The IV International Conference on Information Technology and Nanotechnology (ITNT-2018) takes place in Samara (Russia) from April 24th to 27th, 2018. The Conference intend to provide a forum for leading scientists from all over the world to discuss the latest advances in the basic and applied research in the field of Information Technology and Nanotechnology, attract young people to advanced scientific research, and share the latest trends in training and research programs for future ITNT specialists. The Conference is held with the financial support of the Russian Foundation for Basic Research.

Organizers

Samara National Research University

Image Processing Systems Institute of RAS - branch of FSRC "Crystallography and Photonics" RAS

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Journal Information and Space

Journal Photonics

Conference Venue

The ITNT-2018 is held in the 1st building of the Samara National Research University.

Adress: 151, Molodogvardeyskaya st., Samara, Russia

Conference topics

Section 1 - Computer Optics and Nanophotonics
- Diffraction Optics
- Planar Optical Structures
- Optical Imaging Systems
- Hyperspectral Imaging Systems
- Nanophotonics
- Fiber Optics

Section 2 - Image Processing and Earth Remote Sensing
- Digital Image Processing
- Visual Recognition and Retrieval
- Motion Analysis
- Scene Reconstruction
- Remote Sensing Image Processing and Analysis
- Multimedia Protection and Information Hiding
- Geoinformatics

Section 3 - Mathematical Modeling of Physico-Technical Processes and Systems
- Mathematical Modeling of Information Processes;
- Mathematical Modeling of Physical Processes and Phenomena;
- Mathematical Modeling of Technical Systems.

Section 4 - Data Science
- Data Mining
- Machine Learning
- Security, Cryptography
- High-Performance Computing

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Yakunenkova D.M.– Image Processing Systems Institute of RAS – Branch of the FSRC "Crystallography and Photonics" RAS, Samara, Russia.

Conference Schedule

№	Sessions	April 24	April 25	April 26	April 27
1	Registration	9:00-17:00 Hall, 2 floor	9:00-14:00 Hall, 2 floor	9:00-14:00 Hall, 2 floor	
2	Plenary Session	9:30-13:30 room 212-1	9:30-13:30 room 212-1		9:30-11:20 room 212-1
3	Section 1 "Computer Optics and Nanophotonics"	16:30-18:00 room 209-1	14:30-16:00 room 209-1	14:30-18:00 room 209-1	11:40-12:55 room 209-1
4	Section 2 "Image Processing and Earth Remote Sensing"	16:30-18:00 room 204-1	14:30-16:00 room 204-1	14:30-18:00 room 204-1	11:40-12:55 room 204-1
5	Section 3 "Mathematical Modeling of Physico-Technical Processes and Systems"	16:30-18:00 room 121-1	14:30-16:00 room 121-1	14:30-18:00 room 121-1	11:40-12:55 room 121-1
6	Section 4 "Data Science"	16:30-18:00 room 220-1	14:30-16:00 room 220-1	14:30-18:00 room 220-1	11:40-12:55 room 220-1
6	Poster Session 1&3		16:00-18:00 Hall, 2 floor		
7	Poster Session 2&4				13:00-15:00 Hall, 2 floor
8	Youth School			9:30-13:30 room 212-1	
9	Closing Ceremony. Best Paper Award.				15:00-16:00 room 212-1

Program of IV International Conference on Information Technology and Nanotechnology (ITNT-2018)

24 April (Tuesday)

9:00-17:00	**Registration** *Samara University, building 1, Hall, 2nd floor*
9:30	**Opening of the Conference** *room 212, building 1*
	***Plenary Session** (room 212, building 1)*
9:40	**Prof. Dieter Bimberg** **(Institute of Solid State Physics, Technical University Berlin, Germany)** *Modelling of sprays: recent results and future challenges*
10:25	**Prof. Saikh Safiul Islam** **(Jamia Millia Islamia, India)** *Reduced graphene oxide: An wonderful material for Sensor Applications*
11:10	**Dr. Sergey Archipov** **(Special Systems. Photonics, Russia)** *Technological and measuring equipment for fiber optics and integrated photonics*
11:40	**Coffee break**
12:00	**Prof. Michael Sobolewski** **(Polish Japanese Academy of IT, Poland)** *Emergent Multifidelity Service Systems*
12:45	**Dr. Elena Achimova** **(Institute of Applied Physics, Moldova)** *Polarization holography for direct surface grating patterning on chalcogenide nanomultilayers*
13:30	**Break**
16:00	**Coffee break**
16:30 - 18:00	**Oral Sessions**

Program of IV International Conference on Information Technology and Nanotechnology (ITNT-2018)

25 April (Wednesday)

9:00-14:00	**Registration** *Samara University, building 1, Hall, 2nd floor*
	Plenary Session *(room 212, building 1)*
9:30	**Sergey Sannikov** **(Netcracker Technology, Russia)** *The future of cloud computing*
10:10	**Prof. Sergey Sazhin** **(University of Brighton, United Kingdom)** *Modelling of sprays: recent results and future challenges*
10:55	**Dr. David Asatryan** **(Russian - Armenian University, Armenia)** *Gradient-Based Technique for Image Structural Analysis and Applications*
11:40	**Coffee break**
12:00	**Dr. Eckart Michaelsen** **(Fraunhofer IOSB (Research Institute for Optronics, Systems and Image Processing), Germany)** *Automation of Gestalt Perception on Remotely Sensed Data*
12:45	**Dr. Sergey Yankin** **(COMSOL LLC, Russia)** *Modern optical systems design using COMSOL Multiphysics®*
13:30	**Break**
14:30	**Oral Sessions**
16:00	**Coffee break**
16:00 - 18:00	**Poster Session 1&3**

Program of IV International Conference on Information Technology and Nanotechnology (ITNT-2018)

26 April (Thursday)

9:00-14:00	**Registration** *Samara University, building 1, Hall, 2nd floor*
	Youth School *(room 212, building 1)*
9:30	**Andrey Glaschenko** **(Haulmont, Russia)** *Developing a commercially successful open source product*
10:10	**Dr. Sergey Yankin** **(COMSOL LLC, Russia)** *Best practices of optical modelling in COMSOL Multiphysics®*
11:40	**Coffee break**
12:00	**Darya Korepova , Igor Lopatin** **(Intel, Russia)** *Autonomous Driving and Artificial Intelligence powered by Intel*
13:30	**Break**
14:30	**Oral Sessions**
16:00	**Coffee break**
16:30 - 18:00	**Oral Sessions**

Program of IV International Conference On Information Technology and Nanotechnology (ITNT-2018)

27 April (Friday)

	Plenary Session *(room 212, building 1)*
9:30	**Dr. Artem Nikonorov** **(Samara National Research University, Russia)** *Deep learning: typical application and unusual use cases*
9:50	**Prof. Arthur Ernst** **(Institut fur Theoretische Physik, Johannes Kepler Universitat, Austria)** *Quantum-mechanical design of complex real materials*
10:35	**Dr. Lijun Zhang** **(Zhejiang Sci-Tech University, China)** *Solitary wave solutions of the perturbed mKdV equation*
11:20	**Coffee break**
11:40	**Oral Sessions**
13:00	**Coffee break**
13:00	**Poster Session 2&4**
15:00 - 16:00	**Closing Ceremony. Best Paper Award**

