

Institute of Radio and Information Systems (IRIS)
Institute of Electrical and Electronics Engineers (IEEE)
Media Publisher Ltd

International Scientific Conference

**«2022 SYSTEMS OF SIGNALS GENERATING
AND PROCESSING IN THE FIELD
OF ON BOARD COMMUNICATIONS»**

(IEEE Conference # 53456)

15-17 March 2022

CONFERENCE PROGRAM

**Moscow
2022**

CONFERENCE ORGANIZERS

INSTITUTE OF RADIO AND INFORMATION SYSTEMS (IRIS)
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
MEDIA PUBLISHER 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 1:* Peculiarities of data exchange in cooperative ITS
 - Sub-section 2:* Test methods of motor vehicles integrated into an intelligent transport environment
 - Sub-section 3:* Improving the power plants of intelligent vehicles
 - Sub-section 4:* Theoretical Aspects of Artificial Intelligence Systems Development 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

15 March 2022 (Tuesday)

TRACK 1

- 10-00 — 10-30** **Registration of participants** (*регистрация участников*)
- 10-30 — 10-40** **Opening remarks of the conference organizers**
(*вступительное слово организаторов конференции*)
- 10-40 — 13-20** **Conference section 1** (*работа секции 1*)
- 14-00 — 15-40** **Conference section 2** (*работа секции 2*)
- 16-00 — 17-40** **Conference section 3** (*работа секции 3*)

TRACK 2

- 10-40 — 19-20** **Conference section 5 (sub-section 1)**
(*работа секции 5: подсекция 1*)

TRACK 3

- 10-40 — 14-10** **Conference section 6 (sub-section 1)**
(*работа секции 6: подсекция 1*)
- 15-00 — 19-00** **Conference section 6 (sub-section 2)**
(*работа секции 6: подсекция 2*)

16 March 2022 (Wednesday)

TRACK 1

- 10-00 — 12-20** **Conference section 5 (sub-section 2)**
(*работа секции 5: подсекция 2*)
- 13-00 — 15-20** **Conference section 5 (sub-section 3)**
(*работа секции 5: подсекция 3*)

TRACK 2

- 10-00 — 18-20** **Conference section 5 (sub-section 4)**
(*работа секции 5: подсекция 4*)

TRACK 3

10-00 — 13-30 **Conference section 6 (sub-section 3)**
(работа секции 6: подсекция 3)

15-00 — 19-00 **Conference section 6 (sub-section 4)**
(работа секции 6: подсекция 4)

17 March 2022 (Thursday)

TRACK 2

10-00 — 19-00 **Conference section 4** *(работа секции 4)*

TRACK 1

10-00 — 13-20 **Conference section 7** *(работа секции 7)*

TRACK 1

18-20 — 18-40 **Conference results and laureates announcement**

March 15, 2022 (Tuesday)

SECTION 1
Antennas and Radio Waves Propagation

SECTION CHAIRMEN: Vadim A. Kaloshin, *Doctor of Sciences (Engineering),
IEEE Region 8, Chair of AP Moscow Chapter,
Vice-chair of MTT/ED/AES Moscow Chapter,
Senior Member, IEEE*

10-40 – 11-00

Elchin V. Gadzhiev, Elena V. Ovchinnikova

Moscow Aviation Institute (National Research University), Moscow, Russia

Svetlana G. Kondratieva, Pavel A. Smachilin

*Moscow Aviation Institute (National Research University), Moscow, Russia;
Peoples Friendship University of Russia (RUDN University), Moscow, Russia*

ON-BOARD X-BAND ANTENNA ARRAY

11-00 – 11-20

Sadi M. Karimov

Tajik Technical University Named after Academician M.S. Osimi, Dushanbe, Tajikistan

Abdulmusavvir A. Karimov

Moscow Polytechnic University, Moscow, Russia

Dilshod Ch. Ravshanov (*Member, IEEE*)

Tajik Technical University Named after Academician M.S. Osimi, Dushanbe, Tajikistan

**DEVELOPMENT OF A MICROSTRIP COUPLER WITH REDUCED
DIMENSIONS**

11-20 – 11-40

Sergey Yu. Kazantsev (*Member, IEEE*), **Alexander S. Brusentsev, Pavel A. Titovets,
Kerry M. Bellune**

Moscow Technical University of Communications and Informatics, Moscow, Russia

Nikolay N. Bogachev

Prokhorov General Physics Institute of the Russian Academy of Sciences, Moscow, Russia

CONFIGURABLE PLASMA ANTENNA WITH LASER CONTROL

11-40 – 12-00

Phillimon Makibinyane, Pius. A. Owolawi, Gbolahan Aiyetoro

Tshwane University of Technology, Pretoria, South Africa

**ESTIMATION OF CROSS POLARIZATION DUE TO RAIN OVER SOME
STATIONS IN SOUTH AFRICA**

12-00 – 12-20

V. F. Mikhailov, I. V. Mazhnik

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

CALCULATION OF RADIATION CHARACTERISTICS OF A CIRCULAR WAVEGUIDE COVERED WITH THERMAL PROTECTION AND PLASMA LAYER

12-20 – 12-40

Yu. B. Nechaev, I. W. Peshkov

Bunin Yelets State University, Yelets, Russia

SIMULATION OF DIGITAL AND ANALOG SPATIAL FILTERING OF VHF SIGNALS IN CHANNEL WITH LOSSES DUE TO MULTIPLE DIFFRACTION

12-40 – 13-00

Dilshod Ch. Ravshanov (*Member, IEEE*)

Tajik Technical University named after academician M.S. Osimi, Dushanbe, Tajikistan

Evgeniy B. Bablyuk, Abdulmusavvir A. Karimov

Moscow Polytechnic University, Moscow, Russia

STRIPLINE QUADRATURE COUPLER DESIGN

13-00 – 13-20

Vladimir N. Repinsky, Nikita V. Belov

Moscow Technical University of Communications and Informatics, Moscow, Russia

MINIMIZATION OF TRANSIENT DISTORTIONS IN THE IONOSPHERIC WAVE RECEPTION SYSTEM BY A PHASED ARRAY ANTENNA WITH CONTROLLED POLARIZATION CHARACTERISTIC

March 15, 2022 (Tuesday)

SECTION 2
Navigation and Mathematical Algorithms
of an Object Space Orientation

SECTION CHAIRMEN: Grigoriy A. Fokin, *Doctor of Sciences (Engineering),
The Bonch-Bruевич Saint Petersburg State University
of Telecommunications, Member, IEEE*

14-00 – 14-20

Andrei G. Erokhin, Margarita F. Vanina, Elena A. Frolova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**MODELING THE PERFORMANCE OF ONBOARD DATA SERVER
WITH RANDOM INPUT INFORMATION STREAM**

14-20 – 14-40

Grigoriy Fokin (*Member, IEEE*), **Dmitriy Volgushev**

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

**SOFTWARE-DEFINED RADIO NETWORK POSITIONING TECHNOLOGY
DESIGN. PROBLEM STATEMENT**

14-40 – 15-00

Zoya V. Ilyichenkova, Svetlana M. Ivanova

MIREA - Russian Technological University, Moscow, Russia

Andrey I. Volkov

Moscow Technical University of Communications and Informatics, Moscow, Russia

Alla Yu. Ermakova

MIREA - Russian Technological University, Moscow, Russia

**TRAJECTORY CORRECTION OF AUTONOMOUS OBJECTS
IN THE PRESENCE OF RESTRICTIONS**

15-00 – 15-20

Dmitrii A. Mikhailik, Yuriy V. Kozlov, Ivan V. Malygin

Ural Federal University, Yekaterinburg, Russia

**DESIGN AND STUDY OF AN ANTENNA SYSTEM FOR RECEIVING
TELEMETRY INFORMATION FROM SPACECRAFT CUBESAT**

15-20 – 15-40

Margarita F. Vanina, Andrei G. Erokhin, Elena A. Frolova

Moscow Technical University of Communications and Informatics, Moscow, Russia

**ANALYTICAL MODEL THE DATA TRANSMISSION MEDIUM OF THE
ON-BOARD INFORMATION SYSTEM IN THE ETHERNET STANDARD**

March 15, 2022 (Tuesday)

