

**XXIX International Conference
WECONF-2026**

**«2026 WAVE ELECTRONICS AND ITS
APPLICATION IN INFORMATION
AND TELECOMMUNICATION SYSTEMS»**

(IEEE Conference Record #69969)

12-15 May 2026

CONFERENCE PROGRAM

**St-Petersburg
2026**

CONFERENCE ORGANIZERS

SAINT PETERSBURG STATE UNIVERSITY OF AEROSPACE INSTRUMENTATION (ST. PETERSBURG, RUSSIA)

IEEE – INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

INSTITUTE OF RADIO AND INFORMATION SYSTEMS – IRIS (VIENNA, AUSTRIA)

INSTITUTE OF RADIOENGINEERING AND ELECTRONICS OF RUSSIAN ACADEMY OF SCIENCES (MOSCOW, RUSSIA)

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CONFERENCE SECTIONS*

CHAPTER 1-2. Acoustooptics & Acoustoelectronics

(Акустооптика и Акустоэлектроника)

CHAPTER 3. Methods and devices of information processing

(Методы и устройства обработки информации)

CHAPTER 4. Data processing and transmission in information and telecommunication systems

(Обработка и передача информации в инфокоммуникационных системах)

CHAPTER 5. Electromechanics and control systems

(Электромеханика и системы управления)

CHAPTER 6. Microelectronic Embedded Systems

(Встроенные микроэлектронные системы)

CHAPTER 7. Modeling and situational quality management in electronics and instrumentation

(Моделирование и ситуационное управление качеством в электронике и приборостроении)

CHAPTER 8. Instrumentation and Intelligent Transportation Systems

(Контрольно-измерительные приборы и интеллектуальные транспортные системы)

CHAPTER 9. Quantum telecommunications

(Квантовые телекоммуникации)

*Доклады в программе внутри секций перечислены в алфавитном порядке по фамилии первого автора. По согласованию с председателем секции порядок следования докладов может быть изменен.

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Svetlana Dymkova, PhD, Vice-Chair of Russia Section Chapter IEEE, CAS04

CONFERENCE REGULATIONS

MAY 12
(10:00 – 17:00)

Boiling Point SUAI, St. Petersburg, st. Truda, 8

10:00 – 11:00
REGISTRATION & CONFERENCE OPENING CEREMONY

11:00 – 11:30
COFFEE BREAK

11:30 – 14:00
PLENARY SESSION

14:00 – 17:00
Cultural program or Welcome LUNCH

MAY 13
(10:00 – 17:00)

LIAP Hall (Зал ЛИАП)
10:00 – 17:00

CHAPTER 1-2. Acoustooptics & Acoustoelectronics (Session 1, 2)
(Акустооптика и Акустоэлектроника)

Terra Hall (Зал Terra)
10:00 – 17:00

**CHAPTER 4. Data processing and transmission in information
and telecommunication systems**
(Обработка и передача информации в инфокоммуникационных системах)

Matrix Hall (Зал Matrix)
10:00 – 13:30

CHAPTER 8. Instrumentation and Intelligent Transportation Systems
(Контрольно-измерительные приборы и интеллектуальные транспортные системы)

Matrix Hall (Зал Matrix)
14:00 – 17:00

CHAPTER 9. Quantum telecommunications
(Квантовые телекоммуникации)

MAY 14
(10:00 – 17:00)

Terra Hall (Зал Terra)
10:00 – 16:00

CHAPTER 3. Methods and devices of information processing
(Методы и устройства обработки информации)

Matrix Hall (Зал Matrix)
10:00 – 13:30

CHAPTER 5. Electromechanics and control systems
(Электромеханика и системы управления)

LIAP Hall (Зал ЛИАП)
14:00 – 16:00

CHAPTER 6. Microelectronic Embedded Systems
(Встроенные микроэлектронные системы)

LIAP Hall (Зал ЛИАП)
10:00 – 13:30

**CHAPTER 7. Modeling and situational quality management in electronics
and instrumentation**
*(Моделирование и ситуационное управление качеством в электронике
и приборостроении)*

Terra Hall (Зал Terra)
16:00 – 17:00

CONFERENCE CLOSING CEREMONY

Session 1. MAY 13 (10:00 – 13:30)

Session 2. MAY 13 (14:00 – 17:00)

