International Scientific Conference

«2024 SYSTEMS OF SIGNALS GENERATING AND PROCESSING IN THE FIELD OF ON BOARD COMMUNICATIONS»

(IEEE Conference # 60226)

12-14 March 2024

CONFERENCE PROGRAM

Moscow
2024

CONFERENCE ORGANIZERS

INSTITUTE OF RADIO AND INFORMATION SYSTEMS (IRIS)
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
MEDIA PABLISHER LTD

CONFERENCE SECTIONS *

1. Antennas and Radio Waves Propagation.

2. Navigation and Mathematical Algorithms of an Object Space Orientation.

3. Radiofrequency Applications.

4. Wire and Optical Communication and Control Systems.

5. Intelligent Transport Systems

Sub-section I. "Peculiarities of data exchange in cooperative ITS"

Sub-section II. "Theoretical Aspects of Artificial Intelligence Systems Develop-ment for Transportation Engineering"

6. Digital signal processing in on-board radio systems

7. Electrical and electronic engineering pedagogy

* The reports in the program inside the sections are listed in alphabetical order by the name of the first author. By agreement with the chairman of the section, the order of reports may be changed
(*Доклады в программе внутри секций перечислены в алфавитном порядке по фамилии первого автора. По согласованию с председателем секции порядок следования докладов может быть изменен*).

CONFERENCE SCHEDULE

12 March 2024 (Tuesday)

09-45 — 10-00 **Registration of participants** (*регистрация участников*) Congress Center Hall

10-00 — 12-00 **Plenary session** (*пленарное заседание*) Conference Hall

12-00 — 13-00 **Break for external lunch** (*перерыв на обед*)

13-00 — 15-30 **Conference section 1-2** (*работа секции 1-2*) Room No. 4

13-00 — 14-20 **Conference section 3** (*работа секции 3*) Room No. 10

13-00 — 18-00 **Conference section 4** (*работа секции 4*) Room No. 1

14-30 — 18-00 **Conference section 5** (*работа секции 5*) Rooms No. 9 and 10

14-30 — 18-00 *Sub-section I.* "Peculiarities of data exchange in cooperative ITS"
Room No. 9

14-30 — 18-00 *Sub-section II.* "Theoretical Aspects of Artificial Intelligence
Systems Develop-ment for Transportation Engineering" Room No. 10

13-00 — 18-00 **Conference section 6** (*работа секции 6*) Rooms No. 8

15-30 — 18-00 **Conference section 7** (*работа секции 7*) Room No. 4

18-00 — 20-00 **Evening reception** (*фуршет*) Congress Center Hall

13 March 2024 (Wednesday)

11-00 — 17-00 **Workshops** (*Antennas and Radio Waves Propagation,
Navigation and Mathematical Algorithms of an Object Space Orientation,
Radiofrequency Applications*)

14 March 2024 (Thursday)

11-00 — 17-00 **Workshops** (*Intelligent Transport Systems, Digital signal processing
in on-board radio systems, Electrical and electronic engineering pedagogys*)

PLENARY SESSION

10-00 – 10-10
WELCOMING REMARKS
Svetlana S. Dymkova
Chair of Russia Section TEM/GRS/ITSS Joint Chapter
*Publication program coordinator of conference «Systems of signals generating and processing
in the field of on board communications», Member, IEEE, Ph.D., CEO of Media Publisher LLC*

10-10 – 10-40
Report «ORBITAL ANGULAR MOMENTUM WAVES: GENERATION METHODS, PROSPECTS OF USE IN RADIO COMMUNICATION AND RADIOLOCATION»
Yuri M. Meleshin
*Ph.D., Associate Professor, Deputy Director of the IMCS,
National Research University of Electronic Technology (MIET), Moscow, Russia*
***Co-authors:* Vadim A. Kaloshin**
*Doctor of Physical and Mathematical Sciences, IEEE Region 8, Chair of AP Moscow Chapter,
Vice-chair of MTT/ED/AES Moscow Chapter, Senior Member, IEEE,
Kotelnikov Institute of Radio Engineering and Electronics of RAS, Moscow, Russia*
Maxim V. Azarov, Artyom A. Airapetyan
assistants at the IMCS, National Research University of Electronic Technology (MIET)
Konstantin S. Lyalin
*Ph.D., Deputy chief structural engineer, National Research University of Electronic Technology
(MIET), Moscow, Russia*