**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*

16-00 – 16-20

G. M. Aristarkhov, A. V. Markovskiy

Moscow Technical University of Communications and Informatics, Moscow, Russia

HIGHLY-SELECTIVE TWO-RESONATOR MICROSTRIP LOW-PASS FILTERS

16-20 – 16-40

Svetlana F. Gorgadze, Anton A. Maksimov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**TECHNIQUE FOR STUDYING MOBILE COMMUNICATIONS SYSTEMS
SIGNAL POWER AMPLIFIER EFFICIENCY**

16-40 – 17-00

S. V. Pavlov, V. V. Maklachkova, V. A. Dokuchaev

Moscow Technical University of Communications and Informatics, Moscow, Russia

**METHODOLOGY ASPECTS FOR RADIO RECEIVERS DEVELOPMENT
OF TECHNICAL MONITORING EQUIPMENT**

17-00 – 17-20

Elizabeth I. Chekmareva, Irina S. Sineva (Member, IEEE), Olga A. Slatina

Moscow Technical University of Communications and Informatics, Moscow, Russia

**INTELLIGENT SYSTEM FOR COMMUNICATING WITH SPECIAL
AIRCRAFT PASSENGERS**

17-20 – 17-40

Oleg V. Varlamov (Senior Member, IEEE)

Moscow Technical University of Communications and Informatics, Moscow, Russia

**THEORETICAL APPROACH TO CALCULATING REVERSE
INTERMODULATION DISTORTION IN CLASS D RF POWER
AMPLIFIERS**

March 15, 2022 Tuesday

SECTION 5
Intelligent Transport Systems

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*

SUB-SECTION 1
Peculiarities of data exchange in cooperative ITS

Chairman: *S.V. Zhankaziev, Doctor of Technical Sciences, Professor
Moscow automobile and road construction state technical University*

10-40 – 10-50

Opening remarks of the section chairman

10-50 – 11-10

Maria A. Fineeva, Yuri E. Vasiliev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

Aleksey A. Caesar, Sergey V. Varshavsky

*Small innovative enterprise "Monitoring of Highways and Road Technologies",
"MADiDT", Moscow, Russia*

DESIGN AND ACTUALIZATION OF THE ROAD DATABASE

11-10 – 12-30

D. V. Gadasin, A. V. Shvedov, I. S. Vakurin

Moscow Technical University of Communications and Informatics, Moscow, Russia

**DETERMINATION OF SEMANTIC PROXIMITY OF NATURAL LANGUAGE
TERMS FOR SUBSEQUENT NEURAL NETWORK TRAINING**

12-30 – 12-50

Mikhail G. Gorodnichev, Ksenia A. Polyantseva, Pavel Pushkarev, Gleb G. Vlasov

Moscow Technical University of Communications and Informatics, Moscow, Russia

**RESEARCH AND DEVELOPMENT OF THREE-DIMENSIONAL CONVOLUTION
METHODS IN NEURAL NETWORKS**

12-50 – 13-10

A. K. Kanaev (*Member, IEEE*), **E. V. Login**, **F. A. Proshin**

Emperor Alexander I Saint-Petersburg State Transport University, Saint-Petersburg, Russia

**CONCEPTUAL MODEL OF PERSPECTIVE CARRIER ETHERNET
TRANSPORT COMMUNICATION NETWORK CONTROL SYSTEM FOR PUBLIC
JOINT STOCK COMPANY «RUSSIAN RAILWAYS»**

13-10 – 13-30

Alexander A. Kudryavtsev, **Petr O. Voronov**, **Vladimir M. Vlasov**

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**FEATURES OF DATA EXCHANGE OF HIGHLY AUTOMATED PUBLIC
TRANSPORT WITH A CONTROL SYSTEM**

13-30 – 13-50

N. G. Kuftinova, **O. I. Maksimychev**, **A. V. Ostroukh**, **A. V. Volosova**

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

E. N. Matukhina

Moscow Technological University (MIREA), Moscow, Russia

**DATA FABRIC AS AN EFFECTIVE METHOD OF DATA MANAGEMENT IN
TRAFFIC AND ROAD SYSTEMS**

13-50 – 14-40
DINNER

14-40 – 15-00

Alexey V. Lebedev, **Lilia I. Voronova** (*Member, IEEE*)

Moscow Technical University of Communications and Informatics, Moscow, Russia

**ANALYSIS OF NETWORK TRAFFIC IN TELECOMMUNICATION
NETWORKS OF A TRANSPORT COMPANY**

15-00 – 15-20

Grigory V. Malshakov

Moscow Aviation Institute (National Research University), Moscow, Russia

**A METHOD FOR ASSESSING THE INTEROPERABILITY OF APPLICATION
SOFTWARE BASED ON OBJECT-ORIENTED POLYCHROMATIC SETS
OF COMPOSITION AND PROPERTIES OF THEIR DATA**

15-20 – 15-40

Igor F. Mikhalevich

Russian University of Transport (Moscow Institute of Transport Engineers), Moscow, Russia

**PRIORITY WAYS TO ENSURE CYBERSECURITY OF COOPERATIVE
INTELLIGENT TRANSPORT SYSTEMS**

15-40 – 16-00

Roman V. Mironov, Kirill M. Sidorov, Aleksandr G. Grishchenko

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

PRACTICAL IMPLEMENTATION OF AN EV PROPULSION SYSTEM COMPONENTS CONTROL AND DIAGNOSIS

16-00 – 16-20

Victor A. Netes

Moscow Technical University of Communications and Informatics, Moscow, Russia

A GENERAL APPROACH TO DEPENDABILITY ASSESSMENT OF INTELLIGENT TRANSPORT SYSTEMS

16-20 – 16-40

Nikolay V. Podoprigora

Saint-Petersburg State University of Architecture and Civil Engineering, Saint-Petersburg, Russia

Alexey V. Marusin

Saint-Petersburg State University of Architecture and Civil Engineering, Saint-Petersburg, Russia;

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

Friendship University of Russia (RUDN University), Moscow, Russia

Pavel A. Pegin

Federal State Budgetary Educational Institution of Higher Education "Saint-Petersburg State University of Civil Aviation", Saint-Petersburg, Russia

Ekaterina A. Karelina

The State University of Management, Moscow, Russia

Alexey A. Akulov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

SYSTEMATIC APPROACH IN INFORMATION SUPPORT OF THE «ROAD USER-VEHICLE-ROAD-EXTERNAL ENVIRONMENT» SYSTEM

16-40 – 17-00

Albina V. Pomogalova

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

Evgeny A. Donskov

St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, Saint-Petersburg, Russia

Vasiliy S. Elagin, Andrei G. Vladyko (Member IEEE)

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

METHODS FOR EVALUATING NETWORK CHARACTERISTICS ON BLOCKCHAIN-V2X SYSTEM NODES

17-00 – 17-20

Yuri E. Vasiliev, Maria A. Fineeva

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

Aleksey A. Caesar, Sergey V. Varshavsky

Small innovative enterprise "Monitoring of Highways and Road Technologies", "MADiDT", Moscow, Russia

