X International IEEE Scientific and Technical Conference "Dynamics of Systems, Mechanisms and Machines" (Dynamics) Conference Dates: 15–17 November, 2016 A.Z. Abdenov, V.A. Trushin

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*Y.I. Bityukov, Y.I. Deniskin* Moscow Aviation Institute (national Research University), Moscow, Russia CHAIKIN ALGORITHM AND ITS GENERALIZATION

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<sup>1</sup>National Research Saratov State University, Saratov, Russia <sup>2</sup>Volga Region Branch of Moscow State University of Railway Engineering (MIIT), Saratov, Russia WAVE OCCURRENCES COMPUTER MODELING IN TWO GEOMETRICALLY NON-LINEAR ELASTIC COAXIAL CYLINDRICAL SHELLS, CONTAINING VISCOUS INCOMPRESSIBLE LIQUID

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*Igor V. Bogachkov, Member of IEEE* Omsk State Technical University,Omsk, Russia EXPERIMENTAL RESEARCHES OF BRILLOUIN BACKSCATTER SPECTRUM IN NON ZERO DISPERSION-SHIFTED OPTICAL FIBERS AT LONGITUDINAL STRETCHING FORCES

*Igor V. Bogachkov, Member of IEEE* Omsk State Technical University,Omsk, Russia EXPERIMENTAL RESEARCHES OF TEMPERATURE DEPENDENCES OF BRILLOUIN BACKSCATTER SPECTRUM IN OPTICAL FIBERS OF VARIOUS TYPES

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*I.N. Burdinsky*<sup>1,2</sup>, *I.V. Karabanov*<sup>1</sup>, *A.S. Mironov*<sup>1,2</sup> <sup>1</sup>Pacific National University, Khabarovsk, Russia <sup>2</sup>Institute for Marine Technology Problems of the Russian Academy of Sciences, Vladivostok, Russia HYDROACOUSTIC SIGNALS OF AUV DATA MEASURING SYSTEMS

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<sup>1</sup>Pacific National University, Khabarovsk, Russia
<sup>2</sup>Chuvash State University, Cheboksary, Russia
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# COMPUTER-AIDED DESIGN OF THE FUZZY CONTROL SYSTEM USING THE GENETIC ALGORITHM

## Lilia U. Emaletdinova, Aigul N. Kabirova

Kazan National Research Technical University-KAI, Kazan, Russia NEURAL FUZZY CONTROLLER TO CONTROL THE ANGLE OF HEEL AND THE COURSE OF THE UNMANNED AERIAL VEHICLE

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Stary Oskol Technological Institute n.a. A.A. Ugarov (branch) NUST "MIS&S", Stary Oskol, Russia ON NEURAL NETWORK BASED ONLINE TUNING OF ROLLING MILL DRIVE ARMATURE CURRENT PI-CONTROLLER PARAMETERS

I.E. Eremin, M.M. Michailov, D.S. Scherban Amur State University, Blagoveschensk, Russia STRUCTURAL AND PARAMETRICAL SYNTHESIS OF CYBERNETIC MODEL OF ELASTIC IONIC POLARIZATION

Eugenie L. Eremin<sup>1</sup>, Evgeniy A. Shelenok<sup>2</sup>
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S.S.Girshin, V.N. Goryunov, A.Ya. Bigun, E.V. Petrova, E.A. Kuznetsov Omsk State Technical University, Omsk, Russia OVERHEAD POWER LINE HEATING DYNAMIC PROCESSES CALCULATION BASED ON THE HEAT TRANSFER QUADRATIC MODEL

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Evgeny Kostyuchenko, Dariya Ignatieva, Roman Mescheryakov, Alexander Pyatkov, Evgeny Choynzonov, Lidiya Balatskaya <sup>1</sup>Laboratory of Biomedical Research, Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia MODEL OF SYSTEM QUALITY ASSESSMENT PRONOUNCING PHONEMES

A.A. Kalentyev, M.V. Cherkashin, D.V. Garays, L.I. Babak Tomsk State University of Control Systems and Radioelectronics, Tomsk, Russia GENETIC-ALGORITHM-BASED AUTOMATED SYNTHESIS OF SIGE BICMOS 1-7 GHZ LINEAR AMPLIFIER

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I.A. Kirovskaya, T.L. Bukashkina Omsk State Technical University, Omsk, Russia STRUCTURAL PROPERTIES - PRECURSORS OF ADSORPTIVE ACTIVITY OF CADMIUM CHALCOGENIDE NEW MATERIALS

