

# 23rd International Conference on Distributed Computer and Communication Networks (DCCN 2020) – AGENDA

## September 14 (Monday) – September 18 (Friday), 2020

### Organizers

V.A. Trapeznikov Institute of Control Sciences of RAS (ICS RAS, Russia, Moscow)

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

### Venues

September 14 (Monday), 2020 at ICS RAS

65 Profsoyuznaya street, Moscow 117997, Russia

September 15 (Tuesday) – September 17 (Friday), 2020 at RUDN

Faculty of Science, Ordzhonikidze str. 3, 115419 Moscow, Russia

### Tracks

Track A. Computer and Communication Networks: Architecture, Protocols and Technologies. Chair: Vladimir Vishnevsky. Co-chair: Dmitry Kozyrev.

Track B. Modeling of Distributed Systems and Networks. Chair: Konstantin Samouylov. Co-chair: Irina Kochetkova.

Track C. Distributed Systems Applications. Chair: Andrey Koucheryavy. Co-chair: Daria Ostrikova.

|                                  |                    | ICS RAS  |         |
|----------------------------------|--------------------|--|---------|
| Monday,<br>September 14,<br>2020 | TIME (Moscow time) |  | ICS RAS |
|                                  | 12:30–18:30        | <p style="text-align: center;"><b>Conference Opening</b><br/>Chairman: <i>Vladimir Vishnevsky</i>, ICS RAS</p>   |         |
|                                  | 12:30–13:00        | <p style="text-align: center;">Welcome Speech: <i>Dmitry Novikov</i>, Director, ICS RAS<br/>Welcome Speech: <i>Konstantin Samouylov</i>, Director, AMCT Institute, RUDN</p>                              |         |
|                                  | 13:00–14:00        | <p style="text-align: center;">Crystal-Ball and Magic Wand Combined: Predicting Situations and Making them Happen<br/><i>Arkady Zaslavsky</i>, Deakin University, Australia</p>                          |         |
|                                  | 14:00–15:00        | <p style="text-align: center;">Beyond 5G: use-cases, applications and design specifics of terahertz band communications<br/><i>Dmitri Moltchanov</i>, Tampere University, Finland</p>                    |         |
|                                  | 15:00–16:00        | <p style="text-align: center;">Investigation of Interdependent Process — a Semi-Markov Approach<br/><i>Achyutha Krishnamoorthy</i>, Centre for Research in Mathematics, CMS College, Kottayam, India</p> |         |
|                                  | 16:00–16:30        | Break  |         |
|                                  | 16:30–17:30        | <p style="text-align: center;">RAIN RFID Technology: Past, Present and Future<br/><i>Pavel Nikitin</i>, Impinj, Seattle, WA, USA</p>   |         |
|                                  | 17:30–18:30        | <p style="text-align: center;">Queues and their applications in service industries<br/><i>Srinivas R. Chakravarthy</i>, Kettering University, USA</p>  |         |
|                                  |                    |  |         |