10-40 – 11-10
Report «THE PLANNING OF MULTISERVICE ACCESS NODE CAPACITY USING THE PLTE CONCEPT AS AN EXAMPLE»
Mikhail S. Stepanov
Ph.D., Moscow Technical University of Communications and Informatics, Moscow, Russia
Co-authors: Victoria I. Korotkova, Alexey P. Smirnov
Moscow Technical University of Communications and Informatics, Moscow, Russia
Tammam Zuhair Dawood
*graduate student, Moscow Technical University of Communications and Informatics, Moscow, Russia;
Faculty of Mechanical and Electrical Engineering, Tishreen University, Latakia, Syria*
Leonid S. Poskotin
Tianjin University of Technology and Education, Tianjin, China

11-10 – 11-40
Report «A MEASUREMENT METHOD AND A MATHEMATICAL MODEL OF THE HUMAN VISION SYSTEM'S»

Igor V. Vlasuyk

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

11-40 – 11-55
Information message
«MAIN AREAS OF RESEARCH PRESENTED AT THE CONFERENCE 2024 SYSTEMS OF SIGNALS GENERATING AND PROCESSING IN THE FIELD OF ON BOARD COMMUNICATIONS»

Oleg V. Varlamov

Chair of Russian (Moscow) IEEE Circuits and Systems (CAS04) Chapter, Senior Member, IEEE Doctor of Technical Sciences, Moscow Technical University of Communications and Informatics, Moscow, Russia

11-55 – 12-00
«PHOTO SESSION OF PARTICIPANTS»

SECTION 1-2
Antennas and Radio Waves Propagation.
Navigation and Mathematical Algorithms of an Object Space Orientation

SECTION CHAIRMANS: **Andrey S. Kryukovsky,** *Doctor of Physical and Mathematical Sciences (radiophysics), professor, USSR State Prize laureate, Head of Department, Russian New University Leading Researcher at IRE RAS*

Vadim A. Kaloshin, *Doctor of Physical and Mathematical Sciences, IEEE Region 8, Chair of AP Moscow Chapter, Vice-chair of MTT/ED/AES Moscow Chapter, Senior Member, IEEE*

Grigoriy Fokin (*Member, IEEE*)**, Dmitriy Volgushev**
The Bonch-Bruevich Saint Petersburg State University of Telecommunications, Saint Petersburg, Russia
LOCATION-AWARE BEAMFORMING IN 5G MMWAVE UDN. PART 1. SPATIAL SELECTION BY BEAM SHAPE CONTROL

Dmitriy Volgushev, Grigoriy Fokin (*Member, IEEE*)
The Bonch-Bruevich Saint Petersburg State University of Telecommunications, Saint Petersburg, Russia
LOCATION-AWARE BEAMFORMING IN 5G MMWAVE UDN. PART 2. SPATIAL SELECTION BY BEAM WIDTH CONTROL

D.V. Ivanov, A.A. Kislitsin, N.A. Konkin, A.A. Chernov
Volga State University of Technology, Yoshkar-Ola, Russian
NEURAL NETWORK FOR FORECASTING PARAMETERS OF BROADBAND TRANSIONOSPHERIC RADIO CHANNELS

A.S. Kryukovsky, D.S. Lukin, E.V. Mikhaleva, D.V. Rastyagaev
Russian New University, Moscow, Russia
INVESTIGATION OF THE FEATURES OF RICOCHETING IONOSPHERIC PROPAGATION OF DECAMETER RADIO WAVES

