



Peter Trefilov, Mark Mamchenko, Maria Romanova and Igor Ischuk

### Paper Title:

Improving Methods of Objects Detection Using Infrared Sensors Aboard the UAV

have participated in the

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Vladislav Shishlakov, Elizaveta Vataeva, Nataliia Reshetnikova, Dmitriy Shishlakov and Oksana Solenaya

### Paper Title:

Synthesis of Nonlinear Impulse Systems

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020



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Sergej Solyonyj, Oksana Solenaya, Aleksandr Rysin, Vladimir Kuzmenko and Evgeny Kvas

### Paper Title:

Robot for Inspection and Maintenance of Overhead Power Lines

have participated in the

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Valeriia Izhboldina, Igor Lebedev and Aleksandra Shabanova

### Paper Title:

Approach to UAV Swarm Control and Collision-Free Reconfiguration

have participated in the

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Konstantin Krestovnikov, Ekaterina Cherskikh and Eldar Zimuldinov

### Paper Title:

Combined Capacitive Pressure and Proximity Sensor for Using in Robotic Systems

have participated in the

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Dmitriy Levonevskiy, Evgenii Karasev and Egor Aksamentov

### Paper Title:

Architecture and Algorithms of Geospatial Service for Navigation of Robotic Complexes

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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Dmitry Ershov and Irina Lukjanenko

### Paper Title:

Vibration Amplitude and Frequency Parameters of Technological Equipment Drives

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020



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Sergei Savin, Oleg Balakhnov and Alexander Maloletov

### Paper Title:

Linearization-Based Forward Kinematics Algorithm for Tensegrity Structures with Compressible Struts

have participated in the

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Denis Milyakov, Vladimir Verba, Vladimir Merkulov and Andrew Plyashechnik

### Paper Title:

Active Phased Antenna Arrays for Long-Range Mobile Radars Based on Quadcopters

have participated in the

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Eugene Larkin, Tatiana Akimenko, Alexey Bogomolov and Konstantin Krestovnikov

### Paper Title:

Mathematical Model for Evaluating Fault Tolerance of OnBoard Equipment of Mobile Robot

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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Elvira Chebotareva, Kuo-Hsien Hsia, Konstantin Yakovlev and Evgeni Magid

### Paper Title:

Laser Rangefinder and Monocular Camera Data Fusion for Human-Following Algorithm by PMB-2 Mobile Robot in Simulated Gazebo Environment have participated in the

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Nikolay Teslya, Alexander Smirnov, Artem Ionov and Alexander Kudrov

### Paper Title:

Multi-Robot Coalition Formation for Precision Agriculture Scenario Based on Gazebo Simulator

have participated in the

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Dmitriy Blinov, Anton Saveliev and Aleksandra Shabanova

### Paper Title:

Deep Q-Learning Algorithm for Solving Inverse Kinematics of Four-Link Manipulator

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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Andrey Karlov, Ekaterina Saveleva, Andrey Yatsun and Aleksey Postolny

### Paper Title:

Modeling of the Exoskeletal Human-Machine System Movement Lifting a Load

have participated in the

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Sergey Kharchenko, Roman Meshcheryakov, Yaroslav Turovsky and Daniyar Volf

### Paper Title:

Implementation of Robot-Human Control Bio-Interface when Highlighting Visual Evoked Potentials Based on Multivariate Synchronization Index have participated in the

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Denis Ivanko, Dmitry Ryumin and Alexey Karpov

### Paper Title:

An Experimental Analysis of Different Approaches to Audio-Visual Speech Recognition and Lip-Reading

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020



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Vinh Nguyen, Quyen Vu and Andrey Ronzhin

### Paper Title:

Mathematical Modeling of Stable Position of Manipulator Mounted on Unmanned Aerial Vehicle

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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Sergey Jatsun, Boris Lushnikov, Oksana Emelyanova and Andres Santiago Martinez Leon

### Paper Title:

Synthesis of SimMechanics Model of Quadcopter Using SolidWorks **CAD Translator Function** 

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020



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Ildar Nasibullayev, Oleg Darintsev, Elvira Nasibullaeva and Dinar Bogdanov

### Paper Title:

Piezoelectric Micropumps for Microrobotics: Operating Modes Simulating and Analysis of the Main Parameters of the Fluid Flow Generation have participated in the

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Vladimir Bocharov, Alexander Danilov, Victor Burkovsky, Konstantin Gusev and Pavel Gusev