**CHAPTER 1-2
ACOUSTOOPTICS & ACOUSTOELECTRONICS**

V.N. Belyi, P.I. Ropot

Institute of Physics of the National Academy of Sciences of Belarus, Minsk, Belarus

G.V. Kulak, L.A. Tozik

Mozyr State Pedagogical University named after I.P. Shamyakin, Mozyr, Belarus

V.I. Kazakov

Saint-Petersburg State University of Aerospace Instrumentation (SUAI)

St. Petersburg, Russia

**ACOUSTO-OPTIC MODULATION OF BESSEL LIGHT BEAMS BY
LONGITUDINAL ULTRASONIC WAVES IN PARATELLURITE
CRYSTALS**

V.N. Chukov

*N.M. Emanuel Institute of Biochemical Physics of the Russian Academy of Sciences,
Moscow, Russia*

**META-SPECTROSCOPY OF THE RAYLEIGH WAVE SCATTERING
ON TOPOLOGICAL STRUCTURES OF A SURFACE ROUGHNESS**

Ekaterina I. Kostyleva

Physics Department, M.V. Lomonosov Moscow State University, Moscow, Russia;

*Institute of Advanced Technology and Industrial Programming, MIREA–Russian Tech-
nological University, Moscow, Russia*

Sergey N. Mantsevich

Physics Department, M.V. Lomonosov Moscow State University, Moscow, Russia

**ACOUSTIC BEAM STRUCTURE IMPACT ON QUASICOLLINEAR ACOUS-
TO-OPTIC CELL TRANSMISSION FUNCTIONS**

S.N. Kurilkina

*B.I. Stepanov Institute of Physics of National Academy of Sciences of Belarus, Minsk,
Belarus*

V.I. Kazakov

St. Petersburg State University of Aerospace Instrumentation, St.-Petersburg, Russia

**FORMATION AND PROPAGATION OF ACOUSTIC BESSEL BEAMS WITH
EXTREMELY SMALL CONE ANGLE**

N.V. Polikarpova

Faculty of Physics, Lomonosov Moscow State University, Moscow, Russia

**ELASTIC-MODE CONVERSION FOR ACOUSTO-OPTIC APPLICATIONS IN
PARATELLURITE**

Natalya V. Voronova, Evgeny S. Gornev

JSC "Molecular Electronic Research Institute", Moscow, Russia

Vladimir I. Anisimkin

Kotelnikov Institute of Radioengineering and Electronics, RAS, Moscow, Russia

**DUAL-CHANNEL ACOUSTIC DEVICE FOR MONITORING OF LIQUID –
VAPOUR AND LIQUID - ICE PHASE TRANSITIONS**

MAY 13 (10:00 – 17:00)

**CHAPTER 4.
DATA PROCESSING AND TRANSMISSION IN INFORMATION
AND TELECOMMUNICATION SYSTEMS**

Levon V. Agamirov

*Moscow Technical University of Communications and Informatics;
Moscow Power Engineering Institute (National Research University “MPEI”),
Moscow, Russia*

Vladimir L. Agamirov, Igor S. Vlasnev, Arseniy M. Sampilov, Natalia V. Toutova
Moscow Technical University of Communications and Informatics, Moscow, Russia
**DEVELOPMENT OF A MACHINE LEARNING MODEL FOR ASSESSING
RISKS OF DELAY IN IT PROJECT MANAGEMENT**

Alaa Ali, E. M. Lobov

Moscow Technical University of Communications and Informatics, Moscow, Russia
**A COMPARATIVE STUDY OF MACHINE LEARNING-BASED INTELLIGENT
EQUALIZERS IN 5G WIRELESS SYSTEMS: PERFORMANCE
AND COMPUTATIONAL COMPLEXITY ANALYSIS**

A.A. Bardovsky, S.G. Fomicheva

Saint-Petersburg State University of Aerospace Instrumentation, St. Petersburg, Russia
**EVALUATING THE PERFORMANCE OF MACHINE LEARNING FRAME-
WORKS FOR OPERATING IN SECURE ENCLAVES**