Tuesday,  
September 15,  
2020

RUDN

|             | <b>A.1.1. Computer and Communication Networks:<br/>Architecture, Protocols and Technologies</b><br><i>Chairs: Prof. K.Samouylov, Prof. Yu. Gaidamaka</i>  | <b>B.1.1. Modeling of Distributed Systems and Networks</b><br><i>Chairs: Prof. A.Krishnamoorthy, Prof. Varghese C. Joshua</i>  | <b>C.1.1. Distributed Systems Applications</b><br><i>Chairs: Prof. A.Koucheryavy , Dr. I.Kochetkova</i>  |
|-------------|---|--|--|
| 11:00–11:15 | <b>Malcolm Egan, Laurent Clavier</b><br>Multivariate $\alpha$ -Stable Models in OFDM-Based IoT Networks with Interference From a Poisson Spatial Field of Interferers (ID 137)                                      | <b>Dhanya Babu, Varghese C. Joshua, Achyutha Krishnamoorthy</b><br>Token Based Parallel Processing Retrial Queueing System with a Probabilistic Joining Strategy for Priority Customers (ID 102) | <b>Adam Vas, László Tóth</b><br>Comparison of different methods for smoothing initial 2D data of the DSN-PC system's weather prediction algorithm (ID 74)                      |
| 11:15–11:30 | <b>Angesom Ataklity Tesfay, Eric Simon, Laurent Clavier</b><br>Multi-user Detection to Improve Downlink Communication of CSS-based LoRa-like Networks (ID 163)  | <b>Khamis Abdullah Khamis AL Maqbali, Varghese C. Joshua, Achyutha Krishnamoorthy</b><br>On A Single Server Queueing Inventory System (ID 140)   | <b>Artem Volkov, Ali R. Abdellah, Ammar Muthanna, Andrey Koucheryavy</b><br>IoT traffic prediction with Neural networks learning based on SDN infrastructure (ID 55)           |
| 11:30–11:45 | <b>Aminu Adamu, Vsevolod Shorgin, Yuliya Gaidamaka</b><br>Flexible Random Early Detection Algorithm for Queue Management in Routers (ID 148)  | <b>Nisha Mathew, Varghese C. Joshua, Achyutha Krishnamoorthy</b><br>A Queueing Inventory System with Two Channels of Service (ID 164)  | <b>Maria Makolkina, Nikolay Shypota, Andrey Koucheryavy</b><br>Development and investigation of the IMT-2020 model network using MEC and Voice Assistant technologies (ID 177) |
| 11:45–12:00 | <b>Nadezhda Chukhno, Olga Chukhno, Giuseppe Araniti, Antonio Iera, Antonella Molinaro, Sara Pizzi</b><br>Delivering Multicast Traffic in mmWave Systems: Challenges and Performance Analysis (ID 151)               | <b>Sinu Lal T S, Varghese C. Joshua, Achyutha Krishnamoorthy</b><br>A disease outbreak managing queueing system with self-generation of status and random clock for quarantine time (ID 171)     | <b>Alexey Tsarev, Pavel Abaev</b><br>Mathematical model for horizontal on-demand vEPC scalability in SDN-based environment (ID 156)  |
| 12:00–12:15 | <b>Abdukodir Khakimov, Konstantin Samouylov, Ammar Muthanna</b><br>Dynamic Algorithm for Building Future Networks Based on Intelligent Core Network (ID 108)  | <b>Varghese C. Joshua, Ambily P. Mathew, Achyutha Krishnamoorthy</b><br>A Retrial Queueing System in which Server Searches to Accumulate Customers for Optimal Bulk Serving (ID 98)              | <b>Vitaly Morozov, Konstantin Alikin</b><br>Scaling error suppression in small signal preamplifiers for vibration monitoring networks (ID 72)                                  |
| 12:15–12:30 | <b>Vitalii Beschastnyi, Daria Ostrikova, Yuliya Gaidamaka</b><br>Modelling Multi-connectivity in 5G NR Systems with Mixed Unicast and Multicast Traffic (ID 53)   | <b>Anilkumar M P, Jose K. P.</b><br>Comparison of Different Levels of Local Purchase Quantities in a Geo/Geo/1 Production Inventory System (ID 152)  | <b>Alexey Vanin, Vladimir Bogatyrev, Stanislav Bogatyrev</b><br>Data migration rate of the CRUSH-based distributed object storage with dynamic topology (ID 73)                |
| 12:30–12:45 | <b>Amir Mukhtarov, Andrey Larionov, Oleg Pershin, Vladimir Vishnevsky</b><br>On optimal placement of base stations in wireless broadband networks to control a linear section with end-to-end delay limited (ID 32) | <b>Miyawathura Ihala Gamage Suranga Sampath</b><br>Transient analysis of an M/M/1/N queue with balking, catastrophes, server failures and repairs (ID 113)                                       | <b>Anton Mamonov, Soltan Salpagarov, Ruslan Varlamov</b><br>Distribution of Computing Load by using a P2P Network (ID 86)  |
| 12:45–13:00 | <b>Semyon Dorokhin</b><br>Synchronisation of ISS-OFDM signals (ID 95)   | <b>Ksenia Zhukova</b><br>Estimating the overflow probability in single-server retrial system with two classes of customers (ID 159)  |  |
| 13:00–13:30 | Break   |  |  |
|             | <b>A.1.2. Computer and Communication Networks:<br/>Architecture, Protocols and Technologies</b><br><i>Chairs: Prof. K.Samouylov, Dr. E.Sopin</i>  | <b>B.1.2. Modeling of Distributed Systems and Networks</b><br><i>Chairs: Prof. A.Dudin, Dr. O.Semenova</i>   | <b>C.1.2. Distributed Systems Applications</b><br><i>Chairs: Prof. R.Kirichek, Dr. D.Ostrikova</i>   |