V.S. Panko, K.V. Knyazeva, A.A. Erokhin, A.G. Andreev
Siberian Federal University, Krasnoyarsk, Russia
MEDIUM WAVE TERRESTRIAL RADIO NAVIGATION SYSTEMS ANTENNA RADIATION PATTERN DISTORTIONS DUE TO MULTIPATH PROPAGATION

S.A. Presnyakov, A.D. Kasatkin, N.P. Kravchenko,
HSE University, Moscow, Russia
INVESTIGATION OF TRANSIT CHANNEL INFLUENCE ON RECTANGULAR CHAIN OF COUPLED CAVITIES SLOW-WAVE STRUCTURE

A.V. Timoshenko, A.Yu. Perlov
National Research University of Electronic Technology, Moscow, Russia
A.S. Zaharov
MIREA – Russian Technological University, Moscow, Russia
V.V. Sazonov
Lomonosov Moscow State University (MSU), Moscow, Russia
MODEL FOR CALCULATING CHANGES IN THE RADIATION PATTERN AND AMPLITUDE-PHASE DISTRIBUTION IN THE SUBARRAY OF A LARGE-APERTURE APAA BASED ON A MODIFIED THERMAL CONDUCTIVITY EQUATION

SECTION 2
Navigation and Mathematical Algorithms of an Object Space Orientation

A.G. Erokhin, M.F. Vanina, N.V. Toutova
Moscow Technical University of Communications and Informatics, Moscow, Russia
ANALYTICAL MODEL OF THE WORKING PROCESSES ON-BOARD INFORMATION AND COMPUTING NETWORK USERS

L.V. Gaival, E.A. Skorodumova
Moscow Technical University of Communications and Informatics, Moscow, Russia
IDENTIFICATION OF MYERS-BRIGGS TYPE INDICATOR PERSONALITY TYPES BY PHOTOGRAPH

D.N. Karasev, S.V. Sokolov, I.V. Reshetnikova, D.V. Marshakov
Moscow Technical University of Communications and Informatics, Moscow, Russia
ROBUST STOCHASTIC ESTIMATION BASED ON A MODIFIED KALMAN FILTER

S.A. Rozhkov, V.I. Voronov, L.I. Voronova
Moscow Technical University of Communications and Informatics, Moscow, Russia
SHIP DYNAMICS IN THE DYNAMIC POSITIONING PROBLEM

March 12, 2024 (Tuesday)
13-00 – 14-20

SECTION 3.
Radiofrequency Applications

SECTION CHAIRMEN: Oleg V. Varlamov, *Doctor of Sciences (Engineering),*
IEEE Region 8, Chair of Russia Section CAS Chapter,
Professor of Moscow Technical University of
Communications and Informatics, Senior Member, IEEE

Rahul Gupta *(Member, IEEE)*, **A.A. Yelizarov** *(Senior Member, IEEE)*,
I.V. Nazarov, E.A. Zakirova, A.D. Kasatkin
HSE University, Moscow, Russia
INHERENT IMPEDANCE TRANSFORMATION AND ISOLATION
IN DUAL-BAND BALUN FOR RF FRONT END APPLICATIONS

M.B. Milyakov, A.V. Pestryakov
Moscow Technical University of Communications and Informatics, Moscow, Russia
SPACE MONITORING SYSTEMS MEASURING RECEIVER DEVELOPMENT

Quoc Fung Ngo, O.V. Varlamov *(Senior Member, IEEE)*
Moscow Technical University of Communications and Informatics, Moscow, Russia
METHODS FOR INCREASING THE EFFICIENCY OF AMPLITUDE-PHASE
MODULATED SIGNALS POWER AMPLIFIERS

O.V. Varlamov *(Senior Member, IEEE),* **O.A. Razin, A.V. Bazhin, K.N. Khudyakov**
Moscow Technical University of Communications and Informatics, Moscow, Russia
EQUIPMENT PREPARATION FOR 26 MHZ BAND SYNCHRONOUS DRM
TRIAL BROADCASTING