Igor Boyko, Evgeniy Glushankov, Andrey Vladyko

*The Bonch-Bruевич St. Petersburg State University of Telecommunications,
St. Petersburg, Russia*
**NONLINEAR PRECODING ALGORITHMS BASED ON MATRIX
DECOMPOSITION FOR TERRESTRIAL COMPONENTS OF HYBRID COM-
MUNICATION NETWORKS**

Viktoriya V. Bozhenko

*Institute of Information Technologies and Programming, St. Petersburg, Russia;
Saint Petersburg State University of Aerospace Instrumentation “SUAI”,
St. Petersburg, Russia*
**COMPARATIVE ANALYSIS OF NEURAL NETWORK ARCHITECTURES
FOR PULMONARY PATHOLOGY CLASSIFICATION ON X-RAYS**

Artem Burkov, Roman Rachugin, Andrey Turlikov

Saint Petersburg State University of Aerospace Instrumentation, Saint Petersburg, Russia

AVERAGE DELAY OF MULTICHANNEL COMBINED ALOHA-BASED ALGORITHM WITH EARLY-FEEDBACK

Grigory Fokin, Nikita Sheremet

The Bonch-Bruевич Saint Petersburg, State University of Telecommunications, St. Petersburg, Russia

EXPERIMENTAL EVALUATION OF DIRECTION OF ARRIVAL ESTIMATION ON AN SDR-BASED SYNCHRONIZED SYSTEM

Grigoriy Fokin, Ilya Grishin

The Bonch-Bruевич Saint Petersburg State University of Telecommunications, Saint Petersburg, Russia

Alla Kalinkina

OOO «Gazprom transgaz Ukhta», Ukhta, Russia

Alexander Sinilnikov

St. Petersburg branch of the M.I. Krivosheev National Research Centre for Telecommunication Saint Petersburg, Russia

Vladimir Sevidov

S.M. Budyonny VAS, Saint Petersburg, Russia

MIMO-NOMA TECHNOLOGY: TECHNICAL LIMITS AND APPLICATION AREAS

A.H. Hasanov, Member IEEE

National Defense University, Baku, Azerbaijan

T.T. Nadirova, Member IEEE

Nakhchivan State University, Baku, Azerbaijani

B.G. Ibrahimov, Member IEEE

Azerbaijan Technical University; Baku Engineering University;

National Defense University, Baku, Azerbaijan

RESEARCH NOISE IMMUNITY OF MESSAGE RECEPTION IN RADIO ENGINEERING SYSTEMS

B.G. Ibrahimov, Member IEEE

Azerbaijan Technical University; Baku Engineering University;

National Defense University, Baku, Azerbaijan

H.A. Gasimov, Member IEEE

Nakhchivan State University, Baku, Azerbaijan

A.A. Hamidova, Member IEEE

Azerbaijan Technical University, Baku, Azerbaijan

RESEARCH THROUGHPUT OF THE FREE-SPACE OPTICAL COMMUNICATION SYSTEMS

M. N. Isaeva, A. A. Ovchinnikov

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

RESEARCH THE ERROR PROBABILITY OF DECODING QUASICYCLIC CODES IN ERROR BURST CORRECTION

Denis Kutuzov, Alexey Osovsky, Nataliya Maltseva, Georgy Popov

Astrakhan State Technical University, Astrakhan, Russia

FUZZY LOGIC-BASED CONGESTION ESTIMATION IN NETWORK-ON-CHIP ROUTERS UNDER VIDEO OBJECT PLANE DECODER TRAFFIC

E. S. Markovskiy, A. M. Turlikov

St. Petersburg State University of Aerospace Instrumentation, St. Petersburg, Russia

INVESTIGATION OF THE OPTIMAL NUMBER OF PACKETS PER ACKNOWLEDGMENT FOR THE QUIC PROTOCOL IN WIRELESS NETWORKS

Egor Melikhov, Elena Stroganova

Moscow Technical University of Communications and Informatics, Moscow, Russia

RADIO FREQUENCY SPECTRUM OPTIMIZING FOR MULTICAST DATA TRANSMING IN 4G AND 5G MULTI-ZONED NETWORKS

A.A. Ovchinnikov, M. N. Isaeva

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

ESTIMATION OF THE SIZE OF INFORMATION SETS WHEN CORRECTING COMPOUND ERRORS

Anastasia S. Raskopina, Tatiana M. Tatarnikova

Institute of Information Technology and Programming, St. Petersburg, Russia;