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|-----------------------------------|-------------|--|--|---|------|
| Tuesday,<br>September 15,<br>2020 | 13:30–13:45 | <b>Eduard Sopin, Alexandra Darmolad, Dinara Bixalina</b><br>Quantifying the round-trip delay in Cloud-RAN (ID 59)  | <b>Alexander Dudin, Sergei Dudin, Olga Dudina</b><br>Optimization of a signal processing strategy in sensor nodes with energy harvesting and consumption for admission and transmission (ID 20)            | <b>Ekaterina Markova, Dmitri Moltchanov, Rustam Pirmagomedov, Daria Ivanova, Yevgeni Koucheryavy, Konstantin Samouylov</b><br>Prioritized Service of URLLC Traffic in Industrial Deployments of 5G NR Systems (ID 91) | RUDN |
|                                   | 13:45–14:00 | <b>Pavel Pristupa</b><br>Forward error correction efficiency in transport protocol at intrasegment level (ID 49)   | <b>Valentina Klimenok, Alexander Dudin, Vladimir Vishnevsky</b><br>Unreliable queueing system with Markovian arrival process and backup server as a model of hybrid communication system (ID 141)          | <b>Eduard Sopin, Vyacheslav Begishev, Dmitri Moltchanov, Andrew Samouylov</b><br>Resource Queuing System with Preemptive Priority for URLLC and eMBB Coexistence in 5G NR (ID 61)                                     |      |
|                                   | 14:00–14:15 | <b>Viacheslav Kulik, Van Dai Pham, Ruslan Kirichek</b><br>Models and methods of usage of the heterogeneous gateways in the mesh LPWAN networks (ID 116)                                    | <b>Valentina Klimenok, Alexander Dudin, Vladimir Vishnevsky</b><br>Система массового обслуживания ММАР/PH <sub>{1,2}</sub> /N/0 с неоднородными запросами и приоритетами (ID 64)                           | <b>Dmitriy Sazonov, Ruslan Kirichek</b><br>Identification of devices in a mesh networks based on Digital Object Architecture (ID 87)  |      |
|                                   | 14:15–14:30 | <b>Lev Kuzmin</b><br>Approach to indoor distance measurement in wireless sensor networks by means of Ultra-Wide-Band chaotic radio pulses (ID 97)  | <b>Gheorghe Mishkoy, Lilia Mitev</b><br>Computational Aspects of Modeling Performance Characteristics for Polling Models with Semi-Markov Switching and Priorities (ID 71)                                 | <b>Yury Rassadin, Sergey Dushin</b><br>Wireless Sensor Network for Intensive Data Collection Based on LoRaWAN Technology and Distributed Data Compression Algorithm (ID 284)  |      |
|                                   | 14:30–14:45 | <b>Ilya Nikolsky, Kirill Furmanov</b><br>On effectiveness of message retransmission in wireless sensor networks (ID 96)  | <b>Ivan Tsitovich</b><br>Group Polling Method for Sensors Detecting in Unsynchronized Structured Wireless Monitoring Networks (ID 76)  | <b>Natalia Apatova, Oleg Boychenko, Oleg Korolyov, Ilya Gavrikov, Timur Uzakov</b><br>Sustainability of Cryptotokens in the Digital Economy (ID 47)   |      |
| Tuesday,<br>September 15,<br>2020 | 14:45–15:00 | <b>Van Dai Pham, Tran Duc Le, Ruslan Kirichek</b><br>A study of using AODV protocol in LoRa Mesh network (ID 121)  | <b>Stepan Rogozin</b><br>Simulation a modified Erlang system with priority customers (ID 109)  | <b>Van Dai Pham, Iliia Grishin, Ruslan Kirichek</b><br>Метод определения координат узлов в беспроводной сенсорной сети с ячеистой топологией (ID 119)   |      |
|                                   | 15:00–15:15 | <b>Van Dai Pham, Tran Duc Le, Ruslan Kirichek</b><br>Исследование протоколов маршрутизации для ячеистой сети дальнего радиуса действия (ID 118)  | <b>Rostislav Razumchik</b><br>Stationary waiting time distribution in the infinite-capacity two-queue single-server resequencing system with HOQ-LIFO-LIFO policy operating in random environment (ID 169) |   |      |
|                                   | 15:15–15:30 | <b>Viacheslav Kulik, Денис Галлямов, Ruslan Kirichek</b><br>Подходы к определению приоритетов обслуживания сетевого трафика для гетерогенных шлюзов промышленного Интернета вещей (ID 150) | <b>Tatiana Milovanova, Dmitry Kozyrev, Rostislav Razumchik</b><br>Modeling D2D-enhanced IoT Connectivity (ID 17)   |   |      |
|                                   | 15:30–16:00 | Break  |  |   |      |
| Tuesday,<br>September 15,<br>2020 |             | <b>A.1.3. Computer and Communication Networks: Architecture, Protocols and Technologies</b><br><i>Chairs: Prof. D.Namiot, Prof. L.Abroshimov</i>   | <b>B.1.3. Modeling of Distributed Systems and Networks</b><br><i>Chairs: Prof. N.Markovich, Prof. U.Krieger</i>  | <b>C.1.3. Distributed Systems Applications</b><br><i>Chairs: Prof. R.Kirichek, Dr. M. Makolkina</i>   |      |
|                                   | 16:00–16:15 | <b>Dmitry Namiot</b><br>How to build a hyper-local Internet (ID 42)  | <b>Natalia Markovich, Udo Krieger</b><br>Statistical Analysis of the End-to-End Delay of Packet Transfers in a Peer-to-Peer Network (ID 2)   | <b>Viktoriia Khalina, Vladislav Prosvirov, Yuliya Gaidamaka, Jiri Pokorny, Jiri Hosek, Konstantin Samouylov</b><br>Simulation-based Analysis of Mobility Models for Wireless UAV-to-X Networks (ID 143)               |      |
|                                   | 16:15–16:30 | <b>Alexander Paramonov, Tatiana Tatarnikova, Anastasia Marochkina</b><br>Analysis of the using of D2D communications for the ad hoc network based on subscriber terminals (ID 19)          | <b>Natalia Markovich, Maksim Ryzhov</b><br>Leader Election in Communities for Information Spreading (ID 62)  | <b>Vladimir Vishnevsky, Truong Duy Dinh, Anastasia Vybornova, Ruslan Kirichek</b><br>Flying Network for Emergency using Tethered Multicopters (ID 288)  |      |