SECTION 4
Wire and Optical Communication and Control Systems

SECTION CHAIRMAN: Sergey N. Stepanov, *Doctor of Sciences (Engineering),*
Professor of Moscow Technical University of
Communications and Informatics, Moscow, Russia

Timur Fatkhulin, Maxim Mentus, Yuri Leokhin, Anna Salova, Lilia Tremasova
Moscow Technical University of Communications and Informatics, Moscow, Russia
DEVELOPMENT AND RESEARCH OF NEURAL NETWORK METHODS
FOR RECOGNIZING NOISY SPEECH AUDIO FILES

D.V. Gadasin, S.A. Palibza, E.M. Melnikova, D. D. Gadasin
Moscow Technical University of Communications and Informatics, Moscow, Russia
AN ALGORITHM FOR DISTRIBUTING DATA BETWEEN STORAGE SYSTEMS
BASED ON THE PROPERTY OF SELF-SIMILARITY

D.F. Galiaskarov, S.N. Stepanov, A.P. Pshenichnikov, M.G. Kanishcheva
Moscow Technical University of Communications and Informatics, Moscow, Russia
N.N. Nikolaychuk
Moscow Institute of Physics and Technology, Moscow, Russia
DYNAMIC LOAD BALANCING IN DATA CENTER

L.N. Isaeva, A.V. Lobzov
Moscow Technical University of Communications and Informatics, Moscow, Russia
S.S. Kogan
LLC «T8», St-Peterburg, Russia
MEASURING OF OPTICAL SIGNAL TO NOISE RATIO IN HIGH-SPEED
COHERENT CHANNELS OF OPTICAL TRANSMISSION SYSTEMS

V.N. Korshunov, N.I. Likhachev, N.A. Shishova
Moscow Technical University of Communications and Informatics, Moscow, Russia
I.A. Ovchinnikova, P.A. Semenov
JSC VNIIKP, Moscow, Russia
MULTICHANNEL OPTICAL FIBERS FOR THE NETWORK F5G

Yuri Leokhin, Timur Fatkhulin, Mikhail Kozhanov
Moscow Technical University of Communications and Informatics, Moscow, Russia
RESEARCH OF STATIC APPLICATION SECURITY TESTING TECHNIQUE
PROBLEMS AND METHODS FOR SOLVING THEM

A.L. Makarevich, V.V. Kulachek, S.M. Sokovnich, Yu.V. Zaharova, S.V. Zinchenko
Pridnestrovian State University named after of Taras Shevchenko, Tiraspol, Moldova, Pridnestrovye
ANALYSIS OF THE CHARACTERISTICS OF SYNCHRONIZATION SYSTEM COMPONENTS FOR HIGH-SPEED DATA NETWORKS

O.G. Morozov (*Senior member, IEEE*)**, A.Zh. Sakhabutdinov** (*member, IEEE*)**,
D.N. Matveev, I.I. Nureev**
Kazan National Research Technical University named after A.N. Tupolev-KAI, Kazan, Russian Federation
K.A. Khodjanepesov
Institute of Telecommunications and Informatics of Turkmenistan, Ashgabat, Turkmenistan
MICROWAVE PHOTONIC SENSING FOR TEMPERATURE MONITORING OF ON-BOARD PHOTOVOLTAIC PANELS

Victor Netes, Vladislav Sharov
Moscow Technical University of Communications and Informatics, Moscow, Russia
COMMON CAUSE FAILURES IN COMMUNICATION NETWORKS

N.N. Nikolaychuk, A.A. Maslov
Moscow Institute of Physics and Technology, Moscow, Russia.
D.F. Galiaskarov, S.N. Stepanov, O.A. Slatina
Moscow Technical University of Communications and Informatics, Moscow, Russia
ANALYSIS OF INFORMATION FLOWS DISTRIBUTION WITH A LOAD BALANCER IN DATA CENTERS

V.A. Savin, P.D. Shulpina, D.V. Gadasin
Moscow Technical University of Communications and Informatics, Moscow, Russia
S.V. Shevelev
Moscow State University of Civil Engineering (National Research University), Moscow, Russia
DEVELOPMENT OF A MODEL OF DISTRIBUTED COMPUTING SYSTEMS