St. Petersburg State University of Aerospace Instrumentation (SUAI), St. Petersburg, Russia

Ren Jianan

National University of Singapore, Singapore, Singapore

REPRESENTATION GEOMETRY PRESERVATION FOR ROBUST NEURAL NETWORK PRUNING

Daria D. Saveleva, Tatiana M. Tatarnikova

Institute of Information Technology and Programming, St. Petersburg, Russia;

St. Petersburg State University of Aerospace Instrumentation (SUAI), St. Petersburg, Russia

Ren Jianan

National University of Singapore, Singapore, Singapore

CLASSICAL MACHINE LEARNING METHODS AND NEURAL NETWORKS IN DETECTING THREATS IN INTERNET OF THINGS TRAFFIC

Vladimir Starikov, Grigoriy Fokin

*The Bonch-Bruевич Saint Petersburg State University of Telecommunications,
Saint Petersburg, Russia*

Vladimir Sevidov

S.M. Budyonny VAS, Saint Petersburg, Russia

**RAY TRACING IN RADIO ACCESS NETWORKS OF THE FIFTH
AND SUBSEQUENT GENERATIONS. PROBLEM STATUS ANALYSIS**

Tatiana M. Tatarnikova, Dmitriy A. Bulgakov

*Institute of Information Technology and Programming, Saint-Petersburg, Russia;
Saint Petersburg State University of Aerospace Instrumentation "SUAI",
Saint-Petersburg, Russia*

**TRANSACTION QUEUE MANAGEMENT IN DISTRIBUTED SYSTEMS WITH
PARTIAL SERVICE ORDER**

Vardges Vardanyan, Artem Maksimov, Danil Sergeev

SibSUTIS, Novosibirsk, Russia

**CAPACITY OF SINGLE-SPAN DATA CENTER INTERCONNECTIONS WITH
CO-OFDM: IMPACT OF CHANNEL MODULATION FORMATS**

Alina M. Veresova, Andrei A. Ovchinnikov

*Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Rus-
sia*

**CONSTRUCTING A MAXIMUM LIKELIHOOD DECODING RULE
FOR FINITE STATE CHANNELS**

MAY 13 (10:00 – 13:30)

CHAPTER 8.

INSTRUMENTATION AND INTELLIGENT TRANSPORTATION SYSTEMS

Artem Bagdasaryan, Sergei Gaponenko, Ksenia Polyantseva

Moscow Technical University of Communications and Informatics, Moscow, Russia

AUTOMATED SYSTEM FOR ASSESSING THE DEGREE OF DETERIORATION OF ROAD MARKINGS BASED ON DEEP LEARNING AND MULTIPARAMETRIC AGGREGATION

Vadim Borzov, Marina Moseva, Mikhail Gorodnichev

Moscow Technical University of Communication and Informatics, Moscow, Russia

A GRAPH-PROBABILISTIC MODEL OF INTER-CAMERA ASSOCIATION OF VEHICLES IN DISTRIBUTED ROAD VIDEO SURVEILLANCE SYSTEMS

L.N. Dernovaya, G.M. Petrov, E.S. Kostin, A.S. Kostin

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

DYNAMIC ROUTE PLANNING FOR A CIVIL MULTI-ROTOR UNMANNED AERIAL VEHICLE AVOIDING RESTRICTED ZONES IN AN URBAN ENVIRONMENT

D. V. Gadasin, D. S. Kalininsky, L. A. Tremasova, D.V. Ignatov

Moscow Technical University of Communications and Informatics, Moscow, Russia

INTELLIGENT ACCESS CONTROL MODELS IN TELECOMMUNICATION SYSTEMS: APPLICATION OF ARTIFICIAL INTELLIGENCE FOR ADAPTIVE SECURITY

Sergei Gaponenko, Daria Matyunina, Marina Manzhos

Moscow Technical University of Communications and Informatics, Moscow, Russia

A NEURAL NETWORK APPROACH TO THE DETECTION AND CLASSIFICATION OF ROAD INFRASTRUCTURE OBJECTS IN INTELLIGENT TRANSPORT SYSTEMS