Tuesday,  
September 15,  
2020

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|-------------|--|--|---|------|
| 16:30–16:45 | <b>Alexander Paramonov, Tatiana Tatarnikova, Regina Shamilova</b><br>The method for user localization in the local wireless network in an emergency (ID 18)                                | <b>Alexander Mandel, Viktor Laptin</b><br>Channel Switching Strategies for multistep Markovian Controllable Queuing Systems Problems (ID 24)   | <b>Konstantin Vytovtov, Vladimir Vishnevsky, Elizaveta Barabanova</b><br>Model of Navigation and Control System of an Airborne Mobile Station (ID 178)    | RUDN |
| 16:45–17:00 | <b>Margarita Rudenkova, Hussein Khayou, Leonid Abrosimov</b><br>Methodology for adapting wireless channel resources to the load by switching between shared media access protocols (ID 85) | <b>Mariia Nosova</b><br>Research of demographic processes by methods of queuing theory (ID 66)   | <b>Sergey Vladimirov, Vladimir Vishnevsky, Andrey Larionov, Ruslan Kirichek</b><br>Concept of UFP based WBAN Data Acquisition Network (ID 55)             |      |
| 17:00–17:15 | <b>Elizaveta Barabanova, Konstantin Vytovtov, Victor Podlazov, Vladimir Vishnevsky</b><br>High-capacity photon switching systems based on the two-stage 256x256 switch (ID 48)             | <b>Vadim Fitsov, Boris Goldstein</b><br>The mathematical model of Front-End calculating in DPI system (ID 142)   | <b>Abdukodir Khakimov, Mohammed Muthanna, Konstantin Samouylov, Ammar Muthanna</b><br>Agriculture management based on LoRa Edge Computing System (ID 106) |      |
| 17:15–17:30 | <b>Hussein Khayou, Margarita Rudenkova, Leonid Abrosimov</b><br>An Algebraic Approach to Loop Free Routing (ID 139)  | <b>Alexey Shagraev, Andrey Efanov, Sergey Ivliev</b><br>Welford's algorithm for accurate computation of weighted mean, variance, and covariance (ID 157)   |   |      |
| 17:30–17:45 | <b>Boris Goldstein, Sergey Kislyakov</b><br>Forecasting the incoming load of a contact center using chaos theory methods (ID 45)   | <b>Lusine Meykhanadzhyan, Tatiana Milovanova, Ivan Zaryadov</b><br>Stationary Characteristics of the two-node Tandem Queueing System with Poisson Arrivals and General Renovation (ID 100)                         |   |      |
| 17:45–18:00 | <b>Arsenii Bakanov, Dmitry Volchkov, Nina Bakanova</b><br>Creation and visualization of the subject area model (ID 13)   | <b>Konstantin Vytovtov, Elizaveta Barabanova, Vladimir Vishnevsky, Irina Kvyatkovskaya</b><br>The Analytical Model of Six-Dimensional Linear Dynamic Systems With Arbitrary Piecewise-Constant Parameters (ID 165) |   |      |