Section 1 - Computer Optics and Nanophotonics

Co-Chairs Roman Skidanov and Elena Achimova
Section secretary: Sofiya Ganchevskaya

24 April (Tuesday)

16:30	**Veronika Blank, Roman Skidanov** *Hyperspectrometer based on a harmonic lens with diffraction grating*
16:45	**Elena Kozlova, Viktor Kotlyar and Dmitry Kozlov** *Analysis of dielectric circular cylinder light spot narrowing by whispering gallery modes and influence of material absorption*
17:00	**Safaa Hussein, Sergey Kharitonov and Vladimir Pavelyev** *Calculation of the band structure of a nonchiral semiconductor and metallic carbon nanotubes*
17:15	**Elena Kadomina, Evgeni Bezus and Leonid Doskolovich** *Low-scattering Bragg gratings for surface plasmon polaritons*
17:30	**Anna Skidanenko, Leon Avakyan, Maximilian Heinz and Lusegen Bugaev** *The method of structural study of aggregates of plasmonic gold nanoparticles by Uv/visible spectroscopy*
17:45	**Ekaterina Aldebeneva, Sergey Kharitonov, Vladimir Pavelyev, Nikolay Kazanskiy and Vadim Davydenko** *Simulation of the carbon nanotubes band structure on a supercomputer based with ab initio methods*

25 April (Wednesday)

14:30	**Artem Turov, Nikolay Balbekin, Maksim Kulya and Nikolay Petrov** *Method for increasing the view field of THz holograms*
14:45	**Vladimir Podlipnov, Roman Skidanov and Veronika Blank** *Experimental study and calibration of the imaging hyperspectrometer based on the Offner scheme*
15:00	**Mariya Shishova, Dmitriy Lushnikov, Alexander Zherdev and Nikita Stsepuro** *Diffraction gratings applied in interferometric linear displacement encoders*
15:15	**Andrey Rastorguev, Sergey Kharitonov and Nikolay Kazanskiy** *Modeling and estimation of permissible technological errors in the arrangement of optical elements for the hyperspectrometer according to the Offner's scheme*
15:30	**Fedor Sidorov, Mark Bruk, Eugene Zhikharev and Alexander Rogozhin** *Fabrication of microlens arrays and planar photonic crystals using thermal amplification of resist*
15:45	**Sergey Stafeev, Anton Nalimov, Maria Kotlyar, Liam O'Faolain and Victor Kotlyar** *Binary subwavelength gratings for polarization control*

26 April (Thursday)

14:30	**Sofiya Ganchevskaya and Roman Skidanov** *Modified method of direct laser writing radially symmetric structures.*
14:45	**Michael Kovalev, Paul Ruchka and Nikita Stsepuro** *Discrete representation of holograms of halftone objects*
15:00	**Peter Zavyalov, Elena Zhimuleva, Leonid Finogenov, Maxim Kravchenko, Mark Savchenko, Vladimir Karlin and Alexey Beloborodov** *Using diffractive optical elements to inspection the geometric parameters of industrial products*
15:15	**Yulia Khristoforova, Ivan Bratchenko, Dmitry Artemyev, Oleg Myakinin, Alexandr Moryatov, Oleg Kaganov, Sergey Kozlov and Valery Zakharov** *Multivariative analysis of skin neoplasms AF and Raman spectroscopy features*
15:30	**Vladimir Burdin, Anton Bourdine, Oleg Morozov, Artem Kuznetzov and Anton Yudakov** *In-fiber device for modes division*
15:45	**Denis Kudryashov** Formation, development and features of the promotion of the English-language special issues of the journal "Computer Optics"
16:00	**Coffee break**
16:30	**Pavel Khanevich, Sergey Odinokov, Sergey Donchenko and Sergey Semishko** *Development and results of an experimental study to the angle guidance algorithm for optical reading device system for holographic memory*
16:45	**Igor Glukhov and Sergey Moiseev** *Optical generation in an amplifying photonic crystal with metal nanoparticles*
17:00	**George Krasin, Michael Kovalev, Sergey Odinokov, Artem Solomashenko and Yury Fedotov** *Optical wave fields measurement by digital holography methods*
17:15	**Dmitry Kuzmin, Alexander Betin and Sergey Odinokov** *Investigation of the exposure characteristics of Photo-Thermo- Refractive glasses to the recording of holographic and diffraction gratings was studied*
17:30	**Vladimir Sokolov** *For the Jubilee of Professor Nikolay L. Kazanskiy*
17:45	**Vladimir Sokolov** *The anniversary of 25 years of the of the Image processing systems institute of the Russian academy of sciences*

27 April (Friday)

11:40	**Vladimir Khomutov and Ruslan Shimansky** *Error correction of the angular coordinate of circular laser writing systems in the diffraction structures manufacture with arbitrary topology*
11:55	**Maxim Galkin, Pavel Nosov, Mikhail Kovalev and Nina Verenikina** *Calculation and analysis of the laser beam field distribution formed by a real optical system*
12:10	**Anastassiya Kireeva and Rudenok Igor** *Special wave solutions in the theory of waves of a mixed spectrum in planar gradient bianisotropic nanocrystalline structures*
12:25	**Baryshev Stepan, Alexey Kuznetsov and George Krasin** *Magnetic information sensing based on magneto optic plasmonic nanostructure*
12:40	**Vladislava Bulgakova, Vasily Gerasimov, Boris Goldenberg and Aleksei Lemzyakov** *Terahertz localized surface plasmons on subwave metal structures*

Section 2 - Image Processing and Earth Remote Sensing
Co-Chairs Vladislav Myasnikov and Valeriy Labunets
Section secretary: Victor Fedoseev

24 April (Tuesday)

16:30	**Valeriy Labunets, Victor Chasovskikh and Ekaterina Osthaimer** *Multiparameter Golay m-complementary sequences and transforms*
16:45	**Valeriy Labunets, Victor Chasovskikh and Ekaterina Osthaimer** *Multiparameter Golay 2-complementary sequences and transforms*
17:00	**Pavel Chochia** *Image Objects Detection with Local Topological Characteristics, Forming by Two–Dimensional Variations*
17:15	**Alexander Karkishchenko and Valeriy Mnukhin** *On eigenvectors of the discrete Fourier transform over finite Gaussian fields*
17:30	**Anna Smagina, Denis Shepelev, Egor Ershov and Anton Grigoryev** *Obstacle Detection Quality as Problem-Oriented Approach to Stereo Vision Algorithms Estimation in Road Situation Analysis*
17:45	**Konstantin Kiy** *An Image Understanding System Based on Geometrized Histograms Method: Finding the Sky in Road Scenes*