Maxim Gorskiy, Marina Moseva

Moscow Technical University of Communications and Informatics, Moscow, Russia

THE USE OF VISION FOUNDATION MODELS COMBINED WITH TEMPORAL CONTEXT FOR VEHICLE DETECTION

G. F. Karlova

Tomsk State University of Control System and Radioelectronics, Tomsk, Russia

M. S. Yegunov

Tomsk State University, Tomsk, Russia

E. A. Belozyorova

Tomsk State University of Control System and Radioelectronics, Tomsk, Russia

INVESTIGATION OF A CONTACTLESS ENCODER BASED ON THE DOPPLER EFFECT

A.S Kostin, E.S Kostin, V.A Fetisov, N.R Ali

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

METHODS FOR ASSESSING THE TRAJECTORY ACCURACY OF AN AUTONOMOUS UNMANNED SYSTEM UNDER DIFFERENT POSITIONING CONFIGURATIONS

E.S. Kostin, A.S. Kostin

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

INFORMATION-AND-MEASUREMENT MODEL FOR VALIDATING ENGINEERING OPERATING PROCEDURES OF UNMANNED SYSTEMS USING SIMULATOR EVENT DATA

N.G. Kuffinova, O.A. Tetchenko, A.V. Ostroukh, I.A. Artemyev,

A.A. Podberezkin

Institute of Transport Technologies and Logistics, Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

TRANSITIVE PRIORS FOR LLM WEIGHT INITIALIZATION IN SPATIOTEMPORAL TRANSPORT ANALYTICS

N.N. Maiorov, M.R. Yazvenko

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

RESEARCH OF THE OCCUPANCY OF THE BERTHS OF A SEA PASSENGER PORT BASED ON A SIMULATION MODEL WITH BERTH ALLOCATION PROBLEM SOLVER

Michael Mann

GRM Global Ventures, Vienna, Austria

PHYSICAL-LAW-CONSTRAINED REINFORCEMENT LEARNING FOR ROBUST UAV CONTROL IN INTELLIGENT TRANSPORTATION SYSTEMS

I. V. Matelenok

Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

**INVESTIGATION OF SENSOR INSTALLATION METHODS
FOR ACOUSTIC TOMOGRAPHY IN STANDING TREES**

Marina Moseva, Samat uulu Maksat

Moscow Technical University of Communication and Informatics, Moscow, Russia

**DEVELOPMENT OF AN APPROACH TO ADAPTIVE PARAMETRIC
TUNING OF A CAR-FOLLOWING MODEL**

Marina S. Moseva, Egor A. Osipov, Kamil R. Kharrasov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**TRANSPORT SCENE IMAGE DE-NOISING WITH GENERATIVE
ADVERSARIAL NETWORKS**

Ksenia Polyantseva, Andrei Sergeev

Moscow Technical University of Communications and Informatics, Moscow, Russia

**AN INTELLIGENT TRAFFIC CONGESTION FORECASTING SYSTEM
BASED ON MULTI-MODEL MACHINE LEARNING AND REAL-TIME DATA
COLLECTION**

Karina K. Sokolova, Vladimir V. Vasiliev

Moscow Technical University of Communications and Informatics, Moscow, Russia

**DETERMINING THE DIRECTION OF SIGNAL ARRIVAL
FOR A NON-COLLINEAR ANTENNA ARRAY IN REAL TIME**

D. D. Varkentin

St. Petersburg State University of Aerospace Instrumentation (SUAI), St. Petersburg, Russia

**IMPLEMENTATION OF A TWO-LEVEL TRANSPORT SYSTEM MODEL USING
REMOTE AGGLOMERATIONS OF LARGE CITIES
AS AN EXAMPLE**

MAY 13 (14:00 – 17:00)

**CHAPTER 9.
QUANTUM TELECOMMUNICATIONS**

O.S. Belova

National Research University "Moscow Power Engineering Institute", Moscow, Russia

D. V. Bolotov

Moscow Technical University of Communications and Informatics, Moscow, Russia;

National Research University "Moscow Power Engineering Institute", Moscow, Russia

A. G. Temnikov, A. I. Miloserdov, G. P. Paimtsev

National Research University "Moscow Power Engineering Institute", Moscow, Russia