Wednesday,  
September 16,  
2020

|             | <b>A.2.1. Computer and Communication Networks: Architecture, Protocols and Technologies</b><br><i>Chairs: Prof. V.Gerdt, Prof. V.Abgaryan</i>                          | <b>B.2.1. Modeling of Distributed Systems and Networks</b><br><i>Chairs: Prof. A.Melikov, Prof. A.Nazarov</i>  | <b>C.2.1. Distributed Systems Applications</b><br><i>Chairs: Prof. T.Atanasova, Dr. E.Markova</i>  |
|-------------|--|--|--|
| 11:00–11:15 | <b>Vladimir Gerdt</b><br>Milestone Developments in Quantum Information and No-Go Theorems (ID 23)  | <b>Srinivas Chakravarthy, Alka Choudhary, Rakesh Meena</b><br>Queues with Markovian Arrivals, Phase type Services, Breakdowns, and Repairs (ID 50)   | <b>Tatiana Atanasova, Kristina Dineva</b><br>Architectural ML Framework for IoT Services Delivery Based on Microservices (ID 58)   |
| 11:15–11:30 | <b>Vahagn Abgaryan</b><br>On overall measure of non-classicality of N-level quantum system and its universality in the large N limit (ID 134)                          | <b>Agassi Melikov, Mamed Shahmaliyev, Sevinj Aliyeva</b><br>Approximate Analysis of the Queuing System with Heterogeneous Servers and N-Policy (ID 5)  | <b>Tatiana Atanasova, Arsenii Bakanov, Nina Bakanova</b><br>Applying of Machine Learning on The Data from Structured Database at Research Institute for Decision Making Support (ID 107) |
| 11:30–11:45 | <b>Vladimir Gerdt, Ekaterina Kotkova</b><br>On the quantum teleportation of Bell states performed on 5-qubit IBM Q computers (ID 144)                                  | <b>Anatoly Nazarov, Svetlana Rozhkova, Ekaterina Titarenko</b><br>Asymptotic analysis of M/M/1 RQ-system with feedback and non-ordinary Poisson arrival (ID 93)  | <b>Evgeny Mikhailov, Vladimir Vishnevsky</b><br>Reserve navigation system of tether powered unmanned aerial vehicle in conditions of turbulent atmosphere (ID 136)                       |
| 11:45–12:00 | <b>Dhanesh Garg</b><br>Exponential Tsallis-Havrda-Charvat Entropy and its Applications in Coding Theory, Industrial Engineering and Quantum Information Theory (ID 63) | <b>Anatoly Nazarov, Tuan Phung-Duc, Svetlana Paul, Olga Lizyura</b><br>Asymptotic-Diffusion Analysis of Multiserver Retrial Queue with Two-Way Communication (ID 132)                                  | <b>Plamen Petrov, Georgi Kostadinov, Petar Zhivkov, Veneta Velichkova, Todor Balabanov</b><br>Approximate Sequencing of Virtual Reels with Genetic Algorithms (ID 122)                   |
| 12:00–12:15 | <b>Astghik Torosyan, Vahagn Abgaryan</b><br>Индикатор Кенфака-Жичковского для пространства состояний кубитов и кутритов (ID 153)                                       | <b>Anatoly Nazarov, Tuan Phung-Duc, Yana Izmailova</b><br>Gaussian asymptotics for a multiclass M/M/1/1 retrial queueing system (ID 40)  | <b>Alexander Alexandrov</b><br>SARSA based method for WSN transmission power management (ID 90)  |
| 12:15–12:30 | <b>Martin Bures, Vahagn Abgaryan, Astghik Torosyan</b><br>О мерах классичности/квантовости квазивероятностных представлений конечнономерных квантовых систем (ID 154)  | <b>Elizaveta Chernyshova, Ekaterina Lisovskaya, Svetlana Moiseeva, Michele Pagano</b><br>On a Total Amount of Occupied Resource in the System with Parallel Service and Renewal Arrival Process (ID 7) | <b>Andrey Ivanov, Natalia Ziazina, Antonova Veronika</b><br>Performance of MATLAB clustering algorithms (ID 36)  |
| 12:30–12:45 |  | <b>Evgeny Polin, Svetlana Moiseeva, Alexander Moiseev</b><br>Исследование бесконечнолинейной СМО с интенсивностью входящего потока, зависящей от состояния системы (ID 161)                            |  |
| 12:45–13:00 |  | <b>Svetlana Paul, Anatoly Nazarov, Polina Klyuchnikova</b><br>Исследование циклической системы с повторными вызовами (ID 138)  |  |

