

Moscow Technical University of Communications and Informatics (MTUCI)  
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**International Scientific Conference**

**«2019 SYSTEMS OF SIGNALS GENERATING  
AND PROCESSING IN THE FIELD  
OF ON BOARD COMMUNICATIONS»**

**(IEEE Conference # 46544)**

**20-21 March 2019**

**CONFERENCE PROGRAM**

**Moscow  
2019**

## **ОРГАНИЗАТОРЫ КОНФЕРЕНЦИИ**

МОСКОВСКИЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ СВЯЗИ И ИНФОРМАТИКИ (МТУСИ)  
ИНСТИТУТ ИНЖЕНЕРОВ ПО ЭЛЕКТРОТЕХНИКЕ И ЭЛЕКТРОНИКЕ (ИЕЕЕ)  
ИЗДАТЕЛЬСКИЙ ДОМ «МЕДИА ПАБЛИШЕР»

## **СЕКЦИИ КОНФЕРЕНЦИИ\***

**СЕКЦИЯ 1.** Antennas and Radio Waves Propagation.

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

**СЕКЦИЯ 3.** Radiofrequency Applications.

**СЕКЦИЯ 4.** Wire and Optical Communication and Control Systems.

**СЕКЦИЯ 5.** Intelligent Transport Systems

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

## **РАСПИСАНИЕ РАБОТЫ КОНФЕРЕНЦИИ**

### **20 марта 2019 г. Конгресс-центр МТУСИ**

<b>9-00 — 10-00</b>	<b>Регистрация участников</b>
<b>10-00 — 12-15</b>	<b>Пленарное заседание</b>
<b>12.30 — 13.30</b>	<b>Обед</b>
<b>13.30 — 18.30</b>	<b>Работа секций конференции</b>

### **21 марта 2019 г. Конгресс-центр МТУСИ**

<b>10-00 — 14-00</b>	<b>Продолжение работы секций конференции</b>
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## **ПОВЕСТКА ДНЯ ПЛЕНАРНОГО ЗАСЕДАНИЯ**

**20 марта 2019 г. Конгресс-центр МТУСИ**

**10-00 – 10-05**

**Приветственное слово представителя руководства Россвязи  
(по согласованию)**

**10-05 – 10-10**

**Вступительное слово  
Ректор МТУСИ  
ЕРОХИН Сергей Дмитриевич**

**10-10– 10-15**

**Приветственное слово  
IEEE Region 8, Chair of AP/LEOS Moscow Chapter,  
Vice-chair of MTT/ED/AES Moscow Chapter  
КАЛОШИН Вадим Анатольевич**

**10-15 – 10-35**

**Доклад «Спутниковая связь – мифы и реалии»  
АЛЁШИН Виктор Сергеевич, к.т.н., ведущий научный сотрудник, МТУСИ**

**10-35 – 10-55**

**Доклад «Интервальный метод анализа трафика  
мультисервисных сетей доступа»  
ЛИХТЦИНДЕР Борис Яковлевич, д.т.н., профессор, ПГУТИ, г. Самара**

**10-55 – 11-15**

**Доклад «Развитие структур систем интернета вещей»  
САКСОНОВ Евгений Александрович, д.т.н., профессор, МТУСИ**

**11-15 – 11-35**

**Доклад «Риски безопасности критических информационных инфраструктур»  
ПЕТУХОВ Андрей Николаевич, к.т.н., начальник отдела, МТУСИ**

**11-35 – 11-55**

**Доклад «Эффективность использования электронных материалов  
и пособий при преподавании технических дисциплин»  
КУДРЯШОВА Анастасия Юрьевна, аспирант, МТУСИ**

**11-55 – 12-15**

**Доклад «Экспозиция действующих исторических образцов электросвязи  
как способ профориентации»  
ИВАНЮШКИН Роман Юрьевич, к.т.н., доцент, МТУСИ**

**SECTION 2. (20 March)**  
**Navigation and Mathematical Algorithms  
of an Object Space Orientation**

**SECTION CHAIRMEN: Artem S. Adzhemov,**

*(Member, IEEE), Doctor of Sciences (Engineering), professor,  
Moscow Technical University of Communications and Informatics*

**Roman Yu. Ivanyushkin,**

*PhD, Associate Professor of Moscow Technical University of  
Communications and Informatics. Branch Director of the IEEE  
Worldwide Limited in the Russian Federation.  
Scientific Secretary of Russian (Moscow) IEEE Circuits and  
Systems (CAS04) Chapter*

**1. Adzhemov A.S. (Member, IEEE), Adzhemov S.A**

*Moscow Technical University of Communications and Informatics, Moscow, Russia;  
System integrator NVision (MTS), Moscow, Russia*