SIMULATED QUANTUM ANNEALING OF THE WISHART PLANTED ENSEMBLE

E. V. Burlakov, M. A. Yarygin

Moscow Technical University of Communication and Informatics, Moscow, Russia

EFFECT OF ELECTROMAGNETIC INTERFERENCE ON OPTICAL SIGNAL POLARIZATION STATE IN A CABLE

Evelin Bushuev, Sergey Grychkin, Elena Stroganova

Moscow Technical University of Communications and Informatics, Moscow, Russia

ELECTROMAGNETIC INTERFERENCE IMMUNITY TESTING OF QUANTUM CRYPTOGRAPHIC COMMUNICATION SYSTEM

D. D. Chizhin, V. V. Toporovsky, A. Yu. Epifanov, I. V. Galaktionov,

N. V. Pchelkina

Moscow Technical University of Communications and Informatics, Moscow, Russia

WIDE-APERTURE SENSOR FOR ATMOSPHERIC AND SPACE OPTICAL QUANTUM COMMUNICATION SYSTEMS

Sergey E. Grychkin, Elena P. Stroganova

Moscow Technical University of Communications and Informatics, Moscow, Russia

QUANTUM SECURE COMMUNICATIONS USING WIRELESS QUANTUM AND SERVICE CHANNELS

O.V. Kolesnikov

Moscow Technical University of Communications and Informatics, Moscow, Russia

CUMULATIVE POLARIZATION ROTATION ANGLE IN FIBER-OPTIC COMMUNICATION LINES UNDER LIGHTNING ELECTROMAGNETIC IMPACT

K. N. Pankov, M. M. Glukhov-jr.

Moscow Technical University of Communications and Informatics, Moscow, Russia

RELIABILITY OF CRYPTOGRAPHIC ALGORITHMS FOR ENSURING INFORMATION SECURITY IN THE CONTEXT OF THE QUANTUM THREAT

M. V. Sapozhnikov

Moscow Technical University of Communications and Informatics, Moscow, Russia

O. V. Kochergina

Belarusian State Academy of Communications, Minsk, Belarus

N. S. Kuznetsova, S. Y. Kazantsev

Moscow Technical University of Communications and Informatics, Moscow, Russia

EFFICIENCY OF QKD IN ATMOSPHERIC OPTICAL COMMUNICATION LINES

Elena P. Stroganova, Sergey E. Grychkin, Evelin Y. Bushuev

Moscow Technical University of Communications and Informatics, Moscow, Russia

QUANTUM KEY DISTRIBUTION COMMUNICATION CHANNEL WITH UNMANNED VEHICLES UNDER VARIOUS ATMOSPHERIC CONDITIONS

Vladimir Toporovsky

Moscow Technical University of Communications and Informatics, Moscow, Russia

Ilya Galaktionov

Moscow Technical University of Communications and Informatics, Moscow, Russia;

Moscow Polytechnic University, Moscow, Russia

LASER COMMUNICATION SYSTEM WITH ADAPTIVE OPTICS IMPLEMENTATION

MAY 14 (10:00 – 16:00)

CHAPTER 3.

METHODS AND DEVICES OF INFORMATION PROCESSING

Olesya Bolkhovskaya, Maxim Katkov, Vladimir Artemiev, Alexander Maltsev
Lobachevsky University, Nizhny Novgorod, Russia

**EFFICIENCY OF GLRT STATISTICS USED FOR SIGNAL DETECTION
IN MULTIELEMENT ANTENNA ARRAYS**

Artyom Dyomin

Moscow Technical University of Communications and Informatics, Moscow, Russia

Meri Hovsepyan

Yerevan State University (YSU), Yerevan, Armenia

Grach Mkrtchian, Mikhail Gorodnichev

Moscow Technical University of Communications and Informatics, Moscow, Russia

**INTERPRETABLE DECISION SUPPORT FOR CREDIT RISK ASSESSMENT USING
MACHINE LEARNING AND LLM-BASED EXPLANATIONS**

Anastasia V. Ermakova

Moscow Technical University of Communications and Informatics, Moscow, Russia

Zhenxing Wang

Shanghai Polytechnic University, Shanghai, China

Anastasiya Y. Kudryashova, Irina S. Kretova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**APPLICATION OF VILENKIN-CRESTENSON FUNCTIONS IN GROUND-
BASED RADAR USING PROBING PULSES**