Wednesday,  
September 16,  
2020

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|-------------|-------|--|---|
| 13:00–13:30 | Break |  |   |
|             |       | <b>B.2.2. Modeling of Distributed Systems and Networks</b><br><i>Chairs: Prof. M.Pagano, Prof. E.Morozov</i>   | <b>C.2.2. Distributed Systems Applications</b><br><i>Chairs: Prof. E.Shchetinin, Prof. D.Kulyabov</i>   |
| 13:30–13:45 |       | <b>Anastasia Galileyskaya, Ekaterina Lisovskaya, Michele Pagano, Svetlana Moiseeva</b><br>Resource QS with the Requests Duplication at the Second Phase and Renewal Arrival Process (ID 8) | <b>Eugene Yu. Shchetinin, Leonid Sevastianov, Anastasia Demidova, Edik Ayrjan</b><br>Melanoma detection with deep neural networks (ID 10)   |
| 13:45–14:00 |       | <b>Michele Pagano, Oleg Lukashenko, Evsey Morozov</b><br>Rare-event simulation for the hitting time of Gaussian processes (ID 158)   | <b>Eugene Yu. Shchetinin, Leonid Sevastianov, Dmitry Kulyabov, Edik Ayrjan, Anastasia Demidova</b><br>Paralinguistic model for emotions recognition with deep neural networks (ID 11) |
| 14:00–14:15 |       | <b>Elmira Yu. Kalimulina</b><br>On ergodicity of some stochastic networks and its applications (ID 57)   | <b>Eugene Yu. Shchetinin, Leonid Sevastianov, Dmitry Kulyabov, Edik Ayrjan</b><br>On improving the accuracy of the classification on imbalanced classes with machine learning (ID 26) |