**ON SOME FEATURES OF BINARY CODE COMBINATIONS**

**2. Balashkov M.V., Bogachev V.M.**

*National Research University «Moscow Power Engineering Institute», Moscow, Russia*

**MATRIX BEAM METHOD AND SOME ITS APPLICATIONS IN RADIO  
ELECTRONICS**

**3. Basyrov A.G., Legkov K.E.**

*Military Space academy, St. Petersburg, Russia*

**METHOD OF A HEURISISTIC-COMBINED SOLUTION OF LABOR-  
CONDUCTIVE TASKS IN PARALLEL COMPUTATIONAL SYSTEMS  
OF REAL TIME**

**4. Belov A.N., Zarubin A.A., Savelieva A.A., Tarlykov A.V.**

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

**THE USE OF SYNTHETIC DATA FOR TRAINING THE NEURAL  
NETWORK TO CLASSIFY THE AIRCRAFTS**

**5. Belov N.V., Airapetov D.P., Buyanov B.Y., Verba V.A.**

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

**SLAM IMPLEMENTATION FOR MOBILE ROBOTS USING PHYSICAL  
SENSORS**

**6. Bogachev V.M.**

*National Research University «Moscow Power Engineering Institute», Moscow, Russia*

**STABILITY CRITERION OF COMPLEX POLYNOMIALS IN MARKOV'S  
PARAMETERS AND ITS' APPLICATION AT SELECTIVE SYSTEM'S DESIGN  
BY THE D-FRAGMENTATION METHODS**

**7. Burenin A.N., Levko I.V., Legkov K.E., Orkin V.V.**

*JSC «Research Institute «Rubin», Saint-Petersburg, Russia;*

*Military Space academy, St. Petersburg, Russia*

**METHOD OF ADAPTIVE INFORMATION RESOURCES CONTROL  
IN THE AUTOMATED CONTROL SYSTEM IN CONDITIONS  
OF PERFORMANCE LOSS**

**8. Erokhin A.G., Vanina M.F., Frolova E.A.**

*Moscow Technical University of Communications and Informatics,*

*Moscow, Russia*

**APPLICATION OF MATHEMATICAL SIMULATION METHODS  
FOR EVALUATING THE WEBSITES EFFECTIVENESS**

**9. Goldstein A.B., Sokolov N.A., Elagin V.S., Onufrienko A.V., Belozertsev I.A.**

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

*Saint-Petersburg, Russia*

**NETWORK CHARACTERISTICS OF BLOCKCHAIN TECHNOLOGY  
OF ON BOARD COMMUNICATION**

**10. Golikova E.A., Malygin I.V.**

*Ural Federal University, Yekaterinburg, Russia*

**ASSESSMENT OF THE LOCATION DETERMINING ACCURACY OF  
THE DRONE IN DIFFICULT CONDITIONS OF RADIO VISIBILITY**

**11. Mikhalevich I.F.**

*V. A. Trapeznikov Institute of Control Sciences of RAS*

**CRITICAL INFRASTRUCTURE SECURITY: ALIGNMENT OF VIEWS**

**12. Mikhaylov V.Y., Mazepa R.B.**

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

**A NOISE IMMUNITY ESTIMATION OF THE GOLD SEQUENCE ENSEMBLES  
FAST DELAY ACQUISITION DEVICES**

**13. Nazarov A.N., Alireza Nik Aein Koupaei**

*Moscow Institute of Physics and Technology State University, Moscow, Russia*

**MODELS OF RISK OF ATTACK OF UNIVERSITY  
INFOCOMMUNICATION SYSTEM**

14. **Osin A.V., Sheluhin O.I.**

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

**NETWORK QUALITY OPERATION PREDICTION BASED  
ON MACHINE LEARNING ALGORITHMS**

15. **Sichkar D.P., Bezumnov D.N., Voronov V.I., Voronova L.I. (Member IEEE),  
Dankovtsev V.I.**

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

**MOVING ELEMENTS OF MOBILE ROBOTS STABILIZATION MODELLING**

16. **Smirnov N.I., Melnik S.V., Antonnikov D.O.**

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

*Head of the Department Federal State Unitary Enterprise "Central Research Institute  
Communications" Moscow, Russia*