25 April (Wednesday)

14:30	**Mikhail Lange and Sergey Ganebnykh** *Group Decision Schemes for Classification with Reject in Ensemble of Image Sources*
14:45	**Evgeny Myasnikov** *Nonlinear dimensionality reduction of hyperspectral images based on spectral angles and exploiting the spatial context*
15:00	**Sergey Rylov and Igor Pestunov** *Fast hierarchical clustering of multispectral images and its implementation on NVIDIA GPU*
15:15	**Andrey Gaidel** *Methods of polynomial feature matching for textual images*
15:30	**Michael Khachay and Maxim Pasynkov** *Fingerprint image segmentation using neural networks*
15:45	**Dmitry Murashov and Fedor Murashov** *Method for Localizing Informative Regions in Images of Paintings*

26 April (Thursday)

14:30	**Andrey Kuznetsov and Vladislav Myasnikov** *New scheme for fast copy-move detection*
14:45	**Anna Denisova, Andrey Kuznetsov and Nikolay Glumov** *The technology of agricultural fields remote sensing images segmentation using morphological profiles*
15:00	**Ivan Konovalenko** *Error values analysis for inaccurate projective transformation of a quadrangle*
15:15	**Vladimir Mokshin, Ildar Saifudinov, Pavel Tutubalin and Leonid Sharnin** *Analysis of the model for highlighting notable structures in the solving problem of object detection in an image*
15:30	**Natalya Vorobiova and Andrei Chernov** *Comparing Bayesian classifier and a method based on algorithm for calculating estimates for crop identification by time-series Terra/MODIS 250 m*
15:45	**Mukesh Boori, Rustam Paringer, Komal Choudhary, Alexander Kupriyanov and Rukmini Banda** *Comparison in hyperspectral and multi-spectral remote sensing data for land cover classification in Samara, Russia*
16:00	**Coffee break**
16:30	**Ekaterina Serkova, Ivan Yakimchuk and Ilia Safonov** *Image-based method for porosity analysis of proppant particles*
16:45	**Pavel Pahomov, Alexander Borusyak, Dmitry Vasin and Vadim Turlapov** *Context method of lossless compression of RGB- and multispectral images*
17:00	**Pavel Pahomov, Alexander Borusyak and Vadim Turlapov** *Investigation of noisy channels of the hyperspectral image by the method of empirical modes with the purpose of its compression*
17:15	**Nikita Andriyanov and Konstantin Vasiliev** *Use autoregressions with multiple roots of the characteristic equations to image representation and filtering*
17:30	**Konstantin Vasiliev, Vitaly Dementiev and Nikita Andriyanov** *Analysis of the efficiency of satellite image sequences filtering*
17:45	**Fedor Kornilov, Denis Perevalov, Victor Kostousov and Andrei Popel** *Digital surface model generation from satellite stereo imagery*

27 April (Friday)

11:40	**Alexander Tashlinskii and Galina Safina** *Optimization of recurrent algorithms for parameters estimation of image interframe geometrical deformations by the convergence rate of parameter estimates*
11:55	**Anatolii Leukhin** *Detection of moving targets in SAR*
12:10	**Artyom Makovetskii, Sergei Voronin and Vitaly Kober** *A fast total variation regularization algorithm for 2D piecewise constant radially symmetric functions*
12:25	**Rukmini Banda and Mukesh Boori** *Hyperspectral imaging in remote sensing satellites modeling of hyperspectral imaging system and compensation of data for atmospheric effects*
12:40	**Radik Magdeev and Aleksandr Tashlinskiy** *Objects identification accuracy for binary images*

Section 3 - Mathematical Modeling of Physico-Technical Processes and Systems

Co-Chairs Sergei Sazhin and Vladimir Sobolev
Section secretary: Aleksei Archibasov

24 April (Tuesday)

16:30	**Oleg Strashko, Ilja Kuznecov, Victor Dorofeev, Dmitriy Gocev** *The mathematical model of characteristics of the convective unstable atmosphere taking into account microphysical processes in clouds*
16:45	**Katerina Makoviy, Dmitriy Proskurin, Yuliya Khitskova, Yaroslav Metelkin** *A comparison of linear programming and the genetic algorithm approaches to the problem of optimizing the server hardware resources for hosting virtual desktops*
17:00	**Mikhail Stepanov, Andrew Stepanov** *Mathematical modelling of intelligent self-organizing systems: implementation of the mechanism of action planning*
17:15	**Andrey Solovyov, Mikhail Semenov, Peter Meleshenko** *Stabilization of inverted pendula system in presence of elastic bonds*
17:30	**Svetlana Korabelshchikova, Boris Melnikov, Svetlana Pivneva, Larisa Zyablitseva** *Linear error correcting codes and their application in DNA analysis*
17:45	**Grigory Voronkov, Igor Kuznetsov, Pavel Filatov, Albert Sultanov, Anna Voronkova, Irina Vinogradova** *Signals and messages differential transformation research for increasing multichannel systems effeciency*

25 April (Wednesday)

14:30	**Dmitry Myasnikov, Konstantin Semenikhin** *Control of a queuing system with hidden Markov state*
14:45	**Mikhail Stepanov, Andrew Stepanov, Almira Salikhova** *The means of the GAMMA-3 system for the synthesis and mathematical modelling of the UAV trajectory control systems in the Earth remote sensing problems*
15:00	**Leniza Enikeeva, Irek Gubaydullin and Sergey Khursan** *Numerical modeling of intramolecular transformations of orto-substituted aromatic nitrozoxides*
15:15	**Irina Timina, Eugene Egov, Anton Romanov** *Application of the anomaly pattern in forecasting time series of project activity metrics*
15:30	**Alexander Kuznetsov** *Probabilistic properties of quasi-optimal trajectories of an agent moving over a lattice*
15:45	**Garnik Karapetyan, Heghine Petrosyan** *About the solvability of regular hypoelliptic equations in R^n*

26 April (Thursday)

14:30	**Zhe Dong, Yuriy Zabolotnov, Changqing Wang** *Mathematical modeling and analysis of motion of low-orbital space tether system*
14:45	**Konstantin Khramov, Vladimir Romashov** *Mathematical modeling of operational modes of high-speed DACs*
15:00	**Innokentiy Semushin, Julia Tsyganova** *Off-the-beaten-path Solutions for Decomposition-based Zero-forcing Precoding in xDSL Multi-user Downlinks*
15:15	**Kamila Koledina, Sergey Koledin, Irek Gubaydullin** *Interrelation between single-cycled catalytic reaction objective functions optimization and multi-cycled production on a basis of a kinetic model*
15:30	**Alexey Magazev, Valeria Tsyrulnik** *Optimizing the selection of information security remedies in terms of one Markov security model*
15:45	**Yuryi Kropotov, Aleksander Proskuryakov, Aleksey Belov** *Wavelet processing of time series to improve the accuracy of information representation*
16:00	**Coffee break**
16:30	**Mikhail Tsaryov, Dmitrii Kraus** *Reduction of the computational complexity of pseudogradient estimation of image parameters algorithms for a priori optimization of the local samples volume*
16:45	**Vladimir Nozhkin, Mikhail Semenov, Igor Ulshin** *A stochastic model of the moisture motion in the atmosphere*
17:00	**Mikhail Matveev, Alexey Kopytin, Ekaterina Sirota** *Combined method for identifying the parameters of a distributed dynamic model*
17:15	**Vitaly Chernik** *Mathematical methods for holographic mask with layered structure synthesis*
17:30	**Peter Meleshenko, Olga Reshetova, Akim Tolkachev** *Sine-Gordon system with hysteretic nonlinearity*
17:45	**Joseph Knapik, Roman Gallyamov, Valeriy Ovchinnikov, Kseniya Volkova, Evgeniy Avdeev** *F1 Car - Front Wing CFD Analysis and Optimization*