Timur Fatkhulin, Yuri Leokhin, Svetlana Dymkova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESEARCHING THE EFFICIENCY OF SOURCE CODE DEFECT
PREDICTION USING A MODIFIED XGBOOST ALGORITHM**

Maria Isaikina, Olesya Bolkhovskaya, Vladimir Artemiev, Alexander Maltsev

Lobachevsky University, Nizhny Novgorod, Russia

**STATISTICAL CHARACTERISTICS OF SIGNAL ANGLE-OF-ARRIVAL ESTIMATES
IN ANTENNA ARRAYS AT LOW SNR**

Anastasiya Y. Kudryashova, Irina S. Kretova, Anastasia V. Ermakova

Moscow Technical University of Communication and Informatics, Moscow, Russia

**DEVELOPMENT OF A PROTOTYPE KA-BAND AIRCRAFT TELEMETRY
TRANSMISSION SYSTEM**

Yuri Leokhin, Timur Fatkhulin, Svetlana Dymkova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**MODIFICATION OF THE XGBOOST MACHINE LEARNING
ALGORITHM FOR SALES FORECASTING**

Daniil Lukin, Sergei Gaponenko, Marina Manzhos, Daria Matyunina

Moscow Technical University of Communications and Informatics, Moscow, Russia

**A REAL-TIME FIRE DETECTION SYSTEM IN AUTOMOBILE TUNNELS
BASED ON THE YOLO ARCHITECTURE**

E. S. Markovskiy

St. Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

M. R. Nikiforov

St. Petersburg Electrotechnical University, Saint-Petersburg, Russia

N. V. Markovskaya

St. Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia

**EXPERIMENTAL COMPARISON OF RECURRENT NEURAL NETWORKS
FOR TEXT CLASSIFICATION UNDER NOISY CONDITIONS**

Ksenia Massaltseva, Artem Pavlikov, Mikhail Gorodnichev

Moscow Technical University of Communications and Informatics Moscow, Russia

**ECG MULTI-CLASS DIAGNOSTICS USING A HYBRID CNN-TRANSFORMER
WITH SELF-SUPERVISED PRE-TRAINING**

N.I. Miroshnichenko

Institute of Information Technology and Programming, St. Petersburg, Russia;

Saint Petersburg State University of Aerospace Instrumentation "SUAI",

St. Petersburg, Russia

**STUDY OF THE ROBUSTNESS OF NEURAL NETWORK-BASED ACOUSTIC
EVENT CLASSIFICATION TO NOISE INTERFERENCE AT VARIOUS SAM-
PLING RATES AND TRAINING STRATEGIES**

Yuliana A. Novikova, Maksim B. Ryzhikov, Ekaterina A. Boeva

Saint Petersburg State University of Aerospace Instrumentation (SUAI), St. Petersburg, Russia

**OPTICAL TWO-CHANNEL AIRBORNE SYSTEM FOR FOREST FIRE
DETECTION**

Olga V. Opalikhina, Mikhail A. Zhelavskiy

Saint-Petersburg University of Aerospace Instrumentation (SUAI), St. Petersburg, Russia

**APPLICATION OF THE MODIFIED PRONY METHOD TO THE PROBLEM OF
IDENTIFICATION OF A NOISY SIGNAL**

Vera Petrosyan, Vladislav Agapov, Artem Pavlikov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**MARKERLESS ASSESSMENT OF REHABILITATION EXERCISE
QUALITY FROM MONOCULAR VIDEO**

Ya. A. Ryvkina, V. I. Kazakov, O. V. Shakin

Saint Petersburg State University of Aerospace Instrumentation (SUAI),

Saint Petersburg, Russia

A. I. Kantserov, A. A. Rumiantsev

JSC Scientific Center for Applied Electrodynamics, Saint Petersburg, Russia

**APPLICATION OF ARTIFICIAL INTELLIGENCE METHODS
FOR PHASING SEGMENTED MIRRORS OF SPACE-BASED
ADAPTIVE OPTOELECTRONIC TELESCOPE SYSTEMS**