**MODELING FOR ENVIRONMENTAL POLLUTION PARAMETERS  
MONITORING SYSTEM**

17. **Stroganova E.P., Grychkin S.E.**

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

**BREAKDOWN EFFECT AND IT'S PREVENTION IN ON-BOARD  
EQUIPMENT OF SATELLITE COMMUNICATION SYSTEMS**

18. **Taktakishvili V.G., Popov O.B., Abramov V.A., Ovchinnikov A.A.**

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

**REVERSIBLE NON-DISTORTING COMPRESSION OF THE DYNAMIC  
RANGE OF THE AUDIO SIGNAL**

19. **Vishnevskiy V.M., Shirvanyan A.M., Tumchenok D.A.**

*V. A. Trapeznikov Institute of Control Sciences of Russian Academy of Sciences,  
Moscow, Russia*

**MATHEMATICAL MODEL OF THE DYNAMICS OF OPERATION OF THE  
TETHERED HIGH-ALTITUDE TELECOMMUNICATION PLATFORM IN THE  
TURBULENT ATMOSPHERE**

20. **Vlasuyk I.V., Potashnikov A.M., Romanov S.G., Balobanov A.A.**

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

**SYNTHESIS OF THE PERCEPTIONALLY LINEAR COLOR SPACE  
USING MACHINE LEARNING METHODS**

21. **Voronin E.A., Kozlov S.V., Kubankov Yu.A.**

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

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

**ECONOMIC SECURITY ASSESSMENT OF ONBOARD EQUIPMENT  
PRODUCTION WITH POSSIBLE REALIZATION IN STANDARD  
MACHINE LEARNING TECHNOLOGIES**

**SECTION 1&3. (20 March)**  
**Radiofrequency Applications &  
Antennas and Radio Waves Propagation**

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

**Alexander V. Pestryakov**, *Doctor of Sciences (Engineering),  
Dean of Radio and Broadcasting Faculty, Professor of Moscow  
Technical University of Communications and Informatics*

**1. Arinin O.V., Aristarkhov G.M., Ivichev M.P.**

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

**STRIPLINE MICROWAVE FILTERS WITH INCREASED FREQUENCY  
SELECTIVITY BASED ON COUNTER-COMB STRUCTURES**

**2. Aristarkhov G.M. Kirillov I.N.**

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

**MICROWAVE DIPLEXERS BASED ON TWO- AND THREE-RESONATORS  
MICROSTRIP STRUCTURES**

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

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

**SYNTHESIS OF INFORMATIVE FEATURES FOR RECOGNITION  
OF THE TYPE OF PULSE REPETITION INTERVAL MODULATION  
OF SIGNALS FROM RADARS**

**4. Dolin G.A.**

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

**CIRCUIT ANALYSIS, SYNTHESIS AND SIMULATION OF RADIO  
DEVICES IN ELECTRA CAD**

**5. Elizarov A.A., Bashkevich S.V., Lavrukhin I.R., Larionov A.A., Karavashkina V.N.**

*National Research University "Higher School of Economics", Moscow, Russia;*

*Institute of Control Sciences. V.A.Trapeznikov RAS, Moscow, Russia*

**DEVELOPMENT OF INTELLIGENT RFID-SYSTEM FOR  
LOGISTICS PROCESSES**

**6. Faizullin R.R., Yaushev S.T., Insarov A.Y.**

*Institute of Radioelectronics and Telecommunications Kazan National Research*

*Technical University n.a. A.N.Tupolev – KAI, Kazan, Russia*

**MODELING AND SELF-SIMILARITY ANALYSIS OF NON-POISSONIAN  
TRAFFIC REPRESENTED BY MULTIMODAL NON-TYPICAL PASCAL  
AND RICE DISTRIBUTIONS**

**7. Fayzullin R.R., Lerner I.M.**

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

*Kazan Federal University, Kazan, Russia*

**ABOUT CYCLE STATIONARY OF APSK-N-SIGNALS OBSERVED  
ON THE OUTPUT OF COMMUNICATION CHANNEL WITH INTERSYMBOL  
INTERFERENCE**

**8. Gorgadze S.F.**

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

**THE PHYSICAL CHANNELS ALTERNATIVE CONSTRUCTIONS  
FOR WIRELESS SYSTEMS AND NETWORK**

**9. Gromorushkin V.N., Varlamov O.V., Dolgopyatova A.V., Voronkov A.A.**

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

**OPERATION PROBLEMS OF THE EER TRANSMITTER WITH  
NARROWBAND ANTENNA**

**10. Khasianova E.R., Pestryakov A.V.**

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

**INVESTIGATION OF HARDWARE IMPAIRMENTS DEGREE INFLUENCE  
ON THE RECEPTION QUALITY IN RESPECT OF THE ZERO-IF RECEIVERS**