DECISION SUPPORT SYSTEM FOR REPAIR OF STREET AND ROAD NETWORK FACILITIES

17-20 – 17-40

A. I. Vorobyev, A. Yu. Zabudskiy, V. V. Dronseiko, D. Yu. Morozov,

A. A. Koveshnikov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

RESEARCH OF THE LEVEL OF DRIVER INVOLVEMENT IN THE MANAGEMENT OF A HIGHLY AUTOMATED VEHICLE

17-40 – 18-00

A. I. Vorobyev, N. S. Golubchenko, A. A. Koveshnikov, T. V. Vorobyeva,

D. Yu. Morozov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

ENSURING THE SAFE MOVEMENT OF HIGHLY AUTOMATED VEHICLES BY MEANS OF DIGITAL ROAD MODEL TECHNOLOGY

18-00 – 18-20

E. A. Voronin, S. V. Kozlov

Federal Research Center "Computer Science and Control" of Russian Academy of Sciences, Moscow, Russia

A. N. Kubankov

Moscow Technical University of Communications and Informatics, Moscow, Russia

METHODOLOGY FOR ASSESSING THE LEVEL OF THREATS BASED ON A LIMITED SET OF DATA WHILE ENSURING THE SAFETY OF ON-BOARD SYSTEMS

18-20 – 18-40

A. V. Zamytskih, S. V. Zhankaziev, V. V. Dronseiko, E. A. Shalagina, M. G. Pletnev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

DETERMINATION OF INSTANT SOCIAL RISK FOR A MOVING VEHICLE

18-40 – 19-00

S. V. Zhankaziev, M. V. Gavrilyuk, A. V. Zamytskih

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

A. A. Zubkov

“MVS Group”, Moscow, Russia

A. A. Koveshnikov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**DETERMINATION OF THE COEFFICIENT CONFLICT OF TRAFFIC FLOW
IN REAL TIME BY MEANS OF INTELLIGENT TRANSPORT SYSTEMS**

19-00 – 19-20

P. A. Zolotukhin, E. K. Melkova, D. V. Gadasin, V. M. Korovushkina

Moscow Technical University of Communications and Informatics, Moscow, Russia

**USING INTELLIGENT TESTING AS A TOOL TO IMPROVE THE QUALITY
OF TRANSPORT INFORMATION SYSTEMS**

March 15, 2022 (Tuesday)

SECTION 6.

Digital signal processing in on-board radio systems

SUB-SECTION 1

CHAIRMEN: **Vladimir E. Martirosov**, *Professor of Moscow Aviation Institute (National Research University), Moscow, Russia*

10-40 – 11-00

G. A. Alekseev, V. E. Martirosov

Moscow Aviation Institute (National Research University), Moscow, Russia

COMPARISON OF DYNAMIC CHARACTERISTICS OF BPSK SIGNAL DEMODULATORS BASED ON COSTAS AND GLSS STRUCTURES

11-00 – 11-20

V. E. Martirosov, G. A. Alekseev

Moscow Aviation Institute (National Research University), Moscow, Russia

ADDITIVE HIGH-SPEED SYNCHRONIZATION TECHNIQUES IN PLL SYSTEMS

11-20 – 11-40

V. A. Abramov, O. B. Popov, T. V. Chernysheva, V. O. Peruanskiy, P. G. Kuznetsov

Moscow Technical University of Communications and Informatics, Moscow, Russia

FREQUENCY ANALYSIS OF SOUND BROADCASTING SIGNAL PARAMETERS

10-40 – 12-00

M. I. Ashryapov

JSC CNIRTI named akademika A.I. Berga, Moscow, Russia

D. A. Okhotnikov

Moscow Aviation Institute (National Research University), Moscow, Russia

DETECTION OF DOPPLER SIGNATURES OF COMPLEX SHAPES USING THE WAVELET CORRELATION ALGORITHM

12-00 – 12-20

M. G. Bakulin, V. B. Kreindelin, D. Y. Pankratov, A. G. Stepanova

Moscow Technical University of Communications and Informatics, Moscow, Russia

MODIFIED NEWTON'S METHOD IN MASSIVE MIMO DEMODULATION WITH NON-GAUSSIAN APPROXIMATION

12-20 – 12-40

I. V. Nelin

Moscow Aviation Institute (National Research University), Moscow, Russia

S. I. Elizavetina

Joint-Stock Company "Production Association "Ural Optical and Mechanical Plant named after Mr. E.S. Yalamov", Moscow, Russia

M. S. Vinogradov

Moscow Aviation Institute (National Research University), Moscow, Russia

METHODS OF RADAR IMAGE PROCESSING TO INCREASE THE PROBABILITY OF DETECTING A SHIP'S TRACK AND ESTIMATING ITS ABSOLUTE SPEED

12-40 – 13-00

Vladimir Yu. Volkov

Saint-Petersburg State Electrotechnical University (LETI), Saint-Petersburg, Russia;

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

OBJECT DISTINCTION IN NOISY IMAGES

13-00 – 13-20

I. O. Volkov, V. S. Priputin, E. A. Liberman

Moscow Technical University of Communications and Informatics, Moscow, Russia

MULTIPHASE PWM SIGNAL GENERATOR MODEL DESIGN FOR EFFECTIVE CLASS D AMPLIFIER

13-20 – 13-40

Z. B. Gadzhieva

Bauman Moscow State Technical University (National Research University), Moscow, Russia

G. N. Kazakov

Moscow Aviation Institute (National Research University), Moscow, Russia

NONLINEAR DISTORTIONS COMPENSATION OF AMPLITUDE PHASE SHIFT KEYING SIGNALS WITH DIFFERENT ORDERS IN COMMUNICATION CHANNELS

13-40 – 14-00

Evgeniy I. Glushankov, Dmitriy I. Kirik, Igor A. Boyko, Andrey A. Khrenov, Konstantin O. Korovin

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

SPATIAL SIGNAL PROCESSING IN CENTRALLY SYMMETRIC LINEAR AND CIRCULAR ANTENNA ARRAYS

QUESTIONS

14-00 – 14-10

March 15, 2022 (Tuesday)

SECTION 6.
Digital signal processing in on-board radio systems

SUB-SECTION 2

CHAIRMEN: **Vladimir I. Volovach**, *Volga Region State University of Service, Member, IEEE, Togliatty city, Russia*

15-00 – 15-20

Vladimir M. Artyushenko

Technological University, Korolev, Russia

Vladimir I. Volovach (Member IEEE)

Volga Region State University of Service, Togliatty city, Russia

USING THE POLY-GAUSSIAN MODELS TO REPRESENT NON-GAUSSIAN SIGNALS AND NOISES

15-20 – 15-40

Timofey Shevgunov (Senior Member IEEE)

Moscow Aviation Institute (National Research University), Moscow, Russia

SOFTWARE ANALYZER OF SPECTRAL CORRELATION FUNCTIONS USING A LOW-COST SDR RECEIVER

15-40 – 16-00

Mikhail G. Bakulin, Taoufik Ben Rejeb, Vitaly B. Kreyndelin, Denis Y. Pankratov, Aleksei E. Smirnov

Moscow Technical University of Communications and Informatics, Moscow, Russia

PERFORMANCE ANALYSIS OF UPLINK NON-ORTHOGONAL MULTIPLE ACCESS (NOMA)

16-00 – 16-20

Alexander S. Griбанov, Denis A. Okhotnikov, Dmitrii S. Krasavin

Moscow Aviation Institute (National Research University), Moscow, Russia

THE USE OF A RADIO NAVIGATION SYSTEM FOR LANDING A ROTARY-WING AIRCRAFT ON THE DECK OF A SHIP IN ADVERSE WEATHER CONDITIONS

