PROGRAM

12th INTERNATIONAL CONFERENCE

«ENGINEERING & TELECOMMUNICATION − En&T-2025»

November 26-27, 2025

November 26, 2025

«PHIZTECH. CLUB». Shopping center Airship. 2nd floor

10:00-11:00 **Registration 1 floor**

11:00-11:20 Opening Ceremony

Welcome speech by ***Organizing Committee***

Plenary Session

Working language of the Plenary Session: English

Moderator: **Prof. Alexander Dvorkovich, Corresponding Member RAS, MIPT, Russia**

11:20-11:50

High-capacity, high density optical interface for AI/ML

Son Thai Le, Director of Systems Design Architecture Engineering at Ciena, NJ, USA

11:50-12:20

MPEG Standardization: New Directions

Alexander B. Alshin, assistant vice president in LG Electronics, St. Peterburg R&D Lab, Russia

12:20-12:50

New Error-correcting Codes and Decoding Algorithms for 6G Wireless Networks

Alexey A. Frolov, Professor at the Skolkovo Institute of Science and Technology (Skoltech), Russia

12:50-13:20

Developing SDR-based Test Setups for Modern 5G Communication Network Devices
Alexander O. Boldyrev, Head of Radio Electronics Department, Software-Defined Radio (SDR), MMS, Russia

13:20-13:50

AI in Next Generation Wireless Networks: New Challenges and Opportunities

Andrey V. Klimakov, Ph.D., Lomonosov Research Institute, Russia

Discussions

14:00-15:00 Break

Round Table «AI in wireless communication »

15:00-18:00

Working language of the Round Table: English

Moderators: Evgeny M. Khorov, MIPT, Russia
Vladimir A. Lyashev, MIPT, Russia

Participants:
Artem Krasilov, IPPI RAS, Russia
Andrey Klimakov, Lomonosov Research Institute, Russia
Andrey Ivanov, Skoltech, Russia
Mikhail Lyakh, YADRO, Russia
Mérouane Debbah, Khalifa University, UAE
Giovanni Geraci, University Pompeu Fabra, Spain

Round Table Discussion

AI in Telecom: Revolution or Over-Engineering?
The promise of Artificial Intelligence is reshaping every industry, but in the complex, high-stakes world of telecommunications, the hype meets hard reality. Is AI a transformative force capable of rebuilding our foundational networks, or simply an expensive tool for marginal gains?
Join industry leaders and pioneers for a critical round table debate on the future of AI in wireless. We will move beyond the buzzwords to tackle the fundamental questions that will define the next decade of connectivity.

Key Discussion Points:

- **The Value Proposition:** Does AI deliver a fundamental advantage, or are we rebuilding well-established solutions for minimal gain? What is the "killer app"?
- **The Architecture Dilemma:** Do we need a complete "AI-native" air interface, or should AI remain a supporting tool? We'll dissect the trade-offs between performance and immense complexity.
- **The 6G Vision:** What does "AI-native" truly mean for the next generation of networks, and how will it handle the emerging wave of "AI traffic"?
- **Trust & Control:** How do human engineers build trust with an AI that may "hallucinate" or propose unexplainable configurations? How do we protect the network?
- **The New Paradigm:** Can we move from data transmission to "meaning" transmission for AI-to-AI communication?

This session is essential for anyone involved in network strategy, R&D, engineering, and the future of connectivity.

27 November 2025

Conference Sections

Session 1. Telecommunication systems and networks

10:00-15:00

Campus «FIZTECH. ARTIC». The classroom 4.18

Moderator: Prof. Alexander V. Dvorkovich, MIPT, Russia

Development of a Test Platform for Experimental in Vestigation and Comparative Analysis of Digital Predistortion Algorithms Using a Software-Defined Radio System
Maxim V. Artyushkin, Dmitry V. Mitr, Grigory M. Seregin

Applying Quantum Methods for Telecommunication and Calculations
Evgeny Ig. Khokhryakov

Farrow Filter Optimal Basis Functions Set
Alexander A. Busse, Dmitrii M. Solovev, Alexander Yu. Maslovsky

Adaptive Application of Intra Prediction for Point Cloud Attributes Based on the Analysis of DC Coefficients of Hierarchical Transform
Stanislav V. Efremov, Alexander B. Alshin

Development of a Camera Simulator for the Onboard Optical-Electronic System of a Spacecraft
Valeriia A. Gmyria, Andrey P. Treshchalin

On the Operator Approach to Precision Matrices Estimation
Robert N. Potekhin, Vladimir A. Lyashev

Distributed MU-MIMO Receiver Architecture for 6G Base Stations
Anton P. Strelnikov, Vladimir A. Lyashev

Industrial IoT Based on Commercial Off-the-Shelf Wi-Fi HaLow Devices
Ilya D. Ivanov, Aleksey A. Kureev, Dmitry V. Bankov