A.B. Semenov
National Research Moscow State University of Civil En-gineering (NRU MGSU), Moscow, Russia
S.A. Sidnev, V.A. Tsarenko
Moscow Technical University of Communications and Informatics, Moscow, Russia
A MATHEMATICAL MODEL OF THE PROCESS OF TECHNICAL OPERATION OF THE DATA CENTER INFORMATION CABLE SYSTEM ACCORDING TO THE "ON DEMAND" SCHEME

V.A. Shevtsov
Moscow Aviation Institute, Moscow, Russia
A.Yu. Perlov, A.M. Kazantsev
National Research University of Electronic Technologies, Moscow, Russia
S.V. Matseevich
Lomonosov Moscow State University, Moscow, Russia
DIAGNOSING THE TECHNICAL CONDITION OF HETEROGENEOUS NETWORKS OF A SPATIALLY DISTRIBUTED MONITORING SYSTEM BASED ON NEURAL NETWORK ANALYSIS OF TELEMETRY DATA

M.O. Shishkin, F.S. Kroshin, M.S. Stepanov, V.G. Popov, E.E. Malikova
Moscow Technical University of Communications and Informatics, Moscow, Russia
THE IMPACT OF OMNICHANNEL ARCHITECTURE ON CUSTOMER SERVICE CHARACTERISTICS IN MODERN CONTACT CENTERS

S.A. Sidnev, L.Y. Krasikova, G.S. Artemeva, V.A. Tsarenko
Moscow Technical University of Communications and Informatics, Moscow, Russia
PROVISION OF TELECOMMUNICATIONS SERVICES WITH TIME-DIFFERENTIATED RELIABILITY ON F5G NETWORKS

M.S. Stepanov, V.I. Korotkova, Tammam Dawood, A.P. Smirnov
Moscow Technical University of Communications and Informatics, Moscow, Russia
L.S. Poskotin
Tianjin University of Technology and Education, Tianjin, China
THE MATHEMATICAL MODEL OF A MULTISERVICE ACCESS NODE IN THE PRIVATE LTE NETWORK

E.P. Stroganova, E.O. Melikhov
Moscow Technical University of Communications and Informatics, Moscow, Russia
PROVISION OF BROADCAST MULTIMEDIA CONTENT IN 5G MOBILE SYSTEMS USING SATELLITE BROADCASTING

A.N. Terekhov, A.S. Korchagina
Moscow Technical University of Communications and Informatics, Moscow, Russia
IMPROVING AN EFFECTIVE INFORMATION STORAGE METHOD

L.A. Tremasova, D.V. Gadasin, A.K. Andriyanova, D.D. Gadasin
Moscow Technical University of Communications and Informatics, Moscow, Russia
MODELING AND SOLVING THE PROBLEM OF LOAD BALANCING IN DATA TRANSMISSION NETWORKS USING THE STEPPING STONE METHOD

SECTION 5.
INTELLIGENT TRANSPORT SYSTEMS

SECTION 5. SUB-SECTION 1
Peculiarities of data exchange in cooperative ITS
14-30 – 18-00

SECTION CHAIRMANS: *S.V. Zhankaziev,* *Doctor of Technical Sciences, Professor*
Moscow Automobile and Road Construction State Technical University
A.M. Ivanov, *Doctor of Technical Sciences, Professor*
Moscow Automobile and Road Construction State Technical University

Nikolay Dembitsky
Moscow Aviation Institute, Moscow, Russia
SYNTHESIS OF CONTROL SIGNALS FOR ANALOG AUTOMATA SMALL-SIZED TECHNICAL OBJECTS

O.N. Didmanidze, R.S. Fedotkin, V.A. Kryuchkov, N.N. Pulyaev, E.P. Parlyuk
Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, Moscow, Russia
LAYOUT OF THE ELECTROMECHANICAL DRIVETRAIN OF A HYBRID TRACTOR