*I.A. Kirovskaya, E.V. Mironova, A.A. Grigan, M.A. Zverev* Omsk State Technical University, Omsk, Russia BULK AND SURFACE PROPERTIES OF NEW MATERIALS BASED ON A<sup>II</sup>S SEMICONDUCTOR COMPOSITES

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Ye.M.Kuznetsov<sup>1</sup>, V.V.Anikin<sup>2</sup>
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Ye.M.Kuznetsov<sup>1</sup>, V.V.Anikin<sup>2</sup>
 <sup>1</sup>Omsk State Technical University, Omsk, Russia
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I.S. Latypov, V.V. Sushkov Tyumen Industrial University, Tyumen, Russia REDUCTION OF ACTIVE POWER LOSSES IN OVERHEAD POWER TRANSMISSION LINES RATED FOR 6-35 KV

Pavel Lozhnikov<sup>1</sup>, Alexey Sulavko<sup>1</sup>, Alexander Eremenko<sup>2</sup>, Danil Volkov<sup>1</sup> <sup>1</sup>Omsk State Technical University, Omsk, Russia <sup>2</sup>Omsk State Transport University, Omsk, Russia METHOD OF PROTECTING PAPER AND ELECTRONIC TEXT DOCUMENTS THROUGH A HIDDEN BIOMETRIC IDENTIFIER BASED ON A SIGNATURE

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A.A. L'vov<sup>1</sup>, P.A. L'vov<sup>2</sup>, R.S. Konovalov<sup>2</sup>, S.A. Kuzin<sup>2</sup> <sup>1</sup>Yuri Gagarin State Technical University of Saratov, Saratov, Russia OJSC "Signal" Engels Design Bureau named after A.I. Glukharev, Engels, Saratov region, Russia THE USE OF CURRENT LOOP CIRCUIT AS A SIGNAL CONDITIONER FOR HIGH ACCURACY DIGITAL PIEZORESISTIVE PRESSURE SENSORS

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Alexander G. Lyutarevich, Dmitry S. Osipov, Stanislav Y. Dolinger, Alexander A. Plankov Omsk State Technical University, Omsk, Russia DEVELOPMENT OF ROTOR POSITION SENSOR FOR A PERMANENT MAGNET MOTOR

E.A. Maklakova, V.R. Gasiyarov South Ural State University, Chelyabinsk, Russia IMPACT LOAD RESEARCHES FOR DIFFERENT SETTINGS OF CURRENT REGULATION LOOP OF ELECTRIC DRIVE CONTROL SYSTEM OF ROLLING STAND

Gennady V. Malgin<sup>1</sup>, Anton V. Veynblat<sup>2</sup> <sup>1</sup>Nizhnevartovsk State University, Nizhnevartovsk, Russia <sup>2</sup>JSC Zarubezhneft, Moscow, Russia USING THE POTENTIAL OF ENERGY AND RESOURCE CONSERVATION IN OIL FIELD POWER SUPPLY NETWORKS

Nadezhda N. Malysheva, Aleksandr A. Pavlov Nizhnevartovsk State University, Nizhnevartovsk, Russia DETERMINATION OF PROBABILISTIC DESCRIPTIONS AND STOCHASTIC PROCESSES OF CHANGES LOADS

Anton S. Martianov<sup>1</sup>, Valerii V. Sushkov<sup>2</sup> <sup>1</sup>Tyumen Industrial University, Tyumen, Russia <sup>2</sup>Nizhnevartovsk State University, Nizhnevartovsk, Russia RIDE-THROUGH SOLUTIONS: CLASSIFICATION AND COMPARISON

Yu.K. Mashkov<sup>1</sup>, A.S.Ruban<sup>2</sup>
 <sup>1</sup>Omsk State Technical University, Omsk, Russia
 <sup>2</sup>Siberian State Automobile and Highway Academy,Omsk, Russia
 THERMODYNAMICS OF STRESS-STRAIN AND THERMAL STATE OF THE METALLOPOLYMER TRIBOSYSTEMS ELEMENTS

Vitalii Meshcheryakov<sup>1</sup>, Igor Denisov<sup>2</sup>

<sup>1</sup>Omsk State Transport University, Omsk, Russia <sup>2</sup>Siberian State Automobile and Road Academy, Omsk, Russia AUTOMATION OF THE JIB CRANE OPERATIONS USING ADAPTIVE NEURO-FUZZY INFERENCE SYSTEM

