

JOURNAL OF AUTOMATION AND INFORMATION SCIENCES

Volume 46

Issue 1

2014

CONTENTS

- 1 On Using the Shcur Method for Solving Unilateral Quadratic Matrix Equation**
V.B. Larin
- 9 Hybrid Algorithm for Identification of Linear by States Hammerstein Model**
F.G. Garashchenko, O.G. Moroz
- 20 Guaranteed Estimation of Parameters of Linear Algebraic Equations for Nonstationary Observations**
A.G. Nakonechnyi, S.V. Demydenko
- 30 Structural Recognition of the Nonlinear Discrete Dynamic Objects Based on the Generalized Probabilistic Criteria**
P.A. Kucherenko, S.V. Sokolov
- 42 On the Problem of In-Flight Geometric Calibration Using Unknown Landmarks**
A.I. Tkachenko
- 53 Equations for the Survival Probability of an Insurance Company in the (B, S) -market Taking into Account Advertising**
B.V. Bondarev, V.O. Boldyreva
- 63 Investigation of the Applicability of the Co-occurrence Matrix for Detecting Steganoaudiosignals**
N.V. Koshkina
- 73 Matrix Integro-Differential Riccati Equation for Parabolic System**
M.M. Kopets

CONTENTS

- 1 The Numerically Analytical Solutions of Some Geomigratory Problems within the Framework of Fractional-differential Mathematical Models**
V.M. Bulavatsky, Iu.G. Kryvonos
- 12 Estimation of Basic Characteristics of Algorithms for Computing the Frequency Response of the Linear Stationary Model of a Controlled Object on Some Classes of Functions**
V.K. Zadiraka, E.N. Kolomys, L.V. Luts, S.S. Melnikova
- 27 Stability and Effective Algorithms for Solving Multiobjective Discrete Optimization Problems with Incomplete Information**
V.A. Emelichev, V.M. Kotov, K.G. Kuzmin, T.T. Lebedeva, N.V. Semenova, T.I. Sergienko
- 42 Simplex Shape of the General Permutable Polyhedron Specified by Irreducible System**
O.A. Iemets, M.V. Leonova
- 56 Knowledge Information Model of the Scenario Analysis**
N.D. Pankratova, L.Yu. Malafeeva
- 67 Engineering Method of Optimization of Digital Control Systems**
I.M. Golyenko, A.P. Ladanyuk, A.I. Kubrak
- 76 Fast Simulation Method for the Evaluation of Intersection Probability of Random Level by Markov Process**
O.N. Khomyak

CONTENTS

- 1 To 100-birthday Anniversary of Academician of NAS of Ukraine**
Alexander Ivanovich Kukhtenko
- 3 Systems Identification and Model Order Reduction by Direct Variational Method**
V.F. Gubarev, O.V. Vizniuk, D.M. Parkhomchuk
- 17 Modeling and Identification in the Problems of Multicriteria Optimization with Linear and Quadratic Performance Criteria under Statistical Uncertainty**
A.M. Nazarenko, M.V. Karpusha
- 30 Numerical Approach to Parametric Identification of Dynamical Systems**
K.R. Aida-zade, V.M. Abdullaev
- 47 Method of Structural Parametric Synthesis of Complex Ergatic Distributed Informational-Controlling System of Response on Conflict Situation**
Yu.G. Danyk, A.A. Pysarchuk
- 70 Methods of Analysis and Characteristics Optimization of a New Access Strategy in Cellular Communication Networks**
A.Z. Melikov, L.A. Ponomarenko

CONTENTS**1 Group Approach under Phase Constraints***Ya.I. Bigun, I.Iu. Kryvonos, Al.A. Chikrii, K.A. Chikrii***9 Numerical Efficiency of Semidefinite Optimization Methods***A.I. Kosolap, A.S. Peretyatko***20 Time-Nonlocal Two-Point Problem and Optimal Control Problem for Evolutionary Pseudodifferential Equations***V.V. Gorodetsky, Ya.M. Drin'***38 Neural Networks and Fuzzy Logic Control System of Hybrid Vehicle Power Unit***S.A. Serikov***60 Estimation of State and Parameters of Dynamic System with the Use of Ellipsoids at the Lack of a Priori Information on Estimated Quantities***N.N. Salnikov*

