components of Assistive Technologies and their Applications
3	13.50 14.10	***D.V. Druchevsky,*** ***A.V. Bodnar*** Donetsk National Technical University	Theoretical analysis of the essence and consequences of the digital economy
4	14.10 14.30	***O.V. Kudryavtseva*** Astrakhan State University of Architecture and Civil Engineering	The development of digital technologies in the construction industry
5	14.30 14.50	***O.V. Kudryavtseva*** Astrakhan State University of Architecture and Civil Engineering	Application of digital technologies in the fishing industry
6	14.50 15.10	***O.V. Kudryavtseva,*** ***K.A. Karamuldaeva*** Astrakhan State University of Architecture and Civil Engineering	The role of digital technologies in economic activity
7	15.10 15.30	***O.V. Blinova,*** ***M.P. Farhadov*** V. A. Trapeznikov Institute of Control Sciences of RAS	Development of a portal to help organize temporary wireless networks
8	15.30 15.50	***O. G. Geliver,*** ***D.B. Ermashkevich*** Belarusian Research Institute of Transport "Transtechnika"	Proposals for the introduction of digitalization in the system for recording incidents in the implementation of transport activities in the Republic of Belarus
9	15.50 16.10	***O. M. Protalinsky[1]*** ***I. O. Bondareva[2]*** ***A. A. Khanova[2]*** ***E. T. Nesterova[2]*** National Research University	Control of the Organizational System Configuration in the Context of Digital Transformation

		"Moscow Power Energy Institute", Astrakhan State Technical University	
10	16.10 16.30	***V.V. Sivov*** ITMO University	Comparison of key software products for business analytics in the banking sphere
11	16.30 16.50	***V.V. Sivov*** ITMO University	Formation and justification of the choice of the architecture of systems business intelligence in the banking sector
12	16.50 17.10	***Daharnis Daharnis, Zadrian Ardi, Abdul Halim Ade*** Universitas Negeri Padang	The Mobile-Based Model of Cooperation between School Personnel and Parents for Optimising the Post-Global Pandemic Learning Process

Session 8. Methods of mathematic modeling of physical processes and materials for infocommunication systems

Subsession 8.1. Materials for infocommunication systems

(10.00-15.10, Thursday 06.10.2022)

Chairmans A.m. I. Semchenko, Dr. I. Khasanov

1	10.00 10.20	A***. I. Semenikhin, D. V. Semenikhina, Yu. V. Yukhanov,*** Institute of Radioengineering Systems and Control	Formation of Multilobe Bistatic Scattering Diagrams of Cylindrical Coding Anisotropic Metasurfaces
2	10.20 10.50	A***. I. Semenikhin , D. V. Semenikhina, Yu. V. Yukhanov*** Institute of Radioengineering Systems and Control	Anisotropic 2-bit Low-RCS Meta-coatings with Improved Diffusion Scattering
3	10.50 11.10	***D. Yu. Matveev, A. V. Abrashkin*** Astrakhan State University	The Surface Structure and Magnetic Properties of Amorphous and Nanocrystalline Microwires Based on an Iron Alloy of Multicomponent Composition
4	11.10 11.30	***A.G. Cherevko[1], A.S. Krygin[1].***	Flexible, Eco-Friendly Graphene Resistive Dipole

		R.A. Soots[2], ***I.V. Antonova[2,3]*** [1] Siberian State University of Telecommunications and Informatics, [2] Institute of Semiconductor Physics SB RAS	for G5 standard with J shaped balancing system
5	11.30 11.50	***Ali A. Sallal[1]*** ***Mohammed Saleh Ali Muthanna[2]*** [1]Bilad Alrafidain University College, Al-Rafidain University College, Diyala, Iraq [2]Southern Federal University	Enhancement Optical Properties of Carboxymethyl Cellulose Biopolymer Composite Films Doped with Chromium Chloride
6	11.50 12.10	***Yu.V. Nikityuk[1],*** ***A.N. Serdyukov[1],*** ***I. Yu. Aushev[2]*** [1]Gomel State University named after Francysk Skaryna, Belarus, [2]University of Civil Protection of the Ministry of Emergency Situations of the Republic of Belarus	Optimization of the Parameters of Laser Cleaving of Two-Layer Structures from Single-Crystal Silicon and glass using a genetic algorithm
7	12.10 12.30	***S. A. Khakhomov[1],*** ***A. L. Samofalov[1],*** ***Yu.V. Nikityuk[1],*** ***I. V. Semchenko[1, 2],*** ***I. Yu. Aushev[3]*** [1]Gomel State University named after Francysk Skaryna, Belarus, [2]State Research and Production Association "Optics, Optoelectronics and Laser Technology", Belarus, [3]University of Civil Protection of the Ministry of Emergency Situations of the Republic, Belarus	Optimization of Metamaterial Parameters Based on U-shaped Elements in the DesignXplorer Module of ANSYS Workbench
8	12.30 12.50	***I. V. Semchenko[1, 2],*** ***E. D. Piskunova[1],*** ***A. L. Samofalov[1]*** [1]Francissk Skaryna Gomel State University, Belarus [2]State Research and Production Association "Optics, Optoelectronics and Laser Technology", Belarus	Modeling and analysis of a DNA-like electrical circuit