Alexander Sak

Moscow State University of Civil Engineering, Moscow, Russia

Irina Sak

Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, Moscow, Russia

CHOOSING THE BEST MODEL TO HANDLE SMALL DATA

Andrei Sergeev, Daria Matyunina, Marina Manzhos

Moscow Technical University of Communications and Informatics, Moscow, Russia

**INTERACTIVE DATA PROCESSING PLATFORM WITH INTEGRATED VAL-
IDATION AND QUERY CONSTRUCTION**

Victor N. Tolstykh, Vladimir N. Yershov

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LOCAL MINIMA OF ERROR FUNCTION IN NEURAL NETWORKS

Vladislav Tuchin, Roman Kozin, Vladimir Shumigai, Arina Starceva,

Valeria Efimova

ITMO University, Saint-Petersburg, Russia

**FROM 1D SIGNALS TO MASKS: TWO-STAGE IMAGE-FREE
SINGLE-PIXEL PERSON SEGMENTATION**

Alexander Vinogradov, Grach Mkrtchian, Artem Pavlikov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**BIDIRECTIONAL ALIGNMENT FINE-TUNING FOR DECODER-ONLY LAN-
GUAGE MODELS**

Vladimir Yu. Volkov

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Saint-Petersburg State University of Aerospace Instrumentation (SUAI), St. Petersburg,
Russia*

Alexandr S. Nikolaev

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DISTINGUISHING OBJECTS BY SHAPE IN IMAGES USING A NEURAL NETWORK

Andrei Zvorygin, Andrei Sergeev, Ksenia Polyantseva

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ADAPTIVE DISTRIBUTION OF COMPUTING LOAD IN DISTRIBUTED SYSTEMS BASED ON AUTONOMOUS EVALUATION OF COMPUTING NODE PERFORMANCE

MAY 14 (10:00 – 13:30)

**CHAPTER 5.
ELECTROMECHANICS AND CONTROL SYSTEMS**

MAY 14 (14:00 – 16:00)

**CHAPTER 6.
MICROELECTRONIC EMBEDDED SYSTEMS**

O.V. Biryukova, I.V. Koretskaya

National Research University "Moscow Power Engineering Institute", Moscow, Russia

THE USE OF A SCINTILLATION DETECTOR IN EQUIPMENT FOR STATIC PROBING DURING GAMMA LOGGING TESTS OF SOILS

Lydia Metlitskaya, Valentin Olenev

Saint Petersburg State University of Aerospace Instrumentation, Saint Petersburg, Russia

ANALYSIS OF ALGORITHMS FOR AN OPTIMAL FAULT-TOLERANT NETWORK DESIGN

V.M. Novikov

Voronezh State University, Voronezh, Russia

V.L. Olenev, E.A. Suvorova, A.Yu. Syschikov

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IMPLEMENTATION OF DETERMINISTIC REAL-TIME OPTICAL NETWORK BY MEANS OF WDM AND SPACEFIBRE

Ilya V. Pakhomov

Institute of Advanced Mechanical Engineering "Rostselmash", Don State Technical University, Rostov-on-Don, Russia

Dmitriy V. Kuznetsov, Dmitriy V. Kleimenkin, Nikolay N. Prokopenko

Don State Technical University, Rostov-on-Don, Russia

DESIGN FEATURES AND PRACTICAL IMPLEMENTATION OF CLASS-AB DIFFERENTIAL STAGES IN HIGH-SPEED GALLIUM ARSENIDE OPERATIONAL AMPLIFIERS

Elena Suvorova

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ESTIMATING ROUTER STATES FOR DECENTRALIZED MANAGEMENT OF A COMPUTING NETWORK WITH DYNAMICALLY CHANGING CHARACTERISTICS

MAY 14 (10:00 – 13:30)

**CHAPTER 7.
MODELING AND SITUATIONAL QUALITY MANAGEMENT
IN ELECTRONICS AND INSTRUMENTATION**

S.M. Bobrovsky, E.Yu. Malysheva

MIREA Russian Technological University, Moscow, Russia

**EVALUATION OF INFORMATION SUPPORT SYSTEMS FOR QUALITY
MANAGEMENT PROCESSES**

Vladimir P. Kuzmenko, Alexander V. Rysin, Evgeniy S. Kvas,

Oksana Ya. Solenaya

Saint-Petersburg state university of aerospace instrumentation (SUAI),

Saint-Petersburg, Russia

**MODELING LUMINOUS FLUX DEGRADATION OF A HOUSEHOLD
LED LAMP FROM ILLUMINANCE MEASUREMENTS DURING
ON-OFF CYCLING**