**11. Konstantinov A.S., Pestryakov A.V.**

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

**ANALYSIS OF THE TRANSMISSION MODES AND DOWNLINK  
CONTROL INFORMATION IN THE LTE-ADVANCED / 5G NETWORK**

**12. Kravchenko N.P. (Member IEEE), Borisov N.I., Kasatkin A.D., Presnyakov S.A.,  
Mukhin S.V.**

*MIEM HSE, Moscow, Russia;*

*MFUA, Moscow, Russia*

**SIMULATION OF RESONATOR SLOW-WAVE STRUCTURES AND  
TERMINAL DEVICES OF TWT SECTIONS IN SHF AND UHF RANGES**

**13. Kreyndelin V.B., Taoufik Ben Rejeb, Bakulin M.G.**

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

**NOVEL EFFICIENT PRECODING TECHNIQUE WITH REDUCED FEEDBACK  
FOR MULTIUSER MIMO SYSTEMS WITH MULTIPLE ANTENNA USER  
EQUIPMENT**

14. **Kryukovsky A.S., Bova Yu.Ig.**

*Russian New University, Moscow, Russia*

**INVESTIGATION OF CATASTROPHE PARAMETERS, DESCRIBING STRUCTURALLY-STABLE FOCUSINGS OF PRIMARY AND SECONDARY EDGE WAVES BY LOCAL ASYMPTOTIC METHOD**

15. **Kuchumov A.A., Liberovskiy N.Y., Priputin V.S.**

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

**BLIND TWO REAL SIGNALS SEPARATION METHOD BASED ON THIRD ORDER CUMULANTS**

16. **Kuznetsov D.I., Fayzullin R.R., Odintsov V.L., Il'in V.I**

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

*Kazan Federal University, Kazan, Russia*

**APPROACH OF NANOELEMENT IMPEDANCE MATCHING AND ITS APPLICATION**

17. **Lerner I.M., Odintsov V.L., Il'in V.I.**

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

*Kazan Federal University, Kazan, Russia*

**A NUMERICAL METHOD FOR POTENTIAL CAPACITY ESTIMATING OF COMMUNICATION CHANNEL WITH MEMORY AND CYCLOSTATIONARY PSK-N-SIGNALS**

18. **Lipatkin V.I., Priputin V.S., Lobova E.O.**

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

**APPLICATION OF DIGITAL FILTER BANK FOR RADIO MONITORING**

19. **Lobov E.M., Shubin D.N.**

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

**A NARROW-BAND INTERFERENCE COMPENSATION DEVICE BASED ON A DIGITAL FILTER BANK FOR BROADBAND LOW-ENERGY HF RADIO LINES**

20. **Sattarova A.I., Varlamov V.O., Lobov E.M.**

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

**DESIGN AND SIMULATION OF A HYBRID FILTER BANK FOR PROCESSING WIDEBAND SIGNALS WITH LOW-SPEED ADCS**

21. **Lobova E.O., Kandaurov N.A.**

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

**EXPERIMENTAL RESULTS OF DISPERSION DISTORTION  
COMPENSATION OF WIDEBAND SIGNALS WITH A DEVICE  
BASED ON A DIGITAL FILTER BANK**

22. **Lokhvitskiy M.S., Shorin O.A., Shorin A.O.**

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

*NIRIT, Moscow, Russia*

**IMPLEMENTATION OF THE INVENTION "METHOD OF CELLULAR  
SYSTEMS". TIME ADVANCE CALCULATION**

23. **Malygin I.V., Krasnyanskiy A.S., Panchenko S.A.**

*Ural Federal University, Yekaterinburg, Russia*

**TUNABLE MICROWAVE FILTER AS PART OF THE SDR SYSTEM**

24. **Nechaev Yu.B., Peshkov I.V., Fortunova N.A.**

*Voronezh State University, Voronezh, Russia;*

*Bunin Yelets State University, Yelets, Russia*

**ESTIMATION OF THE CRAMER-RAO BOUND FOR RADIO  
DIRECTION-FINDING ON THE AZIMUTH OF PLANAR ANTENNA  
ARRAYS OF THE NON-SYMMETRIC FORM**

25. **Nemykin A.A.**

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

**COMPARATIVE ANALYSIS OF THE ACCURACY AND DYNAMIC  
CHARACTERISTICS OF NAVIGATE RADIO ELECTRONIC EQUIPMENT  
WITH PHASE AND FREQUENCY AUTO SURVEYING IN INTENSIVE  
INFERENCES**

26. **Odintsov V.L., Lerner I.M., Fayzullin R.R., Il'in V.I.**

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

*Kazan Federal University, Kazan, Russia*

**THE STUDY OF PROBABILISTIC CHARACTERISTICS OF CYCLO-  
STATIONARY APSK-N-SIGNALS CAUSED BY COMMUNICATION  
CHANNEL WITH MEMORY**