CONTENTS

- 1 Evaluation of the Reliability of Repairable $(s-t)$ Networks by Fast Simulation Method**
N.Yu. Kuznetsov
- 15 Dynamical Risk Model with Investment in Assets**
N.S. Gonchar
- 35 Economy Modeling with Formation of Agricultural Land Market. Part I**
V.S. Grygorkiv, S.V. Ishchenko, M.V. Grygorkiv
- 45 A Strongly Convergent Splitting Method for Systems of Operator Inclusions with Monotone Operators**
V.V. Semenov
- 57 Prediction of Deformation Solitary Waves Trajectories in Anisotropic Elastic Solids**
A.Ya. Bomba, Yu.V. Turbal
- 68 The Information Model of Multilevel System of ConveyORIZED Programs Execution**
K.V. Krotov

CONTENTS

- 1 Mathematical Models with a Control Function for Investigation of Fractional-differential Dynamics of Geomigration Processes**
V.M. Bulavatsky, Iu.G. Kryvonos
- 12 To Stability Assessment for a Class of Dynamical Systems**
G.A. Tsybulkin
- 20 Formation of Correction Signals of Systematic Codes Distortions Based on Quasisyndromes in the Algorithmic Recurrent Decode Environment in the Rate of Channel Time: the Case of Multiple Errors**
A.V. Ushakov, E.S. Likholetova
- 37 Control of Heat Supply System with Structural Changeable Hardware**
O.B. Maksimova, V.O. Davydov, S.V. Babich
- 49 Formalization of an Optimal Control Problem of Large Systems in Critical Modes**
A.V. Rudakova
- 58 Generalized Optimal Control for Systems Described by Linear Integro-Differential Equations with Nonnegative Definite Integral Operators**
A.V. Anikushyn
- 68 Reduction of Known-Plaintext Attack on a Locally Commutative Cipher to Algebraic Problems in Classical and Quantum Computation Models**
A.V. Fesenko
- 77 Checking the Quality of Approximation of the Time Series by the Fractal Brownian Motion**
V.V. Bondarenko

CONTENTS

- 1 The Method of Resolving Functionals for a Dynamic Game in a Sobolev System**
L.A. Vlasenko, A.A. Chikrii
- 12 Hard Optimal Stabilization of Nonlinear Dynamic Systems**
S.M. Onishchenko
- 28 Optimal Boundary Control Problem Solution for Inhomogeneous Biharmonic Equations**
E.M. Kiseleva, L.V. Voloshko
- 40 Optimization of Stabilization Processes of Marine Mobile Object in Dynamic Positioning Mode**
V.L. Timchenko, O.A. Ukhin
- 53 Control of Resonant Electromagnetic Vibrational Drive Using a Digital Filtering Algorithm Based on Discrete Fourier Transform**
A.A. Chernov
- 69 Substantiation of Classification of Scheduling Problems Solved in a Multilevel System of Conveyrized Programs Implementation**
K.V. Krotov

CONTENTS

- 1 On Navigation of the Wheeled Transport Robot**
V.B. Larin
- 10 Modal Control of Crystallization Systems**
N.A. Balonin, V.S. Suzdal, Yu.S. Kozmin
- 18 Effect of Dissipative Factors on Dynamical Processes in Controlled Technological Machine Aggregates**
V.A. Krasnoshapka
- 27 Optimal Control of Heat Transfer Process**
M.M. Kopets
- 38 An Optimization Problem with a Fuzzy Set of Fuzzy Constraints**
S.O. Mashchenko, Mohammed Saad Ibrahim Al-Sammarraie
- 49 Semi-Stability of Main Operators in Differential Games with Non-Fixed Time**
I.M. Iskanadjiev
- 56 On a Problem of Stabilization of Stochastic Differential-functional Equations with Impulse Markovian Perturbations and Constant Lag. Part I**
V.I. Musurivskiy, V.K. Yasinskiy
- 67 Evaluating the Functional Failure Probability of System with the Varying Efficiency by the Fast Simulation Method**
O.N. Khomyak
- 77 Software Implementation of Numerical Method for Optimal Control in Problems of Preventive Medicine**
I.Ye. Andrushchak