11:40	**Ilfat Bainazarov, Ilnur Akhmetov, Yuliya Lavrentieva** *Mathematical model of process of production of phenol and acetone from cumene hydroperoxide*
11:55	**Vjacheslav Zakharov, Sergei Shalagin, Bulat Eminov** *Representation of Markovs functions on the minimal polynomials over a finite field*
12:10	**Victor Zhidchenko, Alexander Kovartsev, Heikki Handroos, Iuliia Malysheva** *Digital twin for faster than real-time simulation of mobile crane operations*
12:25	**Yuriy Kropotov, Nataliya Holkina, Aleksander Proskuryakov, Dmitriy Beilekchi** *Identification and estimation parameters of acoustic signals in telecommunication systems of audio exchange*
12:40	**Alexey Golubkov, Andrey Tsyganov, Julia Tsyganova** *Adaptive estimation of an object motion parameters based on the hybrid stochastic model*

Section 4 - Data Science
Co-Chairs Vladimir Fursov and Michael Sobolewski
Section secretary: Yegor Goshin

24 April (Tuesday)

16:30	**Igor Bychkov, Alexander Feoktistov, Ivan Sidorov, Alexei Edelev, Sergey Gorsky and Roman Kostromin** *Agent learning based on the parameter adjustment of their algorithms for distributed computing management*
16:45	**Alexandr Zhukov, Olga Krasotkina, Valentina Sulimova, Vadim Mottl and Anatoly Markov** *Featureless rail flaw recognition using ultrasonic testing*
17:00	**Dmitry Samoilov, Valentina Semenova and Sergei Smirnov** *Fractality of the object's properties existence constraints in machine learning*
17:15	**Maria Sapozhnikova, Maya Gayanova, Alexey Vulfin, Andrey Nikonov and Artem Chuykov** *Processing of big data in the transaction monitoring systems*
17:30	**Labunets Valeriy and Osthaimer Ekaterina** *Cryptosystems based on RS and BCH codes over finite noncommutative algebras*
17:45	**Oleg Shipitko and Anton Grigoryev** *Gaussian filtering for FPGA based image processing with High-Level Synthesis tools*

25 April (Wednesday)

14:30	**Ekaterina Orlova** *Fuzzy model for support investment decisions under risk*
14:45	**Olga Sushkova, Alexei Morozov and Alexandra Gabova** *An investigation of specificity of features of early stages of Parkinson's disease obtained using the method of cortex electrical activity analysis based on wave trains*
15:00	**Irina Khaimovich and Vladimir Ramzaev** *Development of data model for production active elements functioning on the basis of information interaction*
15:15	**Yury Obukhov and Renata Tolmacheva** *An Innovative Approach for EEG Phase Coherency Evaluation During Cognitive Tests*
15:30	**Ilnur Akhmetov and Irek Gubaydullin** *Information-analytical system for modeling chemical-technological processes using parallel computations*
15:45	**Vladimir Mokshin, Ildar Saifudinov, Leonid Sharnin, Mikhail Trusfus and Pavel Tutubalin** *A parallel genetic algorithm of feature selection for analysis of complex systems*

26 April (Thursday)

14:30	**Oksana Mandrikova, Nadezhda Fetisova and Yury Polozov** *Method for the analysis of ionospheric parameter and the detection of ionospheric anomalies in the tasks of online data processing*
14:45	**Aleksey Filippov, Vadim Moshkin, Anton Zarubin and Albina Koval** *The applying of syntagmatic patterns for the development of question-answer systems*
15:00	**Marat Enikeev, Marina Maleeva and Leniza Enikeeva** *Machine learning in the problem of recognition of pitting corrosion on aluminum surfaces*
15:15	**Boris Melnikov, Elena Melnikova, Svetlana Pivneva, Nadezhda Churikova, Vladislav Dudnikov and Mikhail Prus** *Multi-heuristic and game approaches in search problems of the graph theory*
15:30	**Konstantin Barkalov and Victor Gergel** *High performance computing for global optimization problems*
15:45	**Igor Isaev, Sergey Burikov, Tatiana Dolenko, Kirill Laptinskiy and Sergey Dolenko** *Improving the resilience of neural network solution of inverse problems in Raman spectroscopy of multi-component solutions of inorganic compounds to the distortions caused by frequency shift of the spectral channels*
16:00	**Coffee break**
16:30	**Svetlana Korabelchshikova, Igor Vasilishin, Dzamal Sultanov and Michail Pugin** *Using component-wise functions in cryptographical transformation algorithm from Russian National Standard GOST R 34.12-2015*
16:45	**Vladimir Rozaliev, Yulia Orlova, Nikita Nikitin and Aleksey Alekseev** *Sound generation based on image color spectrum with using the recurrent neural network*
17:00	**Olga Vasilchuk, Aleksandr Nechitaylo, Dmitrii Savenkov and Kseniia Vasilchuk** *The Creation of Scalable Tools for Solving Big Data Analysis Problems Based on the MongoDB Database*
17:15	**Ilona Kulikovskikh and Sergej Prokhorov** *A method of implicit regularization based on the phenomena of retrieval-induced forgetting (RIF)*
17:30	**Alexander Shirokanev, Nataly Ilyasova and Rustam Paringer** *A smart feature selection technique for segmentation of fundus images*
17:45	**Denis Zherdev and Vladimir Procudin** *HPC implementation of radar images modelling method using CUDA*

27 April (Friday)

11:40	**Mikhail Osipov and Vladislav Andreev** *The problem of monitoring of movement in the task of navigation in enclosed spaces*
11:55	**Mikhail Geras'kin** *Analysis of the influence of citizens' altruism on the effectiveness of the socially optimal actions stimulation system*
12:10	**Stanislav Kalyulin and Vladimir Modorskii** *Computational and experimental modeling of icing processes by means of PNRPU high-performance computational complex*
12:25	**Ruslan Isaev and Aleksandr Podvesovskii** *Application of time series analysis for structural and parametric identification of fuzzy cognitive models*
12:40	**Aleksandr Anatolievich Kolpakov and Yuriy Kropotov** *Development of a model for predicting the performance of a heterogeneous computer system in telecommunications*

Poster Session 1

25 April (Wednesday)
16:00-18:00, Hall, 2nd floor

<u>Section 1 - Computer Optics and Nanophotonics</u>

S1.1 **Vladimir Abramov, Dmitriy Klyuev, Dmitry Mishin and Oleg Osipov**
The optical waves propagation in planar periodic inhomogeneous chiral structures