16-20 – 16-40

N. L. Dembitsky

Moscow Aviation Institute (National Research University), Moscow, Russia;

ANALOG SELF-LEARNING AUTOMATA OF RADIO ENGINEERING DEVICES BASED ON CYBER-PHYSICAL NETWORKS

16-40 – 17-00

S. N. Eliseev

Moscow Technical University of Communications and Informatics, Moscow, Russia

L. N. Filimonova

Povolzhskiy State University of Telecommunications and informatics (PSUTI), Samara, Russia

**ON THE ESTIMATION OF THE ICI IN OFDM IN CONDITIONS
MULTIPATH DOPPLER SPREADING AND CARRIER FREQUENCIES OFFSET**

17-00 – 17-20

Dmitry A. Yasentsev, Boris G. Tatarskiy

Moscow Aviation Institute (National Research University), Moscow, Russia

**INVESTIGATION OF SAR RESOLUTION AT TRANSLATIONAL AND
ROTATIONAL MOTION OF INTERLINKED ANTENNA PHASE CENTERS**

17-20 – 17-40

**Renat F. Zaripov, Ilya M. Lerner (Member IEEE), Marat M. Fatykhov,
Vladislav L. Odintsov**

*Kazan National Research Technical University n.a. A.N. Tupolev – KAI (KNRTU-KAI),
Kazan, Russia*

Vladimir I. Il'in

Kazan (Volga region) Federal University, Kazan, Russia

**ANALYSING THE CLASSICAL SIGNAL DETECTION IN CHANNELS
WITH COMPLEX INTERFERENCE-NOISE ENVIRONMENT**

17-40 – 18-00

N. A. Kandaurov, E. O. Lobova, V. O. Varlamov

Moscow Technical University of Communications and Informatics, Moscow, Russia

ANALYSIS OF INTERFERENCE HF RANGE

18-00 – 18-20

Vitaly B. Kreyndelin, Mikhail G. Bakulin

Moscow Technical University of Communications and Informatics, Moscow, Russia

Andrey A. Reznev

ATLAS, Moscow, Russia

**IMPROVED SPACE TIME CODES THROUGH ORTHOGONAL
TRANSFORMATION**

**QUESTIONS
18-20 – 19-00**

March 16, 2022 (Wednesday)

SECTION 5. SUB-SECTION 2
**Test methods of motor vehicles integrated
into an intelligent transport environment**

CHAIRMANS: *A.M. Ivanov, Doctors of Technical Sciences, Professor
Moscow auto mobile and road construction state technical University*
*S.S. Shadrin, Doctors of Technical Sciences, Professor
Moscow automobile and road construction state technical University*

10-00 – 10-20

Ph. K. Dyakov, A. N. Andreev, A. M. Ivanov

*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

A.I. Kalinin

Moscow, Russia

**MUD-SNOW LAYER ACCUMULATION ON ADAPTIVE CRUISE CONTROL
(ACC) SYSTEM RADAR AND THICKNESS MEASUREMENT OF IT**

10-20 – 10-40

S. M. Gaidar

*Russian State Agrarian University - Moscow Timiryazev Agricultural Academy Moscow,
Russia*

M. Yu. Karelina, A. A. Akulov, V. S. Ershov, D. S. Taldykin

*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

**MATHEMATICAL METHOD FOR OPTIMISING THE TRANSPORT
AND LOGISTICS INDUSTRY**

10-40 – 11-00

Andrey M. Ivanov, Sergey S. Shadrin, Daria A. Makarova

*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

**THE ANALYSIS OF INTERNATIONAL STANDARDS IN THE FIELD OF
SAFETY REGULATION OF HIGHLY AUTOMATED AND AUTONOMOUS
VEHICLES**

11-00 – 11-20

M. Yu. Karelina, A. A. Akulov, V. S. Ershov, B. S. Subbotin, D. S. Taldykin

*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

**FORECASTING THE SERVICE LIFE OF PAINT COATINGS IN AGGRESSIVE
ENVIRONMENTS**

11-20 – 11-40

S. R. Kristalniy, N. V. Popov, A. M. Ivanov, Ph. K. Dyakov, A. N. Andreev
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**EVALUATION OF THE JOINT INTERACTION OF AUTOMATIC
EMERGENCY BRAKING AND ADAPTIVE CRUISE CONTROL SYSTEMS**

11-40 – 12-00

P. A. Nikolaev, V. N. Kozlovsky, A. S. Podgorny
Samara State Technical University, Samara, Russia

Vladimir I. Stroganov, Elshan M. Abbasov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**DEVELOPMENT OF METHODS AND TOOLS FOR TESTING MODERN
PASSENGER CARS FOR NOISE IMMUNITY OF ON-BOARD ELECTRICAL
COMPLEX**

12-00 – 12-20

Sergey S. Shadrin, Andrey M. Ivanov, Daria A. Makarova
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**THE CONCEPT OF HIGHLY AUTOMATED VEHICLES SAFETY
MONITORING IN OPERATION USING VIRTUAL TESTING PROCEDURES**

12-20 – 13-00
DINNER

March 16, 2022 (Wednesday)

SECTION 5. SUB-SECTION 3
Improving the power plants of intelligent vehicles

Chairman: M.G. Shatrov, Doctors of Technical Sciences, Professor
Moscow automobile and road construction state technical University

13-00 – 13-20

Thin Quynh Nguyen

University of Transport and Communications

Andrey Y. Dunin, Dung Nguyen Van, Elmira U. Akhmetzhanova

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**COMPUTER SIMULATION OF THE HHO GAS POWER UNIT
FOR THE DEVELOPMENT OF AN ELECTRONIC CONTROL SYSTEM**

13-20 – 13-40

**Eduard A. Savastenko, Alexander S. Stryapunin, Andrey A. Savastenko,
Leonid N. Golubkov**

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**CONTROL OF THE FUEL-AIR MIXTURE OF PROPANE-BUTANE WITH
THROTTLE REGULATION BY FLOW SIMULATION IN THE FLOWVISION
SOFTWARE PACKAGE**

13-40 – 14-00

S. V. Shelmakov, Yu. V. Trofimenko, D. A. Deianov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**ENGINEERING METHODOLOGY FOR DETERMINING THE ELECTRIC
POWER CONSUMPTION FOR TRACTION BY AN ELECTRIC VEHICLE IN
DIFFERENT OPERATING CONDITIONS**

14-00 – 14-20

**Vladimir V. Sinyavski, Mikhail G. Shatrov, Leonid N. Golubkov,
Vladislav V. Kremnev, Yuri V. Trofimenko**

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**USING SOFTWARE SIMULATION FOR COMPARATIVE ANALYSIS
OF OPERATING PARAMETERS OF V8 AND L6 DIESEL ENGINES HAVING
THE SAME DISPLACEMENT AND POWER**

14-20 – 14-40

Yu. W. Trofimenko, T. Yu. Grigoreva, K. R. Korobeynikova, A. Yu. Chekanov
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

REQUIREMENTS FOR INTELLIGENT SAFETY MONITORING SYSTEMS OF VEHICLES AND INFRASTRUCTURE USING GAS MOTOR FUEL (NATURAL GAS, HYDROGEN)

14-40 – 15-20

Andrey L. Yakovenko, Mikhail G. Shatrov, Igor V. Alekseev, Alexander A. Predein, Yury V. Trofimenko
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

RESEARCH OF DIESEL STRUCTURE-BORNE NOISE USING MODERN MODELING METHODS

March 16, 2022 (Wednesday)