CONTENTS

- 1 A New Method for Solving the Cauchy Problem for Systems of Ordinary Differential Equations**
O.N. Lytvyn, L.S. Lobanova, G.A. Miroshnychenko
- 12 On Approximation of Solutions to one Class of the Optimal Control Problems for Parabolic Equation with Unbounded Coefficients**
S.A. Gorbonos
- 29 Algorithms for Constructing the Guaranteed Solution and Guaranteed Approximate Solution of Multidimensional Knapsack Problem**
K.Sh. Mamedov, N.N. Mamedov
- 38 On Geographical Coordinate Determination of Space Images**
D.V. Lebedev
- 49 Coordinated Spacecrafts Translational Motion Control within Linear Architecture Cluster**
A.G. Melanchenko
- 68 Biophysical Parameters of Water Ecosystem Estimation Using Satellite Images and Optimization Techniques**
O.V. Semeniv, L.V. Pidgorodetska
- 78 Information Model of Control of the Continuous Type Technological Complexes in the Class of Organizational and Technological Systems**
T.A. Prokopenko, A.P. Ladanyuk

CONTENTS

- 1 Mathematical Modeling of Consolidation Dynamics on the Basis of Fractional-Differential Approach**
V.M. Bulavatsky, Iu.G. Kryvonos
- 11 Forecasting the Volatility of Financial Processes with Conditional Variance Models**
P.I. Bidyuk, N.V. Kuznetsova
- 20 Nonstationary Model of Solar Spicule**
Yu.P. Ladikov-Roev, A.A. Loginov, O.K. Cheremnykh
- 30 On Stochastic Optimal Control of Discrete-time Risk Processes**
B.V. Norkin
- 45 To Approaches for Solving Transportation Problem with Fuzzy Resources**
E.V. Ivokhin, Almodars Barraq Subhi Kaml
- 58 Splitting Methods Parallel Algorithms for Problems of Pollution Transport in Atmosphere**
A.V. Gladky, T.Yu. Blagoveshchenskaya, V.A. Bohaienko
- 72 An Approach to Adaptive Control Process of Seeding Based on the Identification of Grain Flow**
Yu.M. Parhomenko

CONTENTS

- 1 Heterogeneous Medical Information Systems Integration**
Iu.G. Kryvonos, O.A. Khorozov
- 9 Multiobjective Optimization of Evolving Feedforward Neural Networks**
O.G. Rudenko, A.A. Bezsonov
- 23 Methods and Technologies of Parallel Computing for Mathematical Modeling of Stress-Strain State of Constructions Taking into Account Ductile Fracture**
E.A. Velikoivanenko, A.S. Milenin, A.V. Popov, V.A. Sidoruk, A.N. Khimich
- 36 On a Problem of Stabilization of Stochastic Differential-functional Equations with Impulse Markovian Perturbations and Constant Lag. Part II**
V.I. Musurivskiy, V.K. Yasinskiy
- 43 Sufficient Condition for Robust Stability of the Controlled Object Motion Along the Prescribed Trajectories**
G.A. Tsybulkin
- 50 Methods of Complex Analysis of Parameters Identification of Quasiideal Processes in Nonlinear Doubly-layered Porous Pools**
A.Ya. Bomba, E.N. Hladka
- 63 A Computing Scheme for Integration of Stiff Ordinary Differential Equations on the Basis of Shifted Differential Transformations**
M.Yu. Rakushev
- 76 Features of Development of Training Materials and Knowledge Control Systems**
Sh.N. Shahbazova

CONTENTS

- 1 Conceptual Bases for Modeling Technologies of Anticipatory Reflection by a Human of Events in the Environment**
V.A. Chernomorets, V.M. Belov
- 10 Steganalysis of Keyless Steganosystems Based on Control Embedding Attack**
N.V. Koshkina
- 19 Reconstruction of Missing Data in Time-Series of Optical Satellite Images Using Self-Organizing Kohonen Maps**
S.V. Skakun, R.M. Basarab
- 27 Classical Solvability of Direct and Inverse Boundary Value Problems for Parabolic Pseudodifferential Equations with Variable Inhomogeneous Symbol**
Ya.M. Drin'
- 36 Strong Solvability and Strong Feasibility of Fuzzy Linear Systems of Inequalities**
O.A. Iemets, A.O. Yemets
- 48 Investigation of the Statistical Characteristics of the Modified Fibonacci Generators**
M.N. Mandrona, V.N. Maksymovych
- 54 Economy Modeling with Formation of Agricultural Land Market. Part II**
V.S. Grygorkiv, S.V. Ishchenko, M.V. Grygorkiv
- 65 On Non-ruin Probability of Insurance Company, Operating on the (B, S) -Market. Proportional Insurance Premiums**
B.V. Bondarev, V.O. Boldyreva
- 78 Contents 2014**