S1.2 **Eugene Bashkirov and Maria Guslyannikova**
Entanglement between artifial atoms and photons of lossless cavities

S1.3 **Eugene Bashkirov, Anatoly Vorobiev and Alexander Gorokhov**
Calculation of the information transfer from one node to another one in the theory of quantum networks on the basis of generalized Tavis-Cummings models

S1.4 **Veronika Blank, Roman Skidanov and Vladimir Podlipnov**
A dual-range diffraction grating for imaging hyperspectrometr based on the Offner scheme

S1.5 **Lidiia Bolbasova**
Calculations of efficiency of adaptive optical system for atmospheric turbulence compensation

S1.6 **Anton Bourdine, Dmitry Artemyev, Ivan Bratchenko, Alexander Evtushenko, Vadim Kazakov, Ivan Karptsov, Michaile Kartashov, Anastasia Lykina, Julia Litvinova and Valery Zakharov**
Development of alternative fiber optic Raman probes based on optical fibers with written precision micro-structure defects

S1.7 **Ali Butt and Sergey Degtyarev**
Asymmetric double high mesa slot waveguide to enhance the light confinement in a 90° sharp bend

S1.8 **Sergey Degtyarev and Svetlana Khonina**
Forming and focusing of fractional-order cylindrical beams with subwavelength gratings

S1.9 **Alexey Dzyuba**
Wavefront recognition by the image of intensity in the focal plane based on the convolutional neural networks

S1.10 **Sergey Fomchenkov**
Modeling and manufacture of an interference filter with a defective layer for narrow spectral selection

S1.11 **Maxim Gaponov, Vitold Pozhar, Aleksandr Machikhin and Sergey Shirokov**
Preliminary testing of acousto-optical hyperspectrometer for UAV

S1.12 **Anna Glazkova and Maria Zablovskaya**
Astigmatic transformation of the Bessel beam and the Gauss–Laguerre beam

S1.13 **Nikita Golovastikov, Dmitry Bykov, Evgeni Bezus and Leonid Doskolovich**
Three-layer diffraction structure for spatiotemporal differentiation of optical signals

S1.14 **Arseny Golovin and Anatoly Demin**
Optical-digital complex for remote mine detection and mapping of minefields

S1.15 **Alina Gornostay**
Mathematical models of image formation from the eye with diffractive intraocular lens

S1.16 **Alexander Gorokhov and Andrey Kryukov**
Symmetry and quantum control of Rydberg atoms dynamics

S1.17 **Vladimir Saleev and Alexandra Shipilova**
Modeling of photoelastic properties of Lithium Niobate crystal in the density functional theory

S1.18 **Roman Sergeev and Michael Osipov**
Processing of images of speckle interferograms for determining the temperature coefficient of linear expansion

S1.19 **Artem Kapustin**
DOEs for white light based on Bragg gratings with defect layer

S1.20 **Sergei Karpeev, Martin Rojas and Vyacheslav Paranin**
Tunable generator of radially and azimuthally polarized Bessel beams based on the interference polarizer

S1.21 **Vladimir Kazakevich, Pavel Kazakevich, Pavel Yaresko and Daria Kamynina**
The synthesis of metallic nanoparticles by laser ablation in heavy water method

S1.22 **Sergey Kharitonov, Svetlana Khonina, Nikolay Kazanskiy and Yury Strelkov**
Simulation of radiation propagation in curvilinear optical lightguides using the method of variables separation

S1.23 **Pavel Khorin**
Modeling of photoelastic properties of Lithium Niobate crystal in the density functional theory

S1.24 **Mikhail Kirilenko and Sergey Volotovsky**
Calculation of the axially symmetric eigenfunctions of the finite propagation operator in the near-field diffraction

S1.25 **Victor Kotlyar and Anton Nalimov**
Engineering a sector-variant high-numerical-aperture micrometalens

S1.26 **Victor Kotlyar, Alexey Kovalev and Alexey Porfirev**
Controlling the orbital angular momentum of Gaussian vortices by shifting the point of phase singularity

S1.27 **Svetlana Kotova, Aleksandra Mayorova, Evgeny Pozhidaev and Sergey Samagin**
Simulation of spatial phase light modulators based on the ferroelectric liquid-crystals

S1.28 **Elena Kozlova, Victor Kotlyar and Alexandra Savelyeva**
Laser light focusing by microcyllinder with two metallic shells

S1.29 **Stanislav Krasnov and Sergey Kharitonov**
Research of the passage of mode pulses in a waveguide with a one-dimensional diffractiongrade

S1.30 **Anton Krents and Nonna Molevich**
Transverse patterns in broad-area lasers with anisotropy

S1.31 **Natalya Latukhina, Daria Lizunkova, Vyacheslav Paranin and Galina Rogozhina**
The influence of technological parameters on the optical properties of photosensitive structures based on porous silicon

S1.32 **Michael Limov, Michael Osipov, Natalia Znamenshchikova, Dmitry Gnutov and Alexey Linkov**
Processing the output signal from the speckle interferometer on a single speckle under the impact of noiseex

S1.33 **Anastasia Lykina, Dmitry Artemyev, Vladimir Kukushki, Ivan Bratchenko, Nikolay Aleksandrov and Valery Zakharov**
Raman spectroscopy for kidney tissue and its neoplasms research

S1.34 **Andrei Mezhenin, Yuliya Kurenkova and Anastasiya Rymzhina**
Diagnostic stand for quality control of diffractive optical element manufacturing

S1.35 **Natalya Moiseeva and Anton Moiseev**
Matrix WKB solution for electromagnetic waves in an inhomogeneous gyrotropic medium

S1.36 **Evgeny Monin and Sergey Volotovsky**
Modelling of distribution of circular beams of airy in parabolic fiber

S1.37 **Serguei Murzin, Maxim Blokhin and Sergei Afanasiev**
Pulse-periodic laser action to create an ordered heterogeneous structure based on copper and zinc oxides

S1.38 **Serguei Murzin, Gerhard Liedl, Robert Pospichal and Alexey Melnikov**
Study of the action of a femtosecond laser beam on samples of a Cu-Zn alloy

S1.39 **Liudmila Naiden, Ivan Tsyganov, Sergey Odinokov and Vasily Kolyuchkin**
Investigation of the method of forming multicolored images reconstructed from protective holograms

S1.40 **Vladimir Pavelyev, Andrei Mezhenin, Nishant Tripathi, Yuliya Kurenkova and Prabhash Mishra**
Sensitive element of CNT-based IR-sensor

S1.41 **Vladimir Podlipnov and Vsevolod Kolpakov**
Investigation of the annealing of CdTe films in an off-electrode plasma for photovoltaics

S1.42 **Dmitry Savelyev**
Transformation of a Gaussian vector beam by an axicon with a subwave period

S1.43 **Vladimir Saleev, Aleksandra Shipilova and Arthur Ernst**
Ab-initio modeling of structure stability and optical properties of perovskite CsPbI(3-x)Clx depending on chlorine doping level