9	12.50 13.10	***I. V. Semchenko[1, 2]*,** ***A. L. Samofalov[1]*,** ***A.Yu. Kravchenko[1]*** [1]Gomel State University named after Francysk Skaryna, Belarus, [2]State Research and Production Association "Optics, Optoelectronics and Laser Technology", Belarus	Design of a weakly reflective absorbing metamaterial based on planar U-shaped resonators
10	13.10 13.30	***K. V. Cherkasov,*** ***S. A. Meshkov,*** ***M. O. Makeev*** Bauman Moscow State University	Research of resonant-tunneling diodes' spacer layers' thickness impact on their functional parameters and functional parameters of balanced frequency mixer based on these diodes
11	13.30 13.50	***I. A. Fanyaev[1]*,** ***I. A. Faniayeu[2]*,** ***S. A. Khakhomov[1]*** [1]Francisk Skorina Gomel State University, [2]University of Gothenburg	Switchable cylindrical hyperlens for THz range
12	13.50 14.10	***A.B. Bogomolov[1]*,** ***P.V. Zinin[1]*,** ***A.S. Galkin[2]*** [1]Scientific and Technological Centre of Unique Instrumentation of the RAS, [2] TISNUM	Reasons for the regression of the fluorescent properties of graphite-like carbon nitride
13	14.10 14.30	***Y. V. Mantrova[1]*** ***I. B. Kutuza[2]*** ***P. V. Zinin[2]*** ***A. A. Bykov[2]*** [1] Central Aerohydrodynamic Institute named after Professor N. E. Zhukovsky, [2] V. A. Trapeznikov Institute of Control Sciences of RAS	Measurement of the Emissivity and Temperature Distributions of Graphite-Like Structures Laser Heated in a Diamond Anvil Cell
14	14.30 14.50	***T. V. Blagova[1,2]*,** ***I. Sh. Khasanov[1]*** [1] Scientific and Technological Centre of Unique Instrumentation of RAS,	Influence of the angular and temporal spectrum of a pseudo-thermal light source on the quality of ghost imaging

		[2] Bauman Moscow State Technical University	
15	14.50 15.10	***Ya. A. Eliovich[1,2]*** ***V.A. Barat[3]*** ***V.V. Bardakov[3]*** ***A.Yu. Marchenkov[3]*** ***D.D. Khokhlov[3]*** ***D.A. Zhgut[3]*** [1] FSRC "Crystallography and Photonics" RAS [2] NRC "Kurchatov Institute" [3] National Research University "Moscow Power Energy Institute"	Predictive Analysis of Structural Changes in Paratellurite Crystals Using the Acoustic Emission Method

Subsession 8.2. Methods of mathematic modeling of physical processes in optics and radiolocation, R-functions, atomic functions, wavelets, fractals and chaos
(09.30-16.30 Thursday 06.10.2022)
Chairmans Prof. A. Zeifman, Prof. V. Kravchenko, Prof. A. Bogolubov

1	09.30 09.50	***V.F. Kravchenko,*** ***Ya.Yu. Konovalov,*** ***E.A. Ternovoy*** Bauman Moscow State University	Application of wavelets based on convolutions of atomic functions with a rectangular impulse to the problem of image compression
2	09.50 10.10	***V.V. Akhiyarov*** Institute of Radio Engineering and Electronics them. V.A. Kotelnikov of RAS	Generalization of the physical theory of diffraction to the case of excitation of a perfectly conducting wedge by a cylindrical wave
3	10.10 10.30	***V.V. Akhiyarov*** Institute of Radio Engineering and Electronics them. V.A. Kotelnikov of RAS	Calculation of the field scattered at the junction of two materials
4	10.30 10.50	***A. A. Glebova*** Moscow Pedagogical State University	Differential invariants and symmetries of the generalized Leibenson equation
5	10.50 11.10	***A. S. Bugaev,*** ***V. M. Agafonov,*** ***A. S. Shabalina***	Mathematical Model of the Hydrodynamic Noise in the