V.A. Drogovoz
Federal Research Center "Computer Science and Control" of the Russian Academy of Sciences, Moscow, Russia
A.A. Pashkov
Moscow Technical University of Communications and Informatics, Moscow, Russia
SCIENTIFIC AND METHODOLOGICAL SUPPORT FOR THE INTEROPERABILITY OF INTELLIGENT TRANSPORT SYSTEMS

V.V. Filatov, D.V. Rybakov, V.I. Gvozdarev
State University of Management, Moscow, Russia
M.Yu. Karelina
State University of Management;
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
TECHNOLOGICAL AND ECONOMIC FUNDAMENTALS TESTING OF PROMISING UNMANNED SYSTEMS, INCLUDING THOSE CONTROLLED USING INTELLIGENT NEURAL NETWORK TECHNOLOGIES

M.Yu. Karelina
State University of Management;
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
P.I. Smirnov
Energy and Transport Vologda State University, VOGU, Vologda, Russia
B.S. Subbotin
Moscow Automobile and Road Construction State Technical University (MADI);
The Kosygin State University of Russia, Moscow, Russia
R.O. Sudorgin
State University of Management, Moscow, Russia
A MATHEMATICAL MODEL FOR OPTIMIZING THE LOADING OF TRUCKS FOR AUTOMATED TRANSPORTATION MANAGEMENT SYSTEMS BASED ON MACHINE VISION

M.G. Pletnev, E.A. Karelina
State University of Management
P.I. Smirnov
Vologda State University, VOGU, Vologda, Russia
B.S. Subbotin
Moscow Automobile and Road Construction State Technical University (MADI);
The Kosygin State University of Russia, Moscow, Russia
A.V. Silakov
The Kosygin State University of Russia, Moscow, Russia
ASSESSMENT OF THE SKILLS OF CAR DRIVERS BASED ON THE PROCESSING OF TELEMATICS MONITORING DATA

P.V. Plotnikov, G.I. Tambovtsev, A.G. Vladyko (*Member, IEEE*)
The Bonch-Bruevich Saint-Petersburg State University of Telecommunications,
Saint Petersburg, Russia
NUMERICAL ANALYSIS OF ROADSIDE UNITS DEPLOYMENT MODELS IN V2X COMMUNICATION SYSTEM

A.V. Podgornyy, B.S. Subbotin
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
V.V. Filatov
Moscow Automobile and Road Construction State Technical University (MADI);
State University of Management, Moscow, Russia
P.I. Smirnov
Vologda State University, VOGU, Vologda, Russia
COMPARISON OF THE EFFICIENCY AND ENERGY CONSUMPTION OF AN ELECTRIC WHEEL LOADER AND A DIESEL LOADER

I.S. Sineva, V.D. Tkachev
Moscow Technical University of Communications and Informatics, Moscow, Russia
USING MACHINE LEARNING TO IDENTIFY A CAMERA BY PHOTO IMAGE WITH ON BOARD COMMUNICATIONS

A.I. Vorobyev, M.V. Gavrilyuk, T.V. Vorobyeva, D.Yu. Morozov, A.M. Merkovich
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
SCIENTIFIC APPROACHES TO THE IDENTIFICATION OF TEST OBJECTS AND TYPES OF TESTS FOR MOBILE RESEARCH LABORATORIES IN THE FIELD OF INTELLIGENT TRANSPORT SYSTEMS

S.V. Zhankaziev, A.V. Zamytskyh, A. I. Vorobyev, S.Yu. Pakhomov, T.V. Vorobyeva
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
SIMULATION OF ROAD ENVIRONMENT CONDITIONS FOR THE PURPOSES OF ORGANIZING POLYGONAL TESTS OF UNMANNED VEHICLES

CHAIRMAN: *M.V. Yashina, Doctors of Sciences (Physical and mathematical), Moscow Automobile and Road Construction State Technical University (MADI), Member, IEEE*