Testing SDL Soft Algorithm for Territory Radio Coverage Computation
Daniil D. Kolesnikov

Method for Measuring Laser Frequency Instability Based on a Mach-Zehnder Interferometer with Low-Frequency Phase Modulation
Zakhar D. Evsiukhin, Gregoriy Yu. Ivanov, Edgard An. Fomiryakov, Danil R. Kharasov, Anton Yu. Danilov, Sergey P. Nikitin, Vladimir N. Treshikov

A Method for Increasing the Spectral Efficiency of Wireless Communication Channels by Means of Spatial Isolation of External Interference
Mikhail D. Fedorov, Vladimir A. Lyashev, Mikhail N. Makurin

Extension of Dynamic Range Detected Signals of Fiber-Optic Sensor with Induced Artificial Reflective Centers Using Multiple Gauge Lengths
Ivan S. Pochtarev, Danil M. Bengalsky, Danil R. Kharasov, Viktor A. Odintsov, Vladimir N. Treshikov

Computational Polarimetry Based on Electrically Controlled Two-Dimensional Photodetectors

Valentin A. Semkin, Kirill N. Kapralov, Ilya M. Mazurenko, Mikhail Al. Kashchenko, Alexey Yu. Bocharov, Dmitry A. Svintsov

Dictionary Learning for MIMO OFDM Channel Tensor Tracking
Denis V. Shuvalov, Semyon V. Dorokhin

Optimization of 1D and 2D Nonlinear Models of Power Amplifier Using OLS Method
Alla G. Bolshakova

Multidimensional Canonical Decomposition for Parameter Estimation of Multipath Echo Components in Integrated Sensing and Communication Systems
Alexander S. Blagodarnyi, Alexander I. Sherstobitov, Vladimir A. Lyashev

Analysis of a Packet Aggregation Algorithm for Multi-Link Operation in Wi-Fi 7 Networks Over Lossy Channels
Arseni K. Dylko, Vladislav D. Paroshin, Ilya A. Levitsky, Vyacheslav Ar. Loginov

Impact of Adaptive Algorithm Parameters on the Throughput of MLD under Cross-link Interference
Evgeny S. Bogdanov, Ilya A. Levitsky

Evaluating Pilot Multiplexing Efficiency for Implicit Channel Estimation in Wi-Fi

Anton An. Tretiakov, Ilya Al. Levitsky, Vyacheslav A. Loginov, Evgeny M. Khorov

Block-OMP as a Cost-Effective Solution to Grid Mismatch Problem

Nikolai Ev. Kharanzhevsky, Semyon V. Dorokhin

DPD Model Based on a Neural Network Approach with Indirect Learning
Anton Sushko

Polyphase Decomposition of Nonlinear Filters for Digital Signal Predistortion Systems
Nikita Bakholdin, Sergei Bakhurin

5G NR MBS Coverage Capability Trials
Liang Xiangjun Liang, Pan Changyong, Zeng Qingjun

Terahertz quantum cascade lasers for free-space optical communications
Khabibullin Rustam

Session 2. Radio communication and radar systems

10:00-15:00

Campus «FIZTECH. TSIFRA ». The classroom 4.22a

Moderators: **Sergey P. Skobelev, PJSC «Radiophysics», Russia**
Prof. Vladimir E. Farber, PJSC «Radiophysics», Russia

The Influence of Filler Topology on the Dielectric Constant of Composite Materials
Mikhail A. Milogradov, Grigory M. Seregin

Analytical Model of an Energy Detector for Pisition-Modulated Chaotic Carrier
Yuri V. Andreyev

Investigation of Structural and Technological Factors Affecting Cavity Filter Characteristics
Vera N. Pigareva, Maksim V. Kovalev, Grigory M. Seregin

Adaptive DLMS Equalizer Based on Modern FPGA

Ivan A. Grigoryev, Yaroslav D. Prasolov

Modeling of a Reflecting Meta-Surface Based on Liquid Crystals
Ivan O. Dragomeretsky, Vladimir D. Burtsev, Dmitriy S. Filonov

Experimental Verification of the Electromagnetic Model of an External PIM Source
Vladislav V. Nesterenko, Stanislav A. Krikunov

Synthesis of Ultra-Wideband Chaotic Radio Pulses with a Large Baseline for the Implementation of Coherent Accumulation
Pavel A. Vladyka, Лев В. Кузьмин, Елена В. Ефремова

Shaping of Flat-Topped Element Patterns in Arrays of Dual-Helix Radiators
Kirill M. Sidorov, Sergei P. Skobelev

Towards a Simulation Pipeline for Large Molecular Ensembles
Egor V. Martynenko, Vladimir D. Burtsev, Dmitriy S. Filonov

Ultra-Sensitive Terahertz Detection Using Gapped Bilayer Graphene
Elena S. Titova, Mikhail A. Kashchenko, Dmitry A. Svintsov