S1.44 **Ekaterina Seledkina, Anatoly Demin and Anton Ekimenko**
Development of a hologram optical element for a lidar

S1.45 **Lyudmila Shamina, Ivan Bratchenko, Dmitry Artemyev, Yuliya Khristoforova, Vladimir Grishanov, Dmitry Kornilin and Valeriy Zakharov**
Analysis of correlation between Raman and autofluorescence human skin response in visible and NIR region

S1.46 **Artur Shilov, Sergei Miheev, Alexandr Sotsky, Maxim Nazarov, Luidmila Sotskaya, Kazbek Bzheumikhov and Zaur Margushev**
Photonic crystal fibers formed by air channels with a corrugated boundary

S1.47 **Yaroslav Skidanov and Svetlana Khonina**
Research of the possibilities of increasing the resolution of optical systems in the presence of aberrations based on amplitude apodization

S1.48 **Larisa Stepanova and Vadim Dolgikh**
Interference-optical methods (digital photoelasticity method) for multi-parameter crack tip description: experimental determination of coefficients of the Williams asymptotic expansion

S1.49 **Yury Strelkov and Ali Butt**
Modeling of a Fabry-Perot filter based on TiO2 and air gap by using Eigenvectors and Eigenvalues approach

S1.50 **Mohammad Talib and Prabhash Mishra**
A high performance optical detector using TiS3 nanoribbons

S1.51 **Andrey Ustinov**
Analitycal features of the extended Airy beams

S1.52 **Vadim Vasilev**
Calculation and modeling of harmonic lenses with variable height microrelief

S1.53 **Vadim Vasilev and Vladimir Podlipnov**
Investigation of the possibility of using birefringent crystals for the formation of inhomogeneosly polarized laser beams

S1.54 **Tatiana Yakovleva**
Nonlinear filtration of rician data as a tool for the phase measurements: the aspects of theory

S1.55 **Elizaveta Yarunova, Anton Krents and Nonna Molevich**
Impact of time-delayed feedback on optical field dynamics in cavity with nonlinear metamaterial

Section 3 - Mathematical Modeling of Physico-Technical Processes and Systems

S1.56 **Stanislav Abulhanov, Nikolay Kazanskiy, Dmitriy Goryainov, Yury Strelkov**
The effect of roughness and deformation of the reflecting surfaces of the LED spotlight on its lighting performance

S1.57 **Ayna Agataeva**
Analysis of the threshold phenomena in a dynamic model of a fuel spray ignition

S1.58 **Igor Anikin, Khaled Alnajjar**
Increasing the quality of pseudorandom number generator based on fuzzy logic

S1.59 **Igor Anikin, Khaled Alnajjar**
Studying the relationship between linguistic variables and the degrees of primitive polynomials used in pseudo-random number generator based on fuzzy logic

S1.60 **Gennady Anshakov, Vadim Salmin, Konstantin Peresypkin, Alexey Chetverikov, Ivan Tkachenko and Tuntun Zhang**
Optimization of the diffraction lenses design parameters for the prospective project of the observation spacecraft

S1.61 **Gennady Anshakov, Vadim Salmin and Vladimir Volotsuev**
Mathematical models for maintaining a low orbit of a spacecraft through the electrically reactive engines with allowance for power limitations

S1.62 **Aleksei Archibasov, Andrei Korobeinikov**
Models of viral dynamics with random mutation

S1.63 **Valery Bagmanov, Elizaveta Grakhova, Guzel Abdrakhmanova**
Ultra wideband vortex antenna array design for high capacity radio links

S1.64 **Mikhail Balabaev**
Flow curvature method applied to the burning problem

S1.65 **Eugene Bashkirov, Anatoly Vorobiev**
Entanglement between two dipole-coupled qubits interacting with a detuned thermal field

S1.66 **Eugene Bashkirov**
Entanglement between two Rydber atoms successively interacting with a detuned cavity field

S1.67 **Oksana Belova, Larisa Stepanova**
Estimation of crack propagation direction angle under Mixed-mode loading (Mode I and Mode II): generalized fracture mechanics criteria and atomistic modeling (molecular dynamics method)

S1.68 **Valery Berdnikov, Jakob Mostovoi**
Analytical and numerical modeling of clusters of objects in a random environment

S1.69 **Valery Berdnikov, Jakob Mostovoi**
Statistical modeling of a large network of nanosatellites

S1.70 **Alexander Biryukov, Yana Degtyareva, Mark Shleenkov**
The modeling of multiphoton ionization by path integral approach

S1.71 **Alexander Biryukov, Mark Shleenkov**
Entangled state lifetime of qubits in external fields calculation by path integral approach

S1.72 **Igor Blatov, Elena Kitaeva**
Convergence of algorithms for adapting computational grids for elliptic singularly perturbed boundary value problems

S1.73 **Igor Blatov, Boris Lihtsinder**
On the estimation of queue lengths when processing stationary series in queueing systems with arbitrary correlation

S1.74 **Yuliya Bobreneva, Ainur Mazitov, Irek Gubaydullin**
Mathematical modeling of fluid flow processes in the fracture-porous reservoir

S1.75 **Valery Bogdanovich, Mikhail Giorbelidze**
Development of the disperse powder material motion mathematical model in the boundary layer of plasma flow during plasma spraying

S1.76 **Valery Bogdanovich, Mikhail Giorbelidze**
Development of the powder melting mathematical model in the technology of selective laser melting

S1.77 **Michael Bolotov, Vadim Pechenin, Nikolay Ruzanov**
Prediction of the geometric parameters of products assemblies using neural network models

S1.78 **Nikolay Bystrov, Irina Zhukova**
Estimation of signal-to-clutter-plus-noise ratio in presence of clutter clipping

S1.79 **Alexander Chekashov, Olga Starinova, Bakhyt Alipova, Irina Gorbunova**
Modeling of solar sail surface oscillations during interplanetary flight

S1.80 **Andrey Danilov, Nikita Andriyanov, Pavel Azanov**
Ensuring the effectiveness of the taxi order service by mathematical modeling of its work

S1.81 **Elena Demyanenko, Alexandr Epifanov, Igor Popov**
Simulation of plastic forming process by variation of geometric parameters

S1.82 **Pavel Dyshlovenko, Anastasia Batanova**
Energy and elastic constants of a charge-stabilized colloidal crystal with body-centered cubic lattice

S1.83 **Alexandr Epifanov, Elena Demyanenko, Igor Popov**
Simulation of the deformation process taking into account the elastic comeback effect

S1.84 **Julia Ermoshkina**
The investigation of stability in a model of the spread of viruses

S1.85 **Maksim Fain, Olga Starinova**
Mathematical modeling of the space tug transfers between the Lagrange points of the Earth-Moon system

S1.86 **Azamat Faskhutdinov, Ilnur Akhmetov, Alena Musina**
Increase resource efficiency of the catalytic isomerization process by mathematical modeling

S1.87 Natalia Firstova

Effect of random perturbations on critical phenomena in a dynamic model of an electrochemical reaction