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| 14:15–14:30 | <b>Galina Zverkina</b><br>Ergodicity of generalized Markov modulated Poisson processes (ID 124)  | <b>Sergey Melnikov, Konstantin Samouylov</b><br>Cesaro-heredity property in the shift register family (ID 250)                                       |
| 14:30–14:45 | <b>Taisia Morozova, Evsey Morozov</b><br>Analysis of the remaining busy time in a retrieval system (ID 128)  | <b>Ali R. Abdellah, Artem Volkov, Ammar Muthanna, Andrey Koucheryavy</b><br>Deep Learning for IoT Traffic Prediction based on Edge Computing (ID 54) |
| 14:45–15:00 | <b>Irina Peshkova, Evsey Morozov</b><br>On Comparison of Multiserver Systems with Two-component Mixture Distributions (ID 99)  | <b>Mikhail Dyachkov</b><br>Modifications of classic GMDH algorithm and proof of correctness modified algorithm (ID 30)                               |
| 15:00–15:15 | <b>Oleg Brekhov</b><br>Integrated tolerant distributed computing network (ID 82)   | <b>Ivan Brokarev, Sergey Vaskovskii</b><br>Information-processing system for natural gas quality analysis (ID 22)                                    |
| 15:15–15:30 | <b>Ruslana Nekrasova</b><br>Regenerative estimation of M/G/2-type system with simultaneous service and speed scaling (ID 78)   | <b>Vladimir Vorobiev</b><br>Нейронная сеть мониторинга взрывов в карьерах (ID 79)  |
| 15:30–16:00 | Break  |  |
|             | <b>B.2.3. Modeling of Distributed Systems and Networks</b><br><i>Chairs: Prof. D.Efrosinin, Dr. S.Vasilyev</i>   | <b>C.2.3. Distributed Systems Applications</b><br><i>Chairs: Prof. D.Kulyabov, Dr. M.Gevorkyan</i>   |
| 16:00–16:15 | <b>Alexandra Borodina, Vitaliy Tishenko</b><br>On algorithms for effective speed-up simulation of reliability models (ID 114)  | <b>Saulius Japertas, Ruta Jankuniene</b><br>NFC Vulnerabilities Investigation (ID 147)   |
| 16:15–16:30 | <b>Dmitry Efrosinin, Vladimir Rykov, Natalia Stepanova</b><br>Evaluation and prediction of an optimal control in a processor sharing queueing system with heterogeneous servers (ID 3)                     | <b>Oleg Boychenko, Ilya Gavrikov</b><br>Assessing Password Protection Effectiveness Using Markov Processes (ID 27)                                   |
| 16:30–16:45 | <b>Evgeny Golovinov, Dmitrii Aminev, Sergey Tatunov, Sergey Polesskiy, Dmitry Kozyrev</b><br>Оценка комплектов ЗИП для распределённой коммуникационной сети метеостанций минимальной конфигурации (ID 245) | <b>Evgenia Anikina, Andrey Kalashnikov</b><br>Management of risks for complex computer network (ID 37)   |
| 16:45–17:00 | <b>Sergey Shorokhov</b><br>On wireless channel modeling with K distribution (ID 167)   | <b>Anatoly Yermakov</b><br>The Markov Model for a Multiphase Security System with the Partial Concurrent Service (ID 190)                            |
| 17:00–17:15 | <b>Anna Korolkova, Dmitry Kulyabov, Michal Hnatič</b><br>The multi-model approach to the study of complex systems using the example of the RED active queue management algorithm (ID 104)                  | <b>Alexander Grusho, Nick Grusho, Elena Timonina, Michael Zabezhailo</b><br>Generation of metadata for information technology control (ID 28)        |
| 17:15–17:30 | <b>Anna Korolkova, Anna Maria Apreutesey, Dmitry Kulyabov</b><br>Возможности гибридного моделирования систем с управлением на языках Modelica и Julia (ID 111)   | <b>Viktor Nikolaevtsev, Sergei Suchkov, Dmitry Suchkov</b><br>Method of Frequency Coding in Microwave RFID (ID 92)                                   |
| 17:30–17:45 | <b>Sergey Vasilyev, Mohamed Adel Bouatta, Galina Tsareva, Shakhmurad Kanzitdinov</b><br>Dobrushin mean-field approach for time-scaling queueing systems with a small parameter (ID 185)                    |  |
| 17:45–18:00 | <b>Sergey Vasilyev, Mohamed Adel Bouatta, Shakhmurad Kanzitdinov</b><br>Solving optimal control problems of large-scale queueing systems with a small parameter (ID 186)                                   |  |