		Moscow Institute of Physics and Technology	Electrochemical Microsystems
6	11.10 11.30	***A. S. Sipin,*** Vologda State University	Random walk on balls for the Neumann boundary value problem
7	11.30 11.50	***P. Korolenko[1,2],*** ***A. Zotov[1]*** [1]Lomonosov Moscow State University, [2]P.N. Lebedev Physics Institute, Russian Academy of Sciences	Influence of statistical characteristics of speckle-like wave fields on their optical properties
8	11.50 12.10	***M. M. Shusharin,*** ***I. E. Mogilevsky,*** ***A N Bogolyubov*** Lomonosov Moscow State University	Study of the singularity of the electromagnetic field in an ogival waveguide with reentrant edges
9	12.10 12.30	***V. I. Odintsov[1],*** ***P. V. Korolenko[1,2],*** ***V. I. Mokhov[1],*** ***O. M. Vokhnik[1]*** [1]Faculty of Physics M. V. Lomonosov Moscow State University [2]P. N. Lebedev Physical Institute of the Russian Academy of Sciences	Coherent properties of dispersed laser beams with a wide spectrum
10	12.30 12.50	***N. N. Trufanov[1],*** ***M. Dolmatova[1]*** ***D. Egorov[1]*** ***Ivan Chernenky[1]*** ***D. V. Churikov[1],*** ***O. V. Kravchenko[2]*** [1] Scientific and Technological Centre of Unique Instrumentation of RAS [2]FRC CSC RAS	A machine learning approach for EEG brain signal classification
11	12.50 13.10	***V.F. Apeltsin*** Bauman Moscow State University	High-Frequency Asymptotic Approximation for the Propagation Constants of a Circular Homogeneous Dielectric Waveguide
12	13.10 13.30	***N.P. Balabukha,*** ***E.E. Evstafiev,*** ***N.L. lesser***	Investigation of the influence of the presence of a support on the scattered field on an

		N.T. Shapkin Institute of Theoretical and Applied Electrodynamics of RAS	object in an anechoic chamber by the method of mathematical modeling
13	13.30 13.50	***A.A. Bykov*** Moscow State University named after M.V. Lomonosov	Modern and Classical Methods for Calculating Natural Waves of Optical Fibers and Waveguides with an Impedance Boundary
14	13.50 14.10	***N.S. Konnova, P.V. Mizinov*** Bauman Moscow State Technical University	Simulation of biometric system performance under spoofing attack
15	14.10 14.30	***A.A. Bykov*** Moscow State University named after M.V. Lomonosov	Waves in periodic structures with sub-barrier tunneling
16	14.30 14.50	***A.A. Bykov*** Moscow State University named after M.V. Lomonosov	Simulation of Electromagnetic Wave Propagation in an Irregular Loaded Waveguide
17	14.50 15.10	***A.A. Belov, Zh.O. Dombrovskaya*** Moscow State University named after M.V. Lomonosov	Economical Grid Methods for Calculating Problems of Integrated Photonics
18	15.10 15.30	***A.M. Zotov, P.V. Korolenko*** Moscow State University named after M.V. Lomonosov	Rayleigh and non-Rayleigh speckles: characteristics and applications
19	15.30 15.50	***P.V. Korolenko, A.M. Zotov*** Lomonosov Moscow state university	Influence of Statistical Characteristics of Speckle-Like Wave Fields on Their Optical Properties
20	15.50 16.10	***S. K. Mohanty[1], A. N. Dev[2], D. V. Churikov[3], Oleg V. Kravchenko[3,4]*** [1]Department of Mathematics, Siksha `O' Anusandhan (Deemed to be University), [2]Centre for Data Science, Siksha `O' Anusandhan (Deemed to be University), [3]Scientic and Technological Centre of Unique Instrumentation of RAS	Extended generalized $\left(\frac{G'}{G^2}\right)$-expansion method to the BK equation with variable coefficients

		[4]Federal Research Center Computer Science and Control of RAS	
21	16.10 16.30	***K.P. Mredula[1],*** ***O.V. Kravchenko[2],*** ***D.V. Churikov[3],*** ***B.M. Shah[4]*** [1]Sardar Vallabhbhai Patel Institute of Technology [2]Scientific and Technological Centre of Unique Instrumentation of RAS [3]Scientific and Technological Centre of Unique Instrumentation of RAS [4]The Maharaja Sayajirao University of Baroda	Finite volume simulation for evolution of amphibian embryo model