S1.88 Julia Gerasimova

Parallel algorithm of spline-based wavelet transform

S1.89 Dmitriy Gocev, Gennadii Zibrov, Vadim Zakusilov, Ilja Kuznetcov

The mathematical model of stability of lining a vertical mine shaft to ensure environmental safety of production

S1.90 Sofia Gogoleva

Preconditioning based on LU-decomposition in iterative methods for solving systems of linear algebraic equations with sparse matrices

S1.91 Oleg Golovnin, Tatyana Mikheeva

Attribute-driven Network-centric Urban Transport Process Control System Modeling

S1.92 Yury Gorelov, Lyubov Kurganskaya, Vitaly Yurin

Optimal scanning for curvilinear routes and geometrically complex area of sensing using optoelectronic observation equipment

S1.93 Yury Gorelov

To the problem of optimum allocation of a physical control resource for a separate dynamic systems

S1.94 Boris Gorlach, Alena Mukhametzyanova

Mathematical Modeling of Metal Forming Processes

S1.95 Igor Grigoryev, Svetlana Mustafina

Simulation of the polymerization process of butadiene per neodymium catalytic system

S1.96 Dmitriy Ivanov, Ilya Sandler, Natalia Chertykovtseva

Identification of dynamic errors-in-variables bilinear systems of fractional order

S1.97 Igor Kartashevskiy

The model of the kernel of the Lindley integral equation based on selective functions

S1.98 Roman Khabibullin, Olga Starinova

Mathematical modelling of the solar sail spacecraft three-dimensional motion in heliocentric coordinate system

S1.99 Maxim Khomenko, Fikret Mirzade

Numerical investigation of capillary and thermocapillary phenomena at laser cladding

S1.100 Galina Klimashova, Alexandr Kovarcev

Rules for the formation of initial approximations of the conformations of the atoms of Morse clusters on the basis of a geometrically grounded method

S1.101 Joseph Knapik, Roman Gallyamov, Valeriy Ovchinnikov, Kseniya Volkova, Evgeniy Avdeev

LMP1 Hybrid car - analysis and optimization

S1.102 Alexander Kobrin, Vladimir Sobolev

Decomposition of non-holonomic mechanics models

S1.103 Sergey Koledin, Kamila Koledina, Irek Gubaydullin
Heterogeneous catalytic reactions conditions optimization

S1.104 Darya Kuznetsova
Reduction of virus evolution model

S1.105 Olga Kuznetsova, Natalia Dodonova
Theoretical and game model for the limited resource distribution in the public procurement market

S1.106 Vladislav Lyubimov
Modeling of the Induced Resonant Torques during the Motion of an Asymmetric Spacecraft in the Atmosphere

S1.107 Natalja Moiseeva, Anton Moiseev, Igor Rudenok
The WKB 4x4 method for an inhomogeneous chiral layer

S1.108 Olga Mossoulina
Modeling of the random texture surface based on self-similar structures

S1.109 Oleg Naumov
Modeling the process of deployment of the space tether system using parallel algorithms

S1.110 Vladimir Nesterov
The concept of vector multicomponent physical quantities and its application

S1.111 Oleg Nikitin, Petr Polushin
The oppression of intersymbol interference by logical predistortion of transmitted signals

S1.112 Elizaveta Nikolaeva, Olga Starinova
Simulation of a system protect Earth from asteroid hazard by kinetic interceptor

S1.113 Sergey Novikov, Mariya Fedina
Equiangular tight frames in sparse signal processing

S1.114 Liana Nurislamova
Numerical simulation of gas flow dynamics of propane pyrolysis

S1.115 Oleg Pavlov
Dynamic models of production activity planning in projects for the development of new products

S1.116 Vadim Pechenin, Nikolay Rusanov, Michail Bolotov
Model and software module for predicting uncertainties in coordinate measurements in the NX OPEN API

S1.117 Mikhail Piganov, Vladimir Maklashov
Simulation of ultrawideband embedded multilayer RF filters embedded in a printed circuit board

S1.118 Mikhail Piganov, Dmitriy Novomeyskiy
Process modeling of adjustment of thick film resistors by method of flare discharge

S1.119 Ruslan Pikalov, Vladimir Aslanov
Rendezvous of two spacecraft in LEO with use tether

S1.120 **Igor Rastorguev, Dmitriy Surkov**

Modeling of atmospheric convection using remote sensing data

S1.121 **Darya Rogach**

Stability of measurable vectors for phaseless reconstruction

S1.122 **Nikolay Ruzanov, Michael Bolotov, Vadim Pechenin**

Model for estimating the error in measuring geometric parameters of complex surfaces

S1.123 **Sergey Safronov, Ivan Tkachenko, Sergey Volgin**

Solution of the problem of remote sensing small spacecraft onboard equipment integration through mathematical and simulation modeling of its operation

S1.124 **Kristina Saigak**

Modeling and analysis of electrodynamic rope system motion in near-earth orbit

S1.125 **Vadim Salmin, Ksenia Petrukhina and Alexander Kvetkin**

Modeling of control processes of spacecraft orbits with low-thrust engines

S1.126 **Vitalii Semin, Andrei Pavelev**

Simulation of non-Markovian dynamics of dipole-dipole interacting atoms

S1.127 **Elena Shchepakina, Vladimir Sobolev**

Cheap control for quadrupter

S1.128 **Elena Shchepakina**

Invariant surface with the change of stability in a neuron activity model

S1.129 **Ekaterina Shchetinina**

Stability loss delay in a system with self-excited oscillations

S1.130 **Darya Sigaeva, Ravil Uzyanbaev, Ilnur Akhmetov**

Mathematical modeling of highly stable oils with high viscosity index

S1.131 **Ilia Stepanenko, Vadim Pechenin, Nikolay Ruzanov, Alexander Khainovich**

Technique of increasing the accuracy of GTE parts manufactured by selective laser melting

S1.132 **Larisa Stepanova**

Asymptotic methods and their applications in nonlinear fracture mechanics

S1.133 **Elena Tropkina**

Effective order reduction method based on parametrization of slow invariant manifolds

S1.134 **Aleksandr Tsarev, Alexander Privalov**

Investigation of the effect of the mobility characteristics of DTN network nodes with the hybrid mobility model

S1.135 **Vera Turkova, Larisa Stepanova**

Finite element analysis of the biaxial cyclic tensile loading of the elasto-plastic plate with the central hole: asymptotic states

S1.136 **Pavel Tutubalin, Natalya Arutyunova, Elena Komissarova**

Model of analysis of sustainable management of information security of a distributed information system

S1.137 **Pavel Tutubalin, Vladimir Mokshin, Elena Komissarova, Natalya Arutyunova**

The approach to concealing data in a distributed system

S1.138 **Andrey Tyugashev**

On use of Satisfiability modulo theories approach for evaluation of Real-Time spacecraft control logic

S1.139 **Inessa Useinova**

Stability of equilibria of cancer treatment by chemotherapy model

S1.140 **Natalya Voropaeva, Olga Vidilina**

The optimal control problem for magnetoelectric actuator

S1.141 **Mikhail Vovdenko, Salikh Gabitov, Kamila Koledina, Emil Ahmerov, Alexander Sannikov**