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Thursday,  
September 17,  
2020

|             | <b>A.3.1. Computer and Communication Networks: Architecture, Protocols and Technologies</b><br><i>Chairs: Prof. S.Stepanov</i>   | <b>B.3.1. Modeling of Distributed Systems and Networks</b><br><i>Chairs: Prof. A.Andronov, Prof. V.Rykov</i>  |  |
|-------------|--|---|--|
| 11:00–11:15 | <b>Sergey Stepanov, Mikhail Stepanov, Umer Andrabi, Juvent Ndayikunda</b><br>The Modeling of Resource Sharing for Heterogenous Data Streams over 3GPP LTE with NB-IoT Functionality (ID 34)          | <b>Alexander Andronov, Diana Santalova</b><br>Overbooking's problem for a case of a random environment existence (ID 15)  |  |
| 11:15–11:30 | <b>Sergey Stepanov, Mikhail Stepanov, Maxim Shishkin</b><br>Estimation of Performance Measures of Emergency Services for Overload of Calls (ID 35)   | <b>Tóth Ádám, Sztrik János, Pintér Ákos, Bács Zoltán</b><br>Reliability Analysis of Finite-Source Retrial Queueing Systems With Two-Way Communications to the Orbit and Blocking Using Simulation (ID 67)   |  |
| 11:30–11:45 | <b>Ilya Noskov, Vladimir Bogatyrev</b><br>Faultless and timely multipath packets delivery probability in computer networks using UDP-based protocol (ID 14)  | <b>Vladimir Rykov, Sahib Esa, Boyan Dimitrov</b><br>On different approaches to study a double redundant renewable system under Marshall-Olkin failure model (ID 123)  |  |
| 11:45–12:00 | <b>Vladimir Bogatyrev, Stanislav Bogatyrev, Anatoly Bogatyrev</b><br>Timeliness of Redundant Service of a Heterogeneous Request Flow by a Sequence of Nodes of the Info-communication System (ID 70) | <b>Vladimir Rykov, Nika Ivanova, Dmitry Kozyrev</b><br>Sensitivity Analysis of Characteristics of a k-out-of-n:F System to Shapes of Life and Repair Times Distributions of Its Components (ID 68)  |  |
| 12:00–12:15 | <b>Vladimir Shirokov</b><br>The concept, models and methods of accelerating transformation of 4G networks into 5G ecosystem (ID 182)   | <b>Nika Ivanova</b><br>Modeling and Simulation of Reliability Function of a k-out-of-n:F System with Partial Repair (ID 33)   |  |
| 12:15–12:30 | <b>Anatoliy Botvinko, Konstantin Samouylov</b><br>Imitational modelling of packets filtering process by a firewall with ranking rules (ID 110)   | <b>Hector Gibson Kinmanhon Houankpo, Dmitry Kozyrev, Emmanuel NIBASUMBA, Bienvenue N'dah Mouale Moutouama, Irina Artemovna Sergeeva</b><br>A simulation approach to reliability assessment of a redundant system with arbitrary distributions of uptime and repair time of its elements (ID 12) |  |
| 12:30–12:45 | <b>Alexey Simonov, Oleg Brekhov</b><br>Architecture and functionality of the collective operations subnet of the Angara interconnect (ID 155)  | <b>Vladimir Rykov, Vladimir Vishnevsky, Maxim Finkelstein</b><br>Профилактическое обслуживание привязного модуля высотной телекоммуникационной платформы (ID 187)   |  |
| 12:45–13:00 | <b>Alexandra Kuznetsova, Antonova Veronika</b><br>Изучение сбоев при работе технологии MIMO (ID 21)  | <b>Aleksandr Moshnikov</b><br>Evaluation of Network Reliability and Element Importance Metrics Using the R Software Package (ID 89)   |  |
| 13:00–13:30 | Break  |   |  |
| 13:30–13:45 | <b>Dmitry Kochetkov, Irina Kochetkova, Elena Makeeva</b><br>Влияние технологий 5G на развитие цифровых экосистем умных городов: наукометрический и патентный анализ (ID 174)                         | <b>Sergey Yablochnikov, Valentina Dzobelova, Irina Yablochnikova, Михаил Купцов, Vadym Shved</b><br>To the question of mathematical modeling of processes of optimization of Internet business (ID 179)   |  |
| 13:45–14:00 | <b>Dmitry Kochetkov, Marat Almaganbetov</b><br>5G: патентный ландшафт (ID 183)   |   |  |

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Friday,  
September 18,  
2020

11:00–12:00

**Round Table: On applications of the distributed systems (Круглый стол по вопросам приложений распределённых систем)**

*Chairs: Prof. Vladimir Vishnevsky, Prof. Konstantin Samouylov*

RUDN

12:00–12:15

**Conference Closing**