27. **Priputin V. S., Magsumov V.R., Lobova E.O.**

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

**ANALYSIS OF DIGITAL FILTER PROTOTYPE DESIGN METHODS  
FOR HIGH-SPEED SIGNAL PROCESSING BASED ON POLYPHASER  
FILTER BANK**

28. **Ryabov I.V., Strelnikov I.V. Tolmachev S.V., Kljuzhev E.S.**

*Volga State University of Technology, Yoshkar-Ola, Russia*

**DIRECT DIGITAL SYNTHESIZERS OF COMPLEX BROADBAND SIGNALS**

29. **Samoylov A.G., Samoylov S.A.**

*Vladimir State University named after Alexander and Nikolay Stoletovs, Vladimir, Russia*

**MATHEMATICAL MODEL OF THE RADIO CHANNEL ALTIMETER**

**FOR UNMANNED AERIAL VEHICLES**

30. **Sheluhin O.I., Erokhin S.D., Osin A.V., Barkov V.V.**

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

**EXPERIMENTAL STUDIES OF NETWORK TRAFFIC OF MOBILE DEVICES**

**WITH ANDROID OS**

31. **Zhuravlev A.P.**

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

**SYNCHRONIZATION ALGORITHM FOR A SATELLITE COMMUNICATION**

**SIGNALS DEMODULATOR IN HIGH CARRIER SHIFT CONDITIONS**

**SECTION 4. (20 March)**  
**Wire and Optical Communication and Control Systems**

**SECTION CHAIRMEN: Boris J. Likhtsinder**, *Doctor of Sciences (Engineering), professor, Povolzhskiy State University of Telecommunications and Informatics*

**Bayram G. Ibrahimov**, *(Member IEEE), Doctor of Sciences (Engineering), professor, Azerbaijan Technical University, Baku, Azerbaijan*

**1. Agliullin T.A., Gubaidullin R.R., Morozov O.G. (Member IEEE), Sahabutdinov A.Zh., Ivanov V.**  
*Kazan National Research Technical University named after A.N. Tupolev-KAI, Kazan, Russia;*

*Technische Universität Ilmenau, Ilmenau, Germany*

**TIRE STRAIN MEASUREMENT SYSTEM BASED ON ADDRESSED FBG-STRUCTURES**

**2. Antonov A.E., Gadasin D.V., Volodin V.E.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia*

**AGGREGATION OF SHORT MESSAGE TRAFFIC IN INFOCOMMUNICATION SYSTEMS**

**3. Babkin V.A., Stroganova E.P.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia*

**INTEGRAL QUALITY CONTROL OF SERVICE PROFILE OF TRAFFIC**

**4. Bogachkov I.V. (Senior Member, IEEE), Trukhina A.I., Gorlov N.I.**  
*Omsk State Technical University, Omsk, Russia;*

*Siberian State University of Telecommunications and Computer Science, Novosibirsk, Russia*

**THE STUDY OF THE MANDELSTAM – BRILLOUIN SCATTERING IN ERBIUM OPTICAL FIBERS**

**5. Bourdine A.V., Burdin V.A. (Member IEEE), Vijay Janyani, Ghanshyam Singh, Zhukov A.E.**

*Povolzhskiy State University of Telecommunications and Informatics (PSUTI), Samara, Russia;*

*Malaviya National Institute of Technology Jaipur, Jaipur, India*

**SIMULATION-BASED PREDICTION OF 100- $\mu$ M-CORE MULTIMODE OPTICAL FIBER BANDWIDTH FOR 10GBASE-LX SYSTEMS**

**6. Buzhin I.G., Mironov Yu.B.**

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

**EVALUATION OF TELECOMMUNICATIONS EQUIPMENT DELAYS  
IN SOFTWARE-DEFINED NETWORKS**

**7. Bykov A.D., Voronov V.I., Voronova L.I. (Member IEEE)**

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

**MACHINE LEARNING METHODS APPLYING FOR HYDRAULIC SYSTEM  
STATES CLASSIFICATION**

**8. Dokuchaev V.A., Gorban E.V., Maklachkova V.V.**

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

**THE SYSTEM OF INDICATORS FOR RISK ASSESSMENT IN HIGH-LOADED  
INFOCOMMUNICATION SYSTEMS**

**9. Elagin V.S., Belozertsev I.A., Goldshtein B.S., Onufrienko A.V.,**

**Vladyko A.G. (Member IEEE)**

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

**MODELS OF QOE ENSURING FOR OTT SERVICES**

**10. Eremchuk E.Y., Bourdine A.V., Burdin V.A. (Member IEEE)**

*Povolzhsky State University of Telecommunications and Informatics, Samara, Russia*