V.N. Bogumil, H.M. Eldiba, J.E. Kasimov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
M.J. Duque-Sarango
Nacional University of Loja, Loja, Ecuador
METHODOLOGY FOR CONSTRUCTING A SPATIAL ANALYTICAL MODEL OF THE ROUTE OF URBAN PASSENGER TRANSPORT BASED ON THE USE OF BEZIER CURVES

Mikhail Gorodnichev, Anastasiia Lipatova, Kamil Kharrasov, Artem Pavlikov
Moscow Technical University of Communications and Informatics, Moscow, Russia
RESEARCH ON DRIVER MONITORING METHODS

Nikolay Kravchenko, Andrey Timchuk, Grach Mkrtchian
Moscow Technical University of Communications and Informatics, Moscow, Russia
INTELLIGENT DETECTION AND OBJECT LOCALIZATION SYSTEM BASED ON ACOUSTIC DATA

N.G. Kuftinova, A.V. Ostroukh, O.I. Maksimychev, A.A. Podberezkin, A.M. Volkov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia
LARGE LANGUAGE MODEL IN SUBURBAN TRANSPORT DATA MANAGEMENT

I.A. Kuteynikov
Moscow Automobile and Road Construction State Technical University (MADI);
Moscow Technical University of Communications and Informatics, Moscow, Russia
IMPLEMENTATION OF ADAPTIVE METRICS FOR VEHICLE COUNTING ALGORITHM VIA VIDES VIDEO MONITORING SYSTEM

Grach Mkrtchian, Ksenia Poliantseva
Moscow Technical University of Communications and Informatics, Moscow, Russia
ON THE APPLICATION OF ACOUSTIC SENSOR IN THE TASKS OF DETERMINING ROADWAY DEFECTS

M.S. Moseva, K.R. Kharrasov, M.G. Gorodnichev
Moscow Technical University of Communications and Informatics, Moscow, Russia
**NEURAL NETWORK METHOD FOR REMOVING THE EFFECT
OF ATMOSPHERIC NOISE IN AN IMAGE**

A.V. Ostroukh, N.G. Kuftinova, C.B. Pronin, A.M. Ivanov
Moscow Automobile and Road State Technical University (MADI), Moscow, Russia
A.V. Silakov
The Kosygin State University of Russia, Moscow, Russia
**IMPLEMENTING SUBURBAN TRANSPORT DEMAND PLANNING
WITH METAVERSE AND DIGITAL TWIN MODELS**

K.N. Pankov, M.M. Glukhov-jr.
Moscow Technical University of Communications and Informatics, Moscow, Russia
**ON THE PARAMETERS OF ALGEBRAIC GEOMETRIC CODES DESIGNED
TO CONSTRUCT A POST-QUANTUM ALGORITHM FOR ENSURING
INFORMATION SECURITY OF ON-BOARD SYSTEMS**

Artem Pavlikov, Vsevolod Volkogonov, Anastasiia Lipatova
Moscow Technical University of Communications and Informatics, Moscow, Russia
**ON THE APPLICATION OF HUMAN POSE ESTIMATION IN A DRIVER
CONDITION MONITORING TASK**

S.E. Simonov, M.A. Ivanov, M.G. Gorodnichev, I.E. Lyashenko
Moscow Technical University of Communications and Informatics, Moscow, Russia
**DEVELOPMENT OF THE IOT DEVICE FOR PERMANENT DIAGNOSTICS
OF ELECTRIC MOTORS**

M.V. Yashina
Moscow Automobile and Road Construction State Technical University;
Moscow Aviation Institute (Research University);
Moscow Technical University of Communications and Informatics, Moscow, Russia
Ya.A. Akilin, V.O. Osada, P.G. Serov
Moscow Automobile and Road Construction State Technical University, Moscow, Russia
**VIDEO IMAGE RECOGNITION OF CAR TRACK CHARACTERISTICS
AT INTERSECTIONS**

SECTION 6.
Digital signal processing in on-board radio systems
13-00 – 18-00

CHAIRMAN: **Timofey Shevgunov,** *Ph.D., Chair of MTT/ED/AES Moscow Chapter, Moscow Aviation Institute (National Research University), Moscow, Russia, Senior Member, IEEE*