Analysis of Microstrip Stacked Patch Antenna Parameters Depending on Lower Patch Substrate Thickness
Ekaterina S. Popel, Yury V. Krivosheev, Vitaly S. Brusov

Methods and Algorithms for Processing the Results of Tracking and Identifying Complex Radar Targets
Alexander A. Sevastyanov, Julia B. Kuranosova, Nikolai E. Gaiduchenko, Evgeniy N. Gurkin

Algorithm for Reducing Alignment Errors of Two Radars
Maria A. Kolmykova, Vladimir A. Dobrozhansky

Ultra-high-bandwidth offset dual-reflector antenna
Vadim A. Kaloshin, Bui Tuan Khanh

A frequency-scanning antenna array based on corrugated ribbon lines
Evgeny A. Ishenko. Vadim A. Kaloshin, Yuri G. Pasternak

Optical Heterodininig the Microwave Signal with the Frequences of 5-25 GHz
Dmitriy E. Chertilin, Alexander A. Sudarenko, Sergey V. Starikov

Session 3. Computing systems and intelligent data processing

10:00-15:00

Campus «FIZTECH. TSIFRA ». The classroom 4.17

Moderator: prof. Roman V. Meshcheryakov, ISC RAS, Russia
Mark V. Mamchenko, MIPT, Russia

Evaluating RAG System Models Robustness to Hybrid Homoglyph and Emoji-Based Next-Generation Adversarial Prompt Injection
Jaiswal Amit Kumar

Detection of Reverse Technologies Based on Continuous Video Monitoring: A Review of Methods and Solutions

Konstantin D. Rusakov, Tatiana Ya. Gladkih, Aleksey V. Grafenkov, Dmitriy E. Seliverstov

Application of Spectral Analysis and Reinforcement Learning Methods for Intelligent Financial Portfolio Management

Ekaterina Kubrakova

Rethinking the Grouping Strategy in Bottom-up Pose Estimation

Moghimi Sina, Ilia M. Voronkov, Alexander A. Kharlamov

Determination of the Trajectory Parameters of the First Stage of a Launch Vehicle at the Boost Phase Using Angle Measurements

Nikita D. Minigaliev

A Formal Approach to Verifying Isolation Policies in Data Center Networks
Andrey V. Larin, Nicholay N. Efanov, Dmitry V. Larin, Roman D. Goncharenko, Aleksey N. Durnov

Random Number Generator Based on a Chaotic Dynamical System

Oleg M. Opyakin, Daniil A. Vikultsev, Konstantin D. Lishik

Multiagent Hybrid LLM-Architecture for Automatic Preparation of Independent Investment Analysis of IPOs

Yuri P. Ammosov

Analyzing and Comparing the Quality of ARUCO and AprilTag Recognition under Additional Conditions
Timofey N. Belov, Matvey-Mansur A. Kurchenko, Nicholay A. Kuznetsov, Ivan S. Makarov

Development and Study of Methods for Estimating Camera Extrinsic Parameters Relative to a Field Using a Predefined Pattern
Artem C. Alexeyenko, Ivan O. Berku, Dmitry A. Komarov, Nicholay A. Kuznetsov, Ivan S. Makarov

Development of Software Based on an Improved Method for Assessing Information Security Against Leakage Through an Acoustic Speech Channel
Vladislav D. Denisov, Alexander V. Dushkin

Approach to the Inverse Problem of Hydrodynamics Using Machine Learning Methods
Michael A. Dorodnitsyn, Ivan A. Matveev

A method for Optimizing the YOLOv8s Neural Network Algorithm for the Rockchip RK3588 Processor
Bogdan I. Allaberdin, Alexander F. Bazzaev

Comparison of the Accuracy of Training Classifiers Using SVM, SAM, RF, and CNN Methods on Primary Hyperspectral Data and Preprocessed Data Using the Physical Information Method for Mineral Segregation Based on Images of an Iron ore Quarry
Rostislav E. Baryshnikov, Alexander S. Kuzmichev, Nicholay A. Zelenyy, Sergey V. Sorokin, Ivan S. Vasilitsa

A System for 3D Reconstruction of Navigation Marker Coordinates without Camera Pose Estimation
Andrei A. Matalygin, Ivan V. Kholodnyak, Alexander E. Antipov, Valeriy P. Treskov, Andrei V. Leus

Discrete Event Simulation with Lazy Event Processing

Shamil M. Gadzhimirzaev, Taras S. Afanasenko, Ruslan A. Pashkov, Alexander V. Helvas, Evgeniya A. Tsybulko, Igor V. Ablov

Robustness Analysis of Face Recognition Systems via Embedding Shift Evaluation in Clustered Feature Space under GAN-based Facial Manipulations
Aleksey R. Arshansky, Alexander I. Kolybelnikov, Alexey N. Nazarov

Deep Optical Sensing: Measuring the Spectrum, Polarization and Spatial Distribution of Radiation with Electrically Tunable Photodetectors