**SIMULATION OF A DISPERSION MANAGED  
TWO-MODE FIBER-OPTIC LINK**

**11. Gadasin D.V., Shvedov A.V., Litvin Ya.S.**

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

**PARADIGM OF INHERITANCE IN LARGE-SCALE SYSTEMS**

**12. Gecha E.Y., Larin U.T., Meshchanov G.I., Ovchinnikova I.A., Koriakin A.G.**

*JSC «VNIKP», Moscow, Russia*

**ANALYSIS OF OPTICAL CABLES OPERABILITY IN A GIVEN  
TEMPERATURE RANGE**

**13. Goncharov V.V., Goncharov A.V., Matyunina D.D., Shishova N.A.**

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

**THE RATIONAL CHECKS AMOUNT SELECTION FOR THE INFORMATION  
MANAGEMENT SYSTEMS TROUBLESHOOTING**

14. **Gubaidullin R.R., Agliullin T.A., Morozov O.G. (Member IEEE), Sahabutdinov A.Zh., Ivanov V.**

*Kazan National Research Technical University named after A.N. Tupolev-KAI, Kazan, Russia;*

*Technische Universität Ilmenau, Ilmenau, Germany*

**MICROWAVE-PHOTONIC SENSORY TIRE CONTROL SYSTEM  
BASED ON FBG**

15. **Ibrahimov B.G. (Member IEEE), Hasanov M. H. (Member, IEEE), Humbatov S.H.**

*Azerbaijan Technical University, Baku, Azerbaijan;*

*Police Academy of Internal Affairs of the Republic of Azerbaijan, Baku, Azerbaijan*

**STUDY AND ANALYSIS OF NONLINEAR EFFECTS IN OPTICAL SYSTEMS  
USING SPECTRAL TECHNOLOGIES**

16. **Ignatikov I.S., Ovchinnikova I.A., Peshkov I.B., Gecha E.Y., Gordienko V.N.**

*JSC VNIKP, Moscow, Russia*

**ABOUT RADIATION RESISTANCE OF OPTICAL CABLES AND FIBERS**

17. **Ivanov S.I., Portnov E.L., Kolesnikov V.A., Semenov A.B.**

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

*Moscow State University of Civil Engineering (MGSU) National Research University, Moscow, Russia*

**IMPACT ON WINDOW EFFICIENCY OPTICAL FIBER LENGTH CHANGES  
IN THE DISPERSION UNDER THE ACTION OF NEGATIVE INFLUENCES**

18. **Korshunov V.N., Ovchinnikova I.A., Shavrin S.S., Shishova N.A., Tsym A.Y.**

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

*FSUI "ZNIIS", Moscow, Russia*

**SPECTRAL EFFICIENCY OF FIBER – OPTIC SYSTEMS MODIFYING  
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19. **Kudryashova A.Y., Adzhemov A.S. (Member IEEE), Vlasuyk I.V.**

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

**APPLICATION OF WEBER-FECHNER LAW IN IMAGE TRANSMISSION  
IN THE FIELD OF ONBOARD COMMUNICATIONS**

20. **Likhttsinder B.J.**

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

**INTERVAL METHOD OF TRAFFIC ANALYSIS IN MULTISERVICE  
ACCESS NETWORKS**

21. **Lipatnikov K.A., Sahabutdinov A.Zh., Nureev I.I., Kuznetsov A.A., Fashutdinov L.M.**  
*Kazan National Research Technical University named after A.N. Tupolev-KAI, Kazan, Russia*  
**FIBER-OPTIC VIBRATION SENSOR «VIB-A»**
22. **Melnik S.V., Smirnov N.I.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia;*  
*Central Science Research Telecommunication Institute (CSRTI), Moscow, Russia*  
**VOICE AUTHENTICATION SYSTEM FOR CLOUD NETWORK**
23. **Morozov O.G. (Member IEEE), Nureev I.I., Sakhabutdinov A.Zh., Misbakhov R.Sh., Papazyan S.**  
*Kazan National Research Technical University named after A.N. Tupolev-KAI, Kazan, Russia;*  
*Kazan State Power Engineering University, Kazan, Russia*  
**OPTICAL VECTOR ANALYZER BASED ON DOUBLE-SIDE MODULATION WITH A SUPPRESSED CARRIER AND PHASE-SHIFT FBG**
24. **Petrova E.N., Melnik S.V., Smirnov N.I.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia;*  
*Central Science Research Telecommunication Institute (CSRTI), Moscow, Russia;*  
*International Telecommunication Academy,*  
**5G DISTRIBUTED TIMING TOPOLOGY MODELING**
25. **Portnov E.L., Semenov A.B.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia;*  
*Moscow State University of Civil Engineering (MGSU) National Research University, Moscow, Russia*  
**FEATURES OF BUS CONNECTION SCHEME OF MEDIUM SPEED IP-DEVICES WITH POE-OPTION**
26. **Rysin Yu.S., Terekhov A.N., Yablochnikov S.L., Ievlev O.P., Dzobelova V.B.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia;*  
*North-Ossetian State University, Vladikavkaz, Russia*  
**ON THE ISSUE OF SPEAKER'S IDENTIFICATION IN COMMUNICATION NETWORKS AND TERMINAL EQUIPMENT OF ONBOARD SYSTEM**
27. **Sokolov S.A., Zubilevich A.L., Morozov B.N.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia*  
**COMMUNICATION DISTURBANCES IN MOVING OBJECTS**