N.A. Andriyanov
Financial University under the Government of the Russian Federation, Moscow, Russia
R.G. Magdeev
Ulyanovsk State Technical University, Ulyanovsk, Russia
V.E. Dementyiev
National Research Mordovia State University, Saransk, Russia
BUILDING STRUCTURES IMAGE MATCHING USING CONVOLUTIONAL NEURAL NETWORK

O.G. Chertova, D.S. Chirov, A.D. Grigorieva, V.O. Varlamov
Moscow Technical University of Communications and Informatics, Moscow, Russia
DEVELOPMENT OF TURBO PRODUCT CODE WITH ELEMENTARY ENCODERS AS LDPC CODE

D.S. Chirov, O.G. Chertova, E.M. Lobov, M.V. Bazylev
Moscow Technical University of Communications and Informatics, Moscow, Russia
CONSTRUCTION OF A COMMUNICATION CHANNEL WITH UAVS BASED ON DIRECT SEQUENCE SPREAD SPECTRUM SIGNALS

V.I. Djigan
Institute for Design Problems in Microelectronics of RAS, Moscow, Russia
MEASURING FAR-FIELD RADIATION PATTERNS OF DIGITAL BEAMFORMING ANTENNA ARRAYS

Evgeny Efimov
Moscow Aviation Institute (National Research University), Moscow, Russia
HARDWARE INTERFACING LIBRARY FOR ANGLE-OF-ARRIVAL ESTIMATION IN APPLIED ARTIFICIAL INTELLIGENCE SYSTEMS

A.A. Frolov, E.D. Pronina, A.V. Svirskaya
Moscow Technical University of Communications and Informatics, Moscow, Russia
METHODOLOGY FOR DEVELOPING CUBESAT REMOTE SENSING SATELLITE

Evgeniy Glushankov, Igor Boyko, Dmitriy Kirik, Konstantin Korovin, Aleksandr Shchedrin
The Bonch-Bruevich St. Petersburg State University of Telecommunications, St. Petersburg, Russia
METHODS TO IMPROVE THE ACCURACY OF STATE ESTIMATION IN NONLINEAR KALMAN FILTER IN CASE OF A PRIORI UNCERTAINTY

Vladimir Grigoriev, Alexander Komissarov
Limited Liability Company "Laboratory of Infocommunication Networks", Saint Petersburg, Russia
Konstantin Ryutin, Grigoriy Fokin (*Member, IEEE*)
The Bonch-Bruevich Saint Petersburg State University of Telecommunications, Saint Petersburg, Russia
SOFTWARE-DEFINED RADIO WIRELESS COMMUNICATION TECHNOLOGY DESIGN. LIBRESDR BOARD VALIDATION

Oksana Guschina
Moscow Aviation Institute (National Research University), Moscow, Russia
APPLICATION OF WINDOW FUNCTIONS FOR ESTIMATION OF SPECTRAL CORRELATION FUNCTIONS

A.S. Gvozdarev, T.K. Artemova, Roman Manahov, Semen Mozzhukhin, Andrey Veselkov
P.G. Demidov Yaroslavl State University, Yaroslavl, Russia
ENERGY-BASED SPECTRUM SENSING OVER THE SEVERE FADING CHANNELS

L.M. Kazadaev, A.I. Sattarova, K.Yu. Ryumshin
Moscow Technical University of Communications and Informatics, Moscow, Russia
INVESTIGATION OF THE OCDM-OCHDM MODULATION NOISE IMMUNITY IN UNDERWATER CHANNELS

V.D. Klyuchnikov, A.I. Sattarova, D.C. Tsoi, K.Yu. Ryumshin, L.M. Kazadaev
Moscow Technical University of Communications and Informatics, Moscow, Russia
RESEARCH OF THE EFFICIENCY OF USING LDPC, TURBO PRODUCT AND POLAR CODES WITH OCDM-OCHDM

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