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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> |
|----------------------|----------------------------------------------|

## **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 Communication 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 Communication 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., Dankovtsev V.I.**

*Moscow Technical University of Communication 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 Communication 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 Communication 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 Communication 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 Communication 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 Communication 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 Communication 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. Efimushkin V.A., Rykova T.V.**

*FSUE ZNIIS, Moscow, Russia;*

*Fraunhofer-Institut für Nachrichtentechnik, Heinrich-Hertz-Institut, HHI, Berlin, Germany*

**CONCEPT AND MODELS OF IOT AS A SERVICE**

**6. 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**



**7. 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**

**8. 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**

**9. Gorgadze S.F.**

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

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

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

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

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

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

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

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

**12. Kravchenko N.P., 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 Communication 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 Communication 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 Communication and Informatics, Moscow, Russia*

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

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

*Moscow Technical University of Communication 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 Communication 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 Communication 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 Communication 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 Communication 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 Vil R., Lobova E.O.**

*Moscow Technical University of Communication 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. **Rykov K.S.**

*Gemalto M2M, Siemensdamm, Berlin, Germany*

**DUPLEXER PERFORMANCE OPTIMIZATION FOR MULTI-BAND RF**

**FRONT- END IN MOBILE APPLICATIONS**

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

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

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

**WITH ANDROID OS**

31. **Zhuravlev A.P.**

*Moscow Technical University of Communication 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., 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 Communication and Informatics, Moscow, Russia*

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

**3. Babkin V.A., Stroganova E.P.**

*Moscow Technical University of Communication 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., 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 Communication and Informatics, Moscow, Russia*

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

7. **Bykov A.D., Voronov V.I., Voronova L.I.**

*Moscow Technical University of Communication 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 Communication 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.**

*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. (IEEE Member)**

*Povolghsky 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 Communication 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., 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 Communication 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 Communication 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., Vlasuyk I.V.**  
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**APPLICATION OF WEBER-FECHNER LAW IN IMAGE TRANSMISSION  
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20. **Likhhtsinder B.J.**  
*Povolzhskiy State University of Telecommunications and Informatics, (PSUTI),  
Samara, Russia*  
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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,  
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**FIBER-OPTIC VIBRATION SENSOR «VIB-A»**



**22. Melnik S.V., Smirnov N.I.**

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Moscow, Russia;*

*Central Science Research Telecommunication Institute (CSRTI), Moscow, Russia*

**VOICE AUTHENTICATION SYSTEM FOR CLOUD NETWORK**

**23. Morozov O.G., Nureev I.I., Sakhabutdinov A.Zh., Misbakhov R.Sh., Papazyan S.**

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*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.**

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*Central Science Research Telecommunication Institute (CSRTI), Moscow, Russia;*

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**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 Communication and Informatics, Moscow, Russia;*

*North-Ossetian State University, Vladikavkaz, Russia*

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**27. Sokolov S.A., Zubilevich A.L., Morozov B.N.**

*Moscow Technical University of Communication 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 VNIKP, Moscow, Russia;*

*FSUE ZNIIS, Moscow, Russia*

**EFFECT OF DEVIATION FROM STANDARD TEST PROCEDURE**

**FOR EVALUATION OPTICAL FIBRES COMPATIBILITY WITH FILLING  
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29. **Trukhin S.M., Petrova E.N.**

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Central Science Research Telecommunication Institute (CSRTI), Moscow, Russia;  
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**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*

**BANDWIDTH OPTIMIZATION OF BURUNDI TRANSPORT NETWORK**

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### **Intelligent Transport Systems**

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

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

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

**2. Bolshakov A., Rogatneva E.**

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**USING FUZZY LOGIC TO MANAGE INFORMATION RISK**

**3. Boychenko K.V., Boychenko I.V.**

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

**INTERACTIVE BUILT SPACE AS THE NEW MEANS  
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**4. Bruevich N.A., Ivashkin Yu.A., Nikitina M.A.**

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*V.M. Gorbатов Federal Research Center for Food Systems of Russian Academy of Sciences,  
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**MOBILE APPLICATION FOR ANALYSIS AND CORRECTION  
OF INDIVIDUAL FOOD RATION**

**5. 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**

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

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

*Moscow, Russia*

**INTELLIGENT VEHICLE CONDITION MONITORING SYSTEM**

**7. Erokhin S.D.**

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

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

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

**9. Gorodnichev M.G., Polyantseva K.A., Yashina M.V.**

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**INFORMATIONAL ASPECTS OF AUTOMATED MONITORING  
OF DANGEROUS DRIVING**

**10. Gostev I.M.**

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*A.A. Kharkevich Institute for Information Transmission Problems, Russian Academy  
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**ON METHODS OF GRAPHIC OBJECT RECOGNITION BASED  
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**11. 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*

**THE USAGE OF NEURAL NETWORKS FOR MOTION PREDICTION  
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**12. Kapterev A.I., Romashkova O.N.**

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

**CHALLENGES FOR RUSSIAN ECOSYSTEM OF HIGHER EDUCATION  
FOR ON BOARD COMMUNICATIONS**

**13. Kukharenko E.G., Korkunov I.A., Gorodnichev M.G., Salutina T.U.**

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

**ON THE INTRODUCTION OF DIGITAL ECONOMICS  
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**14. Marsov V.I., Gematudinov R.A., Seleznev V.S., Dzhabrailov K.A.**

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*Moscow, Russia*

**DEPENDENCE OF THE EFFICIENCY OF THE DISTRIBUTION  
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**15. Molzahn S.-E., Rehborn H., Koller M., Kerner B.S., Klenov S.L.**

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

**ANALYSIS OF SPEED DISTURBANCES IN EMPIRICAL SINGLE  
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**16. 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  
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**17. Platonov S.A., Platonov A.V., Postnikov M.E., Khadonova S.V., Dymkova S.S.**

*ST Technology LLC;*

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

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

**18. Pospelov P.I., Belova M.A., Tatashev A.G., Yashina M.V.**

*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 CALI-  
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**19. Shatrov M.G., Golubkov L.N., Dunin A.Y., Dushkin P.V.**

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*Moscow, Russia*

**PRESSURE OSCILLATIONS AS A FACTOR AFFECTING  
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**20. Sinyavski V.V., Shatrov M.G., Dunin A.Y., Shishlov I.G., Vakulenko A.V.**

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*Moscow, Russia*

**RESULTS OF SIMULATION AND EXPERIMENTAL RESEARCH  
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21. **Skakodub A.A., Varlamova O.V.**

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

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

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**THE RESEARCH OF THE OPERATION OF THE LITHIUM-IRON-PHOSPHATE BATTERY OF AN ELECTRIC VEHICLE IN HIGH AND LOW TEMPERATURES**

23. **Usache V.A., Voronova L.I., Voronov V.I., Zharov I.A., Strelnikov V.G.**

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

24. **Yakimov M.R.**

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**DETERMINATION OF THE OPTIMAL NUMBER OF PARKING SPACES BASED ON THE FORMULATION AND SOLUTION OF THE OPTIMIZATION PROBLEM OF THE TRANSPORT DEMAND DISTRIBUTION**

25. **Yakubovich A.N., Yakubovich I.A., Trofimenko Yu.V., Shashina E.V.**

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**INTELLIGENT MANAGEMENT SYSTEM OF THE AUTOMOBILE ROAD'S TECHNICAL AND OPERATIONAL CONDITION IN THE CRYOLITHOZONE**

26. **Yashina M.V., Dotkulova A.S., Susoev N.P., Fomina M.Ju.**

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