28. **Tarasov D.A., Ovchinnikova I.A., Meschanov G.I., Gordienko V.N., Tsym A.Y.**  
*JSC VNIKIP, Moscow, Russia;*  
*FSUE ZNIIS, Moscow, Russia*  
**EFFECT OF DEVIATION FROM STANDARD TEST PROCEDURE  
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29. **Trukhin S.M., Petrova E.N.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia;*  
*Central Science Research Telecommunication Institute (CSRTI), Moscow, Russia;*  
*International Telecommunication Academy,*  
**MODELING FOR DWDM SYSTEM PARAMETERS MONITORING**

30. **Trukhina A.I., Bogachkov I.V. (Senior Member, IEEE), Gorlov N.I.**  
*Omsk State Technical University, Omsk, Russia;*  
*Siberian State University of Telecommunications and Computer Science,*  
*Novosibirsk, Russia*  
**RESEARCHES THE INFLUENCE OF BENDS IN OPTICAL FIBERS  
OF VARIOUS KINDS ON THE BRILLOUIN TRACES**

31. **Vyukusenge A.**  
*Moscow Technical University of Communications and Informatics, Bujumbura, Burundi*  
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## **SECTION 5. (20 March)**

### **Intelligent Transport Systems**

**SECTION CHAIRMEN:** *Marina V. Yashina, Doctor of Sciences (Physical and mathematical),  
Moscow automobile and road construction state technical University  
(Member IEEE)*

**1. Biryukova O.V., Koretskaya I.V.**

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

**USING AN ULTRASONIC SENSOR TO MONITOR POSITION,  
TRANSFER CONTROL COMMANDS AND WORK INFORMATION**

**2. Boychenko K.V., Boychenko I.V.**

*University of Queensland, Brisbane, Australia;*

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

**INTERACTIVE BUILT SPACE AS THE NEW MEANS  
OF TELECOMMUNICATIONS**

**3. Bruevich N.A., Ivashkin Yu.A., Nikitina M.A.**

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

*V.M. Gorbatov Federal Research Center for Food Systems of Russian Academy of Sciences,  
Moscow, Russia*

**MOBILE APPLICATION FOR ANALYSIS AND CORRECTION  
OF INDIVIDUAL FOOD RATION**

**4. Chantieva M.E., Dzhabrailov Kh.A., Iluhin A.V., Gematudinov R.A.**

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

**SOFTWARE OPTIMIZATION METHODS FOR COMPOSITE MATERIALS**

**5. Chesnokov A.S., Gorodnichev M. G., Gavrish K.A., Zhidkova M.A.**

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

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

**INTELLIGENT VEHICLE CONDITION MONITORING SYSTEM**

**6. Erokhin S.D.**

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

**A REVIEW OF SCIENTIFIC RESEARCH ON ARTIFICIAL INTELLIGENCE**

**7. Erokhina O.V., Osinina D.D., Brega A.V.**

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

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

**EXPANSION OF RADICAL POLITICAL IDEAS IN DIGITAL SOCIETY**

**8. Gorodnichev M.G., Polyantseva K.A., Yashina M.V. (Member IEEE)**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia;*  
*Moscow automobile and road construction state technical University, Moscow, Russia*  
**INFORMATIONAL ASPECTS OF AUTOMATED MONITORING  
OF DANGEROUS DRIVING**