#### Paper Title:

Analysis of Resource Availability of Production Enterprise Based on Fuzzy Neural Network

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020



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Petr Neduchal and Miloš Železný

### Paper Title:

Environment Classification Approach for Mobile Robots

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Youshaa Murhij and Vladimir Serebrenny

### Paper Title:

Hand Gestures Recognition Model for Augmented Reality Robotic **Applications** 

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Egor Aksamentov, Konstantin Zakharov, Denis Tolopilo and Elizaveta Usina

### Paper Title:

Approach to Robotic Mobile Platform Path Planning Upon Analysis of Aerial Imaging Data

have participated in the

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Igor Lebedev, Anton Ianin, Elizaveta Usina and Viktor Shulyak

### Paper Title:

Engineering Solution of a Base Station for UAV Maintenance Automation

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Yuriy Obzherin, Mikhail Nikitin and Stanislav Sidorov

### Paper Title:

Hidden Markov Model Based on Signals from Blocks of Semi-Markov System's Elements and Its Application for Dynamics Analysis Energy Systems

have participated in the

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Maxim Kolomeets, Ksenia Zhernova and Andrey Chechulin

Paper Title:

**Unmanned Transport Environment Threats** 

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Ramil Safin, Roman Lavrenov and Edgar Alonso Martnez-Garca

### Paper Title:

Evaluation of Visual SLAM Methods in USAR Applications Using ROS/Gazebo Simulation

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference

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Eldar Mingachev, Roman Lavrenov, Evgeni Magid and Mikhail Svinin

### Paper Title:

Comparative Analysis of Monocular SLAM Algorithms Using TUM and EuRoC Benchmarks

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Alexander Denisov and Oleg Sivchenko

### Paper Title:

Modelling Wireless Information Exchange between Sensors and Robotic Devices

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Sergey Jatsun, Andrei Malchikov, Andrey Yatsun and Ekaterina Saveleva

### Paper Title:

Mathematical Modeling of Load Lifting Process with the Industrial Exoskeleton Usage

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Andrey Trifonov, Sergey Filist, Sergey Degtyarev, Vadim Serebrovsky and Olga Shatalova

### Paper Title:

Human-Machine Interface of Rehabilitation Exoskeletons with Redundant Electromyographic Channels

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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Mark Mamchenko, Pavel Ananyev, Alexander Kontsevoy, Anna Plotnikova and Yuri Gromov

### Paper Title:

The Concept of Robotics Complex for Transporting Special Equipment to Emergency Zones and Evacuating Wounded People

have participated in the

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Rinat Galin and Roman Meshcheryakov

### Paper Title:

Collaborative Robots: Development of Robotic Perception System, Safety Issues and Integration of AI to Imitate Human Behavior

have participated in the

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Aleksandr Nikitin, Vyacheslav Soldatkin and Vladimir Soldatkin

### Paper Title:

Technology for Constructing Multifunctional Controlling System of Motion's Parameters of Unmanned SingleRotor Helicopter

have participated in the

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Elena Efremova and Vladimir Soldatkin

### Paper Title:

Integrated Sensor System for Controlling AltitudeVelocity Parameters of Unmanned Aircraft Plane Based on the Vortex Method

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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Tagir Muslimov and Rustem Munasypov

### Paper Title:

Three-Dimensional Consensus-Based Control of Autonomous UAV Swarm Formations

have participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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Mehmet Guzey

Paper Title:

Neuro Sliding Mode Control for Exoskeletons with 7 DoF

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### Airat Migranov

### Paper Title:

Cloud-Based Task Distribution System Infrastructure for Group of Mobile Robots

has participated in the 15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020



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#### Mikhail Khachumov

### Paper Title:

Tactical Level of Intelligent Geometric Control System for Unmanned Aerial Vehicles

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#### Dinar Bogdanov

### Paper Title:

Continuum Manipulator Motion Model Taking into Account Specifics of its Design

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### Nikolay Lopatkin

### Paper Title:

Quarter-Wave Symmetric Space Vector PWM with Low Values of Frequency Modulation Index in Control of Three-Phase Multilevel Voltage Source Inverter

has participated in the

15th International Conference on Electromechanics and Robotics "Zavalishin's Readings" (ER(ZR)-2020) organized together with 14th International Scientific and Technical Conference "Vibration-2020. Vibration technologies, mechatronics and controlled machines" and 5th International Scientific and Technical Conference "Electric drive, electrical technology and electrical equipment of industrial enterprises" April 15-18, 2020

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