Mathematical modeling of isopropylbenzene oxidation reaction and oxidation reactor

S1.142 **Changqing Wang, Yuriy Zabolotnov**

Modeling and analysis of the process of forming a vertical tether group of nano-satellites

S1.143 **Valery Zakharov**

Mathematical modeling of Fiber optic electric field sensor with FBG-based electret

S1.144 **Valeriy Zasov, Evgeniy Nikonorov**

Stabilization of the solution of the inverse problem of separation of signals on the basis of parameters of the stability path of the solution

S1.145 **Vladimir Zelenskiy, Artyom Shchodro**

Simulation of oil-gaz separator operation

S1.146 **Ramil Zhabbarov**

Quasilinearization method for the solution to the problem of plate with central circular hole under creep regime

Poster Session 2

27 April (Friday)

13:00-15:00, Hall, 2nd floor

Section 2 - Image Processing and Earth Remote Sensing

S2.1 **Anton Agafonov and Vladislav Myasnikov**
Autonomous vehicles routing in time-dependent transportation networks

S2.2 **Anton Agafonov**
An algorithm for public transport departure time estimation on the basis of operation strategies

S2.3 **Nikita Andriyanov and Vitaly Dementiev**
Application of mixed models of random fields for the segmentation of satellite images

S2.4 **Sergej Belov**
Detection of changes of characteristics of the scattering Ability of superficial and subsurface structures of the earth in the short-wave range of radio waves.

S2.5 **Aleksandr Borodinov and Vladislav Myasnikov**
Target recognition on SAR images based on a convolutional neural network

S2.6 **Ruslan Brezhnev, Yuriy Maglinets, Ksenia Raevich and Gennady Tsibulskii**
Modelling of spatial objects of agricultural purpose with an inhomogeneous dynamically changing spatial structure

S2.7 **Komal Choudhary, Mukesh Boori and Alexander Kupriyanov**
Remote sensing investigation of inundation, elevation and land use assessment in Moscow state, Russia

S2.8 **Sergey Denisov and Mikhail Gashnikov**
Comparative study of hierarchical and differential methods of image compression

S2.9 **Anna Denisova, Andrey Kuznetsov and Nikolay Glumov**
The technology of agricultural fields remote sensing images segmentation using morphological profiles

S2.10 **Alexandra Dunaeva and Fedor Kornilov**
Building detection from satellite multispectral images using a digital surface model

S2.11 **Nadezhda Evdokimova and Vladislav Myasnikov**
Detecting forgery of image time series based on the anomalies detection

S2.12 **Anastasia Evstiforova and Anna Denisova**
The research of soil characteristics influence on the results of regression modeling of winter wheat yield using NDVI vegetation index

S2.13 **Victor Fedoseev**
Hyperspectral satellite image classification using small training data from its own territory

S2.14 **Mikhail Gashnikov and Aleksey Maksimov**
Parameterization of the nonlinear predictor invariant to four directions contours for digital image compression

S2.15 **Mikhail Gashnikov**
Interpolation based on NEDI for image compression based on HGI

S2.16 **Mikhail Gashnikov**
Use of ACF models for interpolation of images for compression on the basis of HGI

S2.17 **Elizaveta Goncharova and Andrey Gaidel**
Greedy algorithms of feature selection for multiclass image classification

S2.18 **Oleg Goriachkin and Alex Borisenkov**
Imaging in bistatic sar P and VHF bands with high spatial resolution

S2.19 **Vladimir Gridin, Maxim Truphanov and Vladimir Solodovnikov**
Hippocampus detection and calculation of its characteristics in magnetic resonance imaging of the brain

S2.20 **D.V. Karasev, Anatolii Leukhin, V.I. Bezrodny, A.A. Voronin, K.V. Andreev, A.N. Ivanov**
Polyaritzation SAR system

S2.21 **Ludmila Kavelenova, Evgeny Korchikov, Nataly Prokhorova, Anna Denisova, Darya Terentyeva and Victor Fedoseev**
Concerning the detection and ecological state evaluation of protective forest belts basing on complex ground survey and remote sensing data processing

S2.22 **Angelina Kharchevnikova and Andrey Savchenko**
Convolutional Neural Networks in age/gender video-based recognition

S2.23 **Yuri Kovalev, Kirill Kuptsov, Sergey Eremeev and Dmitriy Andrianov**
Algorithm for encoding nD spatial objects into GIS

S2.24 **Victor Krasheninnikov, Larisa Trubnikova, Olga Malenova, Anna Yashina, Marina Albutova and Olga Marinova**
Algorithm for detecting block-like cracks in facies of human biological fluids

S2.25 **Dmitrii Kraus, Roman Kovalenko and Alexander Tashlinskiy**
Prediction of probability of estimations improvement on iterations of pseudo-gradient estimation of image parameters

S2.26 **Igor Kudinov, Oleg Pavlov, Ivan Kholopov and Mikhail Khramov**
Real-time multispectral video panorama construction

S2.27 **Maria Kudrina and Vadim Mishenev**
Wave skeletonization algorithm of raster images

S2.28 **Yaroslav Kulkov and Sultan Sadykov**
Recognition of the imposed flat objects on dimensionless marks of their contours

S2.29 **Ekaterina Kurbatova**
Edge detection of objects on the satellite images

S2.30 **Anatolii Leukhin, A.A. Rozentsov, Vladimir Bezrodnyy, A.A. Voronin, D.Yu. Karasev, N.A. Kokovihina**
3D synthetic aperture radar image

S2.31 **Artem Lukoyanov, Dmitriy Nikolaev and Ivan Konovalenko**
Modification of YAPE keypoint detection algorithm for wide local contrast range images

S2.32 **Stella Lyasheva, Mikhail Medvedev, Mikhail Shleymovich and Vladimir Mokshin**
The analysis of image characteristics on the base of energy features of the wavelet transform

S2.33 **Artyom Makovetskii, Sergei Voronin, Vitaly Kober, Aleksei Voronin and Dmitrii Tihonkih**
Approximation of the exact solution of point clouds registration based on point-to-plane approach for orthogonal transformations

S2.34 **Kseniya Medvedeva**
Comparison of the low-frequency Butterworth filter with radial-symmetric SE-filter

S2.35 **Oleg Melsitov, Violetta Sherendak, Semyon Konovalov and Oleg Myakinin**
Automatic Malignant Melanoma recognition using a Dermatoscopy Imaging Tool

S2.36 **Alexei Morozov and Olga Sushkova**
A Virtual Machine for Low-Level Video Processing in Actor Prolog

S2.37 **Alexei Morozov and Olga Sushkova**
On the Development of Methods and Algorithms Based on Object-Oriented Logic Programming for Video Monitoring of Laboratory Rats

S2.38 **Sergey Mosin, Evgeny Dremov and Sergey Miroshnichenko**
Aircrafts' Localization and Classification on Remote Sensing Data with Convolution Neural Networks

S2.39 **Alexander Naumov, Alexander Machikhin and Alexey Gorevoy**
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