**9. Gostev I.M.**  
*Buisness Informatic School of “Higher School of Economics” National Research  
University, (HSE NRU), Moscow, Russia;*  
*A.A. Kharkevich Institute for Information Transmission Problems, Russian Academy  
of Sciences (IITP), Moscow, Russia*  
**ON METHODS OF GRAPHIC OBJECT RECOGNITION BASED  
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**10. Ilyichenkova Z.V., Ivanova S.M., Volkov A.I., Ermakova A.YU**  
*MIREA – Russian Technological University, Moscow, Russia*  
*Moscow Technical University of Communications and Informatics,  
Moscow, Russia*  
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**11. Kapterev A.I., Romashkova O.N.**  
*Information Sciences Institute, Moscow State Linguistic University, Moscow, Russia*  
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**12. Kukharenko E.G., Korkunov I.A., Gorodnichev M.G., Salutina T.U.**  
*Moscow Technical University of Communications and Informatics, Moscow, Russia*  
**ON THE INTRODUCTION OF DIGITAL ECONOMICS  
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**13. Marsov V.I., Gematudinov R.A., Seleznev V.S., Dzhabrailov K.A.**  
*Moscow Automobile and Road Construction State Technical University (MADI),  
Moscow, Russia*  
**DEPENDENCE OF THE EFFICIENCY OF THE DISTRIBUTION  
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**14. Molzahn S.-E., Rehborn H., Koller M., Kerner B.S., Klenov S.L.**  
*Daimler AG HPC: X901, 71063, Sindelfingen, Germany;*  
*University of Duisburg-Essen, Duisburg, Germany;*  
*Moscow Institute of Physics and Technology, Moscow, Russia*  
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15. **Pavlicheva E.N., Romashkova O.N.**

*Information Sciences Institute, Moscow State Linguistic University, Moscow, Russia*

**MODEL OF FUNCTIONING OF INFORMATION SYSTEM FOR INSTITUTE OF DISTANCE EDUCATION OF SPECIALISTS OF ONBOARD COMMUNICATIONS**

16. **Platonov S.A., Platonov A.V., Postnikov M.E., Khadonova S.V., Dymkova S.S.**

*ST Technology LLC;*

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

**USING GLOBAL NAVIGATION SATELLITE SYSTEMS TO SOLVE COMPLEX APPLICATION PROBLEMS**

17. **Pospelov P.I., Belova M.A., Kostsov A.V., Tatashev A.G.,**

**Yashina M.V. (Member IEEE)**

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

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

**TECHNIQUE OF TRAFFIC FLOW EVOLUTION LOCALIZATION FOR CALIBRATION OF DETERMINISTIC-STOCHASTIC SEGREGATION MODEL**

18. **Shatrov M.G., Golubkov L.N., Dunin A.Y., Dushkin P.V.**

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

**PRESSURE OSCILLATIONS AS A FACTOR AFFECTING THE MANAGEMENT OF THE FUEL INJECTION PROCESS IN THE COMBUSTION CHAMBER OF A DIESEL ENGINE**

19. **Sinyavski V.V., Shatrov M.G., Dunin A.Y., Shishlov I.G., Vakulenko A.V.**

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

**RESULTS OF SIMULATION AND EXPERIMENTAL RESEARCH OF AUTOMOBILE GAS DIESEL ENGINE**

20. **Skakodub A.A., Varlamova O.V.**

*Department of Pediatric Dentistry and Orthodontics FSAEI of HE I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University), Moscow, Russia*

**AN INTERDISCIPLINARY APPROACH TO RECORDING THE STATE OF REDUNDANCY OF THE SOURCE IN DENTISTRY FOR RHEUMATOID DISEASES**

21. **Solntsev A.A., Feofanov S.A., Guliy V.V.**

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

**THE RESEARCH OF THE OPERATION OF THE LITHIUM-IRON-  
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22. **Usachev V.A., Voronova L.I. (Member IEEE), Voronov V.I.,  
Zharov I.A., Strelnikov V.G.**

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

**NEURAL NETWORK USING TO ANALYZE THE RESULTS  
OF ENVIRONMENTAL MONITORING OF WATER**

23. **Yakimov M.R.**

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

**DETERMINATION OF THE OPTIMAL NUMBER OF PARKING  
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24. **Yakubovich A.N., Yakubovich I.A., Trofimenko Yu.V., Shashina E.V.**

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

**INTELLIGENT MANAGEMENT SYSTEM OF THE AUTOMOBILE ROAD'S  
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25. **Yashina M.V. (Member IEEE), Dotkulova A.S., Susoev N.P., Fomina M.Ju.**

*Moscow automobile and road construction state technical University, Moscow, Russia;  
Moscow Technical University of Communications and Informatics, Moscow, Russia*

**INFOCOMMUNICATION MEASUREMENTS FOR MODEL VALIDATION  
OF THE FOLLOW-THE-LEADER MODEL**