A.G. Mikhailov, P.A. Batrakov

Omsk State Technical University, Omsk, Russia EXPERIMENTAL STUDY OF THE RADIATIVE-CONVECTIVE HEAT TRANSFER IN COMPLEX SHAPE FURNANCES OF THE GAS-TUBE BOILER

## Lev I. Mogilevich, Victor S. Popov

Yuri Gagarin State Technical University of Saratov, Saratov, Russia MATHEMATICAL MODELING OF INCOMPRESSIBLE VISCOUS LIQUID LAYER INTERACTION DYNAMICS IN AN ANNULAR SLIT WITH ITS WALL, SURROUNDED BY ELASTIC MEDIUM

Lev I. Mogilevich<sup>1</sup>, Anna A. Popova<sup>1</sup>, Victor S. Popov<sup>1</sup>, Aleftina V. Christoforova<sup>2</sup> <sup>1</sup>Yuri Gagarin State Technical University of Saratov, Saratov, Russia <sup>2</sup>National Research Saratov State University, Saratov, Russia MATHEMATICAL MODELING OF HIGHLY VISCOUS LIQUID DYNAMIC INTERACTION WITH WALLS OF CHANNEL ON ELASTIC FOUNDATION

*M.U. Nikolayev, E.V. Nikolayeva, A.A. Lyashkov* Omsk State Technical University, Omsk, Russia DATA MEASURING CHANNELS CALIBRATION PROCEDURE

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Omsk State Technical University, Omsk, Russia FUNCTIONAL AND CIRCUITRY BASE OF CONTROL EQUIPMENT DESIGNED FOR TESTING LARGE-SCALE INTEGRATED CIRCUITS

Mariya N. Odinets, Natalya V. Kaygorodtseva, Alexandr I. Odinets, Tatyana N. Kaygorodtseva Omsk State Technical University, Omsk, Russia COMPUTER MODELLING OF A COLLAPSIBLE SURFACE OF THE MIRROR OF THE PARABOLIC ANTENNA, WHILE MAINTAINING THE TECHNICAL CHARACTERISTICS

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Pavel P. Oleynik Shakhty Institute (branch) of Platov South Russian State Polytechnic University, Rostov-on-Don, Russia ROLE-BASED ACCESS CONTROL MODEL AS APPLIED TO OBJECT-ORIENTED APPLICATIONS

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V.B. Shirokov<sup>1,2</sup>, V.V. Kalinchuck<sup>1</sup>, P.E. Timoshenko<sup>1</sup>, P.E. Timoshenko<sup>2</sup>, Yu.I. Yuzyuk<sup>2</sup> <sup>1</sup>Southern Scientific Center of Russian Academy of Sciences, Rostov-on-Don, Russia <sup>2</sup>Southern Federal University, Rostov-on-Don, Russia ACOUSTIC PROPERTIES OF BST08 FILMS TUNABLE BY BIAS ELECTRIC FIELD

Alexey Shokarev, Evgeny Kostyuchenko Yurga Institute of Technology, Yurga, Russia TUSUR, Tomsk, Russia USER AUTHORIZATION IN THE PICTURE PASSWORD SYSTEM WITH APPLICATION OF DIGITAL WATERMARKS

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*O.A. Sidorov<sup>1</sup>*, *V.N. Goryunov<sup>2</sup>*, *I.L. Salya<sup>1</sup>*, *V.V. Tomilov<sup>1</sup>* <sup>1</sup>Omsk State Transport University, Omsk, Russia <sup>2</sup>Omsk State Technical University, Omsk, Russia DYNAMIC MODELS CHOICE FOR PANTOGRAPHS OF HIGH-SPEED RAILWAY TRANSPORT

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# AN ALGORITHM OF THE LOSS RISK ASSESSMENT IN THE OIL PRODUCTION IN CASE OF ELECTRIC SUBMERSIBLE MOTOR FAILURE

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<sup>1</sup>Omsk State Technical University, Omsk, Russia <sup>2</sup>Sobolev Institute of Mathematics, Siberian Branch of the Russian Academy of Sciences Omsk, Russia DYNAMIC EQUATIONS OF NODE DEGREES IN GROWING NETWORKS WITH CONNECTION LOSSES

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<sup>5</sup>The Shukshin Altai State Humanities Pedagogical University, Biysk, Russia, INFLUENCE OF ELASTIC STRAIN ON THE POSSIBILITY OF EXCITATION OF DISCRETE BREATHERS IN THE NANOFIBER CRYSTAL WITH A<sub>3</sub>B STOICHIOMETRY

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