SECTION 5. SUB-SECTION 4
**Theoretical Aspects of Artificial Intelligence Systems Development
for Transportation Engineering**

Chairman *M.V. Yashina, Doctors of Sciences (Physical and mathematical),
automobile and road construction state technical University,
Member, IEEE*

10-00 – 10-20

P. A. Bakulov, V. M. Vlasov

*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

**ACOUSTIC FAULT TRACE AS A DIAGNOSTIC PARAMETER OF MODERN
VEHICLES**

10-020 – 10-40

V. N. Bogumil, J. E. Kasimov

*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

**DEVELOPMENT OF THE ARCHITECTURE OF THE ON-BOARD ASSIS-
TANCE SYSTEM FOR THE DRIVER OF A CITY BUS BASED ON THE USE
OF A FUZZY LOGIC APPARATUS**

10-40 – 11-00

A. V. Brega

Moscow Technical University of Communications and Informatics, Moscow, Russia

O. V. Erokhina

Financial University under the Government of the Russian Federation, Moscow, Russia

**SMART CITY TRANSPORT TECHNOLOGIES: INFRASTRUCTURE
OF THE FUTURE**

11-00 – 11-20

**Alexander A. Chernyshev, Ekaterina A. Koryagina, Dmitry G. Moroz, Svetlana S.
Titova**

*Moscow Automobile and Road Construction State Technical University (MADI), Moscow,
Russia*

**THE USE OF ARTIFICIAL NEURAL NETWORKS (ANN) AS AN AUXILIARY
FACTOR IN PLANNING TRANSPORTATION ROUTES**

11-20 – 11-40

I. V. Demijanushko, V. S. Nadezhdin, A. S. Gruzdev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**APPLICATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGY
TO DETERMINE THE NEED FOR REPAIR WORK OF ROAD ELEMENTS**

11-40 – 12-00

Kh. A. Dzhabrailov, M. E. Chantieva

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

Moscow Technical University of Communications and Informatics, Moscow, Russia

E. V. Marsova, P. A. Selezneva, P. A. Lygin

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

DIGITAL CONTROL SYSTEM FOR LEVELING OF CONSTRUCTION SITES

12-00 – 12-20

V. V. Filatov, V. A. Klimenko

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

E. A. Karelina

RUDN, Moscow, Russia

D. A. Ptitsyn, V. A. Erpulev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**THEORETICAL ASPECTS OF THE CREATION OF ARTIFICIAL
INTELLIGENCE SYSTEMS IN TRANSPORT**

12-20 – 12-40

Andrey L. Gorbunov

Moscow State Technical University of Civil Aviation, Moscow, Russia

E. E. Nechaev

Moscow Aviation Institute (National Research University), Moscow, Russia

**AUGMENTED REALITY TECHNOLOGIES IN AIR TRANSPORT CONTROL
SYSTEMS**

12-40 – 13-00

M. Yu. Karelina, A. V. Vasiliev, V. V. Guly, A. V. Podgorny, V. A. Erpulev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

ROBOTIC SYSTEMS IN ROAD CONSTRUCTION

13-00 – 14-00
DINNER

14-00 – 14-20

Boris S. Kerner

University of Duisburg-Essen, Duisburg, Germany

Sergey L. Klenov

Moscow Institute of Physics and Technology, Moscow, Russia

MICROSCOPIC TRAFFIC PREDICTION FOR AUTOMATED DRIVING

14-20 – 14-40

N. A. Kulakov

Moscow Polytech, Moscow, Russia

I. V. Demyanushko

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

E. V. Gavrilov

Moscow Polytech, Moscow, Russia

ANALYSIS OF HEAD INJURY CRITERION IN CASE OF ACCIDENTS IN ROAD TRANSPORT FOR USING IN INTELLIGENT SYSTEMS

14-40 – 15-00

Varvara M. Makurina, Artem I. Zhukov, Dmitry G. Moroz, Filipp V. Akopov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

THEORETICAL APPROACHES TO IMPROVING THE EFFICIENCY OF BUSINESS PROCESSES OF PASSENGER TRANSPORT ENTERPRISES THROUGH THE INTRODUCTION OF MODERN DIGITAL TECHNOLOGIES

15-00 – 15-20

Pavel I. Pospelov, Oleg S. Lavrov, Vladislav O. Vanin, Yulia S. Savchenkova

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

Marina V. Yashina

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

Moscow Aviation Institute (Research University), Moscow, Russia;

Moscow Technical University of Communications and Informatics, Moscow, Russia

VIDEO-BASED METHOD OF MARKOVIAN MATRIX RECOVERY FOR ROAD INTERSECTION CONTROL

15-20 – 15-40

C. B. Pronin, O. I. Maksimychev, A. V. Ostroukh, A. V. Volosova

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

E. N. Matukhina

Moscow Technological University (MIREA), Moscow, Russia

CREATING QUANTUM CIRCUITS FOR TRAINING PERCEPTRON NEURAL NETWORKS ON THE PRINCIPLES OF GROVER'S ALGORITHM

15-40 – 16-00

V. S. Seleznev, E. O. Antonova, A. V. Iluhin, R. A. Gematudinov, L. Yu. Isaeva
Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

IDENTIFICATION OF ROAD DEFECTS WITH A SMART CAMERA

16-00 – 16-20

Petr I. Smirnov

Institute of Mechanical Engineering, Energy and Transport Vologda State University, VOGU, Vologda, Russia

Boris S. Subbotin

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

E. A. Karelina

The State University of Management, Moscow, Russia

A. V. Vasilyev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

MODELING THE MOVEMENT OF TRUCKS IN A TRAFFIC FLOW OF HIGH DENSITY

16-20 – 16-40

M. V. Yashina (Member IEEE), A. G. Tatashev

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

Moscow Technical University of Communications and Informatics, Moscow, Russia

D. A. Buslaev, E. N. Serebryakov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

EVALUATION OF V2X COMMUNICATION ARCHITECTURE CHARACTERISTICS BASED ON LOSS QUEUEING SYSTEM WITH BANDWIDTH SHARING DISCIPLINE

16-40 – 17-00

Marina A. Trapeznikova, Natalia G. Churbanova

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

Keldysh Institute of Applied Mathematics RAS (KIAM), Moscow, Russia

Antonina A. Chechina, Alexey V. Ermakov, Mikhail S. German

Keldysh Institute of Applied Mathematics RAS (KIAM), Moscow, Russia

VISUAL ENVIRONMENT FOR MATHEMATICAL MODELING OF TRAFFIC FLOWS

17-00 – 17-20

Ekaterina N. Vasilieva, Evginiy S. Vasiliev

Volgograd State University, Volgograd, Russia

Yaroslavna S. Artamonova

Moscow Technical University of Communications and Informatics, Moscow, Russia

Galina V. Brega

Financial University under the Government of the Russian Federation, Moscow, Russia

**THE SMART CITY PROJECT AS A BASIS FOR THE DEVELOPMENT OF
NEW TECHNOLOGIES TO PROVIDE PEOPLE WITH LIMITED MOBILITY
WITH AN ACCESSIBLE ENVIRONMENT**

17-20 – 17-40

Alexandra V. Volosova, Oleg I. Maksimychev, Andrey V. Ostroukh,

Mukamadzhon I. Ismoilov, Igor E. Saakyan

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**UNCERTAINTY PROCESSING BY TENSOR ALGEBRA MEANS
IN CONDITION OF MOVEMENT ALONG COMPLEX ROADS**

17-40 – 18-00

Anatoly N. Yakubovich, Elena V. Shashina, Yu. V. Trofimenko, Irina A. Yakubovich

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**THE PERCEPTRON TRAINING PROCESS OPTIMIZATION
FOR RECOGNIZING GRAPHIC OBJECTS IN AN IMAGE**

18-00 – 18-20

Marina V. Yashina

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia;

Moscow Aviation Institute (Research University), Moscow, Russia

Alexandr S. Bugaev

Russian Academy of Sciences, Moscow, Russia;

Moscow Institute of Physics and Technology (National Research University), Moscow, Russia

Ivan A. Kuteynikov, Maxim A. Kuznetsov

Moscow Automobile and Road Construction State Technical University (MADI), Moscow, Russia

**EVALUATION OF RECOVERY ACCURACY OF VEHICLES FLOW
CHARACTERISTICS BY VIDEO SENSOR VIEWS**

March 16, 2022 (Wednesday)

SECTION 6.
Digital signal processing in on-board radio systems

SUB-SECTION 3

CHAIRMEN: **Alexander V. Nazarov**, *Professor of Moscow Aviation Institute
(National Research University), Moscow, Russia*

10-00 – 10-20

Konstantin K. Smirnov, Artyom S. Borovov

Scientific Research Institute of System Analysis, (SRISA RAS), Moscow, Russia

Alexander V. Nazarov, Yuri V. Mokhov

Moscow Aviation Institute (National Research University), Moscow, Russia

**METHODS FOR MEASURING THE ELECTROPHYSICAL PARAMETERS
OF SEMICONDUCTOR WAFERS OF VLSI**

10-20 – 10-40

Evgenii Efimov (*Member, IEEE*)

Moscow Aviation Institute (National Research University), Moscow, Russia

**ON THE EFFECT OF A SIGNAL DELAY ON CROSS-SPECTRAL
CORRELATION FUNCTION**

10-40 – 11-00

Nikolay A. Osavchuk, Vadim V. Golovanov

Moscow Aviation Institute (National Research University), Moscow, Russia

**ESTIMATION OF A RADIATION SOURCE LOCATION BY
DIFFERENCE-ENERGY METHOD**

11-00 – 11-20

**Andrei S. Kuznetsov, Aleksandr V. Starenchenko, Sergey N. Kuznetsov,
Mihail N. Ushkar**

Moscow Aviation Institute (National Research University), Moscow, Russia

**FORMATION AND OPTIMIZATION OF THE CONSTRUCTIVE BASIS
OF AIRBORNE RADARS**

11-20 – 11-40

E. E. Devyatkin, M. V. Ivankovich

FSUE NIIR, Moscow, Russia

A. A. Kuchumov, E. M. Lobov, V. O. Varlamov

Moscow Technical University of Communications and Informatics, Moscow, Russia

FBMC-OQAM HELPING PILOTS APPLICATION FOR SYNCHRONIZATION AND CHANNEL ESTIMATION SEQUENCES

11-40 – 12-00

S. S. Loginov, Yu. R. Butkevich, O. A. Sivintseva

Kazan National Research Technical University named after A.N. Tupolev, Kazan, Russia

LORENTZ SYSTEM BASED PSEUDO-RANDOM SEQUENCES IN PAPR REDUCTION AND INFORMATION SECURITY ENHANCEMENT OF THE OFDM COMMUNICATION

12-00 – 12-20

A. L. Makarevich, S. M. Sokovnich, D. V. Garaga, N. S. Kostyukevich,

S. A. Karapetyan

Pridnestrovian State University of Taras Shevchenko, Tiraspol, Moldova, Pridnestrovye

CIRCUIT DESIGN OF A FREQUENCY SYNTHESIZER DEVICE FOR HIGH-SPEED DATA TRANSMISSION SYSTEMS

12-20 – 12-40

O. N. Minaeva, N. E. Miroshnikova, A. I. Sattarova

Moscow Technical University of Communications and Informatics, Moscow, Russia

RESEARCH OF THE CONVOLUTIONAL AND PRODUCT TURBO CODES CHARACTERISTICS IN CONDITIONS OF UNDERWATER CHANNEL

12-40 – 13-00

I. V. Grubin, I. Y. Lygina

Moscow Aviation Institute (National Research University), Moscow, Russia

APPLICATION OF THE THEORY OF OPTIMAL CONTROL FOR SYNCHRONIZATION OF MULTIPOSITION SYSTEMS

13-00 – 13-20

Ivan A. Chelyadin, Mikhail D. Artemov, Lilia I. Voronova (Member, IEEE)

Moscow Technical University of Communications and Informatics, Moscow, Russia

INTELLIGENT DISABLED PASSENGER SUPPORT SYSTEM

QUESTIONS
13-20 – 13-30

March 16, 2022 (Wednesday)

SECTION 6.

Digital signal processing in on-board radio systems

SUB-SECTION 4

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

15-00 – 15-20

Aleksei M. Potashnikov, Vladimir A. Mazin, Aleksei P. Smirnov, Nikita S. Stepanov
Moscow Technical University of Communications and Informatics, Moscow, Russia
Anastasia I. Mozhaeva (*Member, IEEE*)

The University of Waikato, Hamilton, New Zealand;

Moscow Technical University of Communications and Informatics, Moscow, Russia

ANALYSIS OF MODERN METHODS USED TO ASSESS THE QUALITY OF VIDEO SEQUENCES DURING SIGNAL STREAMING

15-20 – 15-40

Dmitry A. Egorov, Vladimir D. Fedorov, Igor V. Vlasuyk, Aleksei M. Potashnikov
Moscow Technical University of Communications and Informatics, Moscow, Russia
Anastasia I. Mozhaeva (*Member IEEE*)

The University of Waikato, Hamilton, New Zealand;

Moscow Technical University of Communications and Informatics, Moscow, Russia

A NOVEL METHOD FOR ESTIMATING THE SPATIAL FREQUENCY CHARACTERISTICS OF CAMERAS BASED ON GENERATIVE RANDOM SEQUENCES

15-40 – 16-00

Artem M. Drebuszhan, Ksenia I. Nezhivleva, Igor V. Vlasuyk, Aleksei M. Potashnikov

Moscow Technical University of Communications and Informatics, Moscow, Russia

Anastasia I. Mozhaeva (*Member IEEE*)

The University of Waikato, Hamilton, New Zealand;

Moscow Technical University of Communications and Informatics, Moscow, Russia

THE STEGANOGRAPHIC METHOD OF INTRODUCING ADDITIONAL INFORMATION, RESISTANT TO TRANSCODING AND CONVERSION

16-00 – 16-20

Vladislav I. Lipatkin

Moscow Technical University of Communications and Informatics, Moscow, Russia

COMPUTATIONALLY EFFICIENT IMPLEMENTATION OF JOINT DETECTION AND PARAMETERS ESTIMATION OF SIGNALS WITH DISPERSIVE DISTORTIONS ON A GPU

16-20 – 16-40

A. V. Timoshenko (*Member IEEE*)

MIET National Research University of Electronic Technology, Moscow, Russia

Yu. V. Babkin, V. I. Kim

Academician A. L. Mints Radiotechnical Institute, Moscow, Russia

A. B. Silantsev, C. A. G. Fernandu

P.G. Demidov Yaroslavl State University, Yaroslavl, Russia

SUBSTANTIATION OF THE PERIODICITY OF MULTI-SCANNING RADAR MONITORING OF MOVING OBJECTS

16-40 – 17-00

D. S. Chirov (*Member IEEE*), **E. O. Kandaurova**

Moscow Technical University of Communications and Informatics, Moscow, Russia

ADAPTIVE SPECTRUM MONITORING ALGORITHM FOR COGNITIVE RADIO SYSTEMS

17-00 –17-20

Oksana Guschina (*Member IEEE*)

Moscow Aviation Institute (National Research University), Moscow, Russia

CYCLOSTATIONARY ANALYSIS OF ELECTRIC POWER IN A RESONANT CIRCUIT UNDER PERIODIC EXCITATION

17-20 –17-40

O. A. Shorin, V. O. Shorin

Moscow Technical University of Communications and Informatics, Moscow, Russia

G. O. Bokk

OJSC NIRIT-XINWEI Telecom Technology (NXTT), Moscow, Russia

APPLICATION OF LAGRANGE VARIATIONAL PRINCIPLE TO ACCURATE SOLUTION OF STATISTICAL KALMAN FILTRATION PROBLEM IN GENERALIZED CONDITIONS

17-40 – 18-00

Aleksey P. Zhuravlev

Moscow Technical University of Communications and Informatics, Moscow, Russia

MODULATION PARAMETERS ANALYSIS OF MODERN COMMUNICATION SYSTEMS

18-00 – 18-20

Nikolay S. Sidorenko, Vasiliy V. Egorov, Nikolay A. Osavchuk

Moscow Aviation Institute (National Research University), Moscow, Russia

TEST IMPLEMENTATION OF AN SDR-BASED NOISE-IMMUNE DATA TRANSMISSION CHANNEL

QUESTIONS

18-20 – 19-00

March 17, 2021 (Thursday)

SECTION 4

Wire and Optical Communication and Control Systems

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

10-00 – 10-20

A. S. Adzhemov (*Member, IEEE*), **A. Y. Kudryashova**

Moscow Technical University of Communications and Informatics, Moscow, Russia

DEVELOPMENT OF A METHOD FOR RESEARCHING THE OCCURRENCE OF ADDITIONAL DISTORTIONS IN THE PRESENCE OF ERRORS IN THE DIGITAL CHANNEL AND TRANSFORMATION OF DIFFERENT METRIC SPACES

10-20 – 10-40

V. V. Afanasiev, S. S. Loginov

Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Russia

COMPARATIVE EFFICIENCY OF STABILIZING ACTIONS ON THE CONTROLLED LORENTZ SYSTEM

10-40 – 11-00

Sirin R. Galiev, Ayrat Zh. Sakhabutdinov (*Member, IEEE*), **Artur S. Lits, Ekaterina V. Mochalova, Ilshat I. Shaigardanov**

Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Russia

AGING OF FIBER BRAGG GRATINGS TO REDUCE THE DRIFT OF THE SENSOR RESPONSE ON THEIR BASIS AT HIGH TEMPERATURES

11-00 – 11-20

B. G. Ibrahimov (*Member, IEEE*), **M. H. Hasanov** (*Member, IEEE*), **A. D. Tagiyev** (*Member, IEEE*)

Azerbaijan Technical University, Baku, Azerbaijan

RESEARCH OF THE QUALITY OF FUNCTIONING OF FIBER-OPTICAL TRANSMISSION SYSTEMS ON THE BASIS OF MODERN TECHNOLOGIES

11-20 – 11-40

A. A. Ivanov (*Member, IEEE*), **E. P. Denisenko, P. E. Denisenko, A. A. Lustina, V. D. Andreev**

Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Russia

RADIOPHOTONIC AMPLITUDE-PHASE MODULATION SOLUTIONS FOR ANGLE OF ARRIVAL ESTIMATION USING L-SHAPED ANTENNA STRUCTURES

11-40 – 12-00

V. L. Karyakin (*Member, IEEE*), **D. V. Karyakin**

Povolzhsky State University of Telecommunications and Informatic, Samara, Russia

DISTRIBUTED DVB-T2 STANDARD BROADCAST QUALITY MONITORING SYSTEM

12-00 – 12-20

D. S. Kholodny

National Research University Moscow Power Engineering Institute, Moscow, Russia

A. G. Koriakin, D. A. Tarasov, E. B. Vasilyev, I. A. Ovchinnikova

All-Russian Scientific Research and Development Cable Institute, Moscow, Russia

SEISMIC RESISTANCE OF OPTICAL OVERHEAD COMMUNICATION LINES

12-20 – 12-40

Vladimir N. Korshunov

Moscow Technical University of Communications and Informatics, Moscow, Russia

Irina A. Ovchinnikova

RRDI for Cable Industry, Moscow, Russia

Sergey S. Shavrin, Nadezhda A. Shishova

Moscow Technical University of Communications and Informatics, Moscow, Russia

Peter A. Semenov

RRDI for Cable Industry, Moscow, Russia

MULTICHANNEL OPTICAL FIBERS OPTIMIZATION

12-40 – 13-00

Boris Ya. Likhtsinder, Yulia O. Bakai

Povolzhsky State University of Telecommunications and Informatic, Samara, Russia

DEVELOPMENT OF AN INTERVAL METHOD FOR QUEUE ANALYSIS IN QUEUEING SYSTEMS

13-00– 14-00
DINNER

14-00 – 14-20

V. V. Maklachkova, A. V. Shvedov, Sh. Alyev

Moscow Technical University of Communications and Informatics, Moscow, Russia

ANALYSIS OF RESILIENCE INDICATORS IN CORPORATE NETWORKS AND POSSIBLE WAYS TO IMPROVE IT

14-20 – 14-40

O. P. Malkovich, S. E. Grychkin, E. P. Stroganova

Moscow Technical University of Communications and Informatics, Moscow, Russia

INVESTIGATION OF PORTABLE COMMUNICATION DEVICES WITH ELECTROCHEMICAL POWER SOURCES APPLICATION FEATURES

14-40 – 15-00

O. G. Morozov (Member, IEEE), E. P. Denisenko, P. E. Denisenko, A. A. Lustina, V. D. Andreev

Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Russia

RADIOPHOTONIC METHOD FOR ANGLE OF ARRIVAL ESTIMATION OF A REFLECTED RADAR SIGNAL BASED ON TANDEM AMPLITUDE-PHASE MODULATION

15-00 – 15-20

Faurdoir Ndimumahoro, Mikhail S. Stepanov

Moscow Technical University of Communications and Informatics, Moscow, Russia

Artwell R. Muzata

Wits University, Johannesburg, South Africa

Dawood Tammam, Valentin G. Popov

Moscow Technical University of Communications and Informatics, Moscow, Russia

USING THE PRINCIPLES OF MOBILE SYSTEMS MODELING FOR LORAWAN CHARACTERISTICS ESTIMATION

15-20 – 15-40

I. A. Ovchinnikova, D. A. Tarasov

All-Russian Scientific Research and Development Cable Institute, Moscow, Russia

N. A. Shishova, V. A. Ovchinnikov, V. A. Ovchinnikova

Moscow Technical University of Communications and Informatics, Moscow, Russia

STUDY OF OPTICAL FIBRE CABLES LONG-TERM OPERATION AT ELEVATED TEMPERATURES

15-40 – 16-00

Anatoliy V. Ryzhkov, Mikhail L. Schwartz, Vladimir M. Aladin,

Moscow Technical University of Communications and Informatics, Moscow, Russia

REFERENCE NODE FOR FORMING THE TIME SCALE OF A COHERENT PUBLIC COMMUNICATION NETWORK

16-00 – 16-20

A. Zh. Sakhabutdinov (*Member IEEE*), **E. P. Denisenko, P. E. Denisenko, A. A. Lustina, V. D. Andreev**

Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Russia

RADIOPHOTONIC METHOD FOR DOPPLER FREQUENCY SHIFT MEASUREMENT OF A REFLECTED RADAR SIGNAL BASED ON TANDEM AMPLITUDE-PHASE MODULATION

16-20 – 16-40

Dmitry N. Shubin, Andrey A. Kuchumov, Evgenii M. Lobov

Moscow Technical University of Communications and Informatics, Moscow, Russia

Stepan V. Abramov, Oleg I. Klintsov

ORION, Moscow, Russia

INVESTIGATION OF THE POSSIBILITY OF ORGANIZING COMMUNICATION IN THE ULTRAVIOLET WAVELENGTH RANGE

16-40 – 17-00

COFFEE BREAK

17-00 – 17-20

A. V. Shvedov, D. V. Gadasin, E. V. Pak

Moscow Technical University of Communications and Informatics, Moscow, Russia

APPLICATION OF THE BACKMAN MODEL FOR THE DISTRIBUTION OF TRAFFIC FLOWS IN NETWORKS WITH SEGMENT ROUTING

17-20 – 17-40

Mikhail S. Stepanov, Margarita G. Kanishcheva, Elena E. Malikova, Juvent Ndayikunda

Moscow Technical University of Communications and Informatics, Moscow, Russia

Nikolai G. Kaigorodov

Mobile TeleSystems Public Joint Stock Company, Moscow, Russia

THE DEVELOPMENT AND ANALYSIS OF A SERVICE MODEL FOR THE TRAFFIC OF A SURVEILLANCE SYSTEM OPERATOR BY A DEDICATED RESOURCE OF AN LTE CELL

17-40 – 18-00

Alexey N. Terekhov, Alla S. Korchagina

Moscow Technical University of Communications and Informatics, Moscow, Russia

METHOD OF STORING INFORMATION BASED ON UNIT CODING

18-00 – 18-20

Mikhail A. Vaganov, Vasily I. Kazakov, Oleg D. Moskaletz

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

**SPECTRAL PROCESSING AND DETECTION OF OPTICAL SIGNALS
IN SYSTEMS FOR MULTICRITERIA CONTROL OF PHYSICAL
AND PHYSICOCHEMICAL PROCESSES**

18-20 – 18-40

Aleksandr O. Volkov, Sergey N. Stepanov

Moscow Technical University of Communications and Informatics, Moscow, Russia

Anastasiia V. Korobkina

Moscow Institute of Physics and Technology (National Research University), Moscow, Russia

**DEVELOPMENT OF A MODEL AND ALGORITHMS FOR SERVICING
REAL-TIME AND DATA TRAFFIC IN A CLOUD COMPUTING SYSTEM**

18-40 – 19-00

Alexander L. Zubilevich (*Independent Expert*)

Sergey A. Sidnev, Vladimir A. Tsarenko

Moscow Technical University of Communications and Informatics, Moscow, Russia

**SERVICE LEVEL AGREEMENT WITH DIFFERENTIATED RELIABILITY
REQUIREMENTS. EFFICIENCY OF APPLICATION IN COMMUNICATION
NETWORKS AND ON-BOARD SYSTEMS**

March 17, 2022 (Thursday)

**SECTION 7.
Electrical and electronic engineering pedagogy**

SECTION CHAIRMEN: **Sergei L. Yablochnikov**, *Doctor of Pedagogical Sciences, Professor of Moscow Technical University of Communications and Informatics, Moscow, Russia*

10-00 – 10-20

S. I. Dinges, A. V. Pestryakov

Moscow Technical University of Communications and Informatics, Moscow, Russia

A SET OF LABORATORY WORKS ON THE STUDY OF MODULATED SIGNALS OF MODERN TELECOMMUNICATION SYSTEMS

10-20 – 10-40

V. V. Golovanov, N. D. Lyssakov

Moscow Aviation Institute (National Research University), Moscow, Russia

INVESTIGATION OF SOME PSYCHOLOGICAL AND PEDAGOGICAL PHENOMENA RELATED TO DISTANCE EDUCATION IN ENGINEERING UNIVERSITY

10-40 – 11-00

E. D. Grigorieva, V. B. Kreindelin, V. V. Frisk

Moscow Technical University of Communications and Informatics, Moscow, Russia

APPLICATION OF NEW TECHNOLOGIES AND SOFTWARE IN THE DEVELOPMENT OF A NEW LABORATORY STAND FOR STUDYING THE DISCIPLINE OF ELECTRICAL ENGINEERING

11-00 – 11-20

Sergey A. Grushko, Anatoly P. Pshenichnikov, Elena E. Malikova, Andrey Y. Malikov

Moscow Technical University of Communications and Informatics, Moscow, Russia

VIRTUAL ASTERISK IP-PBX OPERATION STUDYING AND EXPLORING AT THE UNIVERSITY

11-20 – 11-40

M. I. Kuptsov

Ryazan State Radio and Technical University, Ryazan, Russia

I. M. Kuptsov

Instamart Technologies LLC, Moscow, Russia

S. L. Yablochnikov, I. O. Yablochnikova

Moscow Technical University of Communications and Informatics, Moscow, Russia

V. B. Dzobelova

*North Ossetian State University named after Kosta Levanovich Khetagurov,
Vladikavkaz, Russia*

**MODELING OF PROCESSES IN THE FIELD OF IT EDUCATION
IMPLEMENTED WITH THE USE OF REMOTE TECHNOLOGIES**

11-40 – 12-00

Ilya M. Lerner (*Member, IEEE*), **Renat F. Zaripov, Rashid R. Fayzullin** (*Member, IEEE*),

Marat M. Fatykhov

Kazan National Research Technical University n.a. A.N. Tupolev, Kazan, Russia

V. I. Il'in

Kazan Federal University, Kazan, Russia

**NEW TEACHING APPROACH ON MATLAB PROGRAMMING
FOR RADIO ENGINEERING STUDENTS**

12-00 – 12-20

N. E. Poborchaya, A. Y. Kudryashova, A. S. Adzhemov (*Member, IEEE*)

Moscow Technical University of Communications and Informatics, Moscow, Russia

**COMMUNICATION THEORY TEACHING METHODS USING MULTIMEDIA
TECHNOLOGIES AND APPLICATION PACKAGES**

12-20 – 12-40

Zhanna A. Vavilova, Egor A. Chirikov, Nikolay V. Tkachenko

Moscow Aviation Institute (National Research University), Moscow, Russia

**DEVELOPMENT OF APPLICATIONS FOR GENERATING AND READING
QR CODES FOR THE MICRO1 MODEL**

12-40 – 13-00

S. L. Yablochnikov, K. F. Shakirov, V. V. Erofeeva

Moscow Technical University of Communications and Informatics, Moscow, Russia

V. B. Dzobelova

North-Ossetian State University, Vladikavkaz, Russia

R. K. Malkarova

Kabardino-Balkarian State University named after Kh.M.Berbekov, Nalchik, Russia

THE USE OF COMPUTER TRAINING SYSTEMS IN DISTANCE LEARNING

13-00 – 13-20

I. O. Yablochnikova, S. L. Yablochnikov

Moscow Technical University of Communications and Informatics, Moscow, Russia

A. V. Olisaeva

North-Ossetian State University named after K.L. Khetagurov, Vladikavkaz, Russia

M. N. Makhaboroda

Academy of Law and Management of the Federal Penitentiary Service of Russia, Ryazan, Russia

M. K. Dadova

Kabardino-Balkarian State University named after Kh.M.Berbekov, Nalchik, Russia

**SOME FEATURES OF THE IMPLEMENTATION OF EDUCATIONAL
PROCESSES IN THE CONTEXT OF THE INDUSTRIAL REVOLUTION 4.0**