2020 15th International Conference on Stability and Oscillations of Nonlinear Control Systems (Pyatnitskiy's Conference) (STAB 2020)

Moscow, Russia
3 – 5 June 2020

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

69	Fursov A., Mosolova Yu.	Switched Linear System Stabilization under Parametric Uncertainty
73	Galyaev A., Lysenko P.	About Synchronization Problem of Group of Weakly Coupled Identical Oscillators
77	Gavrikov A., Kostin G.	A Nonlinear Model of Heat Transfer for Cylindrical Bodies Controlled by a Thermoelectric Converter
81	Golubev A.E., Utkina N.V.	Polynomial-Based Trajectory Planning for Affine Dynamical Systems under State and Input Constraints
84	Gulyukina S., Utkin V.	Tracking Problem with Consideration of Physical Restrictions on Phase Variables and Controls
88	Gusev M.	On Applicability of Linearization Approach in Calculating Small-Time Reachable Sets of Nonlinear Control Systems
92	Holub A., Selyutskiy Yu., Hwang S.-S.	Self-Sustained Oscillations of a Double Aerodynamic Pendulum
95	Ilyina A., Krasinskiy A.	Stabilization of Steady Motions of Systems with Geometric Constraints and Cyclic Coordinates
99	Kamenetskiy V.	Stability Conditions for Systems with Switching Between Four Linear Discrete Subsystems
103	Kanatnikov A.N., Tkacheva O.S.	Observer for a Pacemaker Model Based on the Van Der Pol Equation
107	Kayumov O.	Time-Optimal Movement of an Elliptical Pendulum
110	Kholostova O.	Investigation of Nonlinear Oscillations of Near-Autonomous Hamiltonian Systems in the Cases of Multiple Parametric Resonances
114	Khrustalev M.	Both Necessary and Sufficient Global Optimality Conditions for Discontinuous Dynamical Systems
117	Khryashchev S.	On Finding Switching Instants for Control of Discrete-Time Dynamical Polysystems by Using Continued Fractions
121	Knyazkov D., Figurina T.	Periodic Regimes of Motion of a Chain of Interacting Bodies in a Medium with Resistance
124	Kokunko Yu.G., Krasnova S.A., Pivneva S.V.	Feedback Synthesis for UAVs Based on the Control Hierarchy Method
128	Korneev V.A.	Anticipation and Delay for a Constant-force Control in the Problem of Protection of an Object on a Movable Base from an Impact
132	Korneev V.A., Udin S.V.	Control of Anticipation and Delay in the Problem of Shock Isolation of an Object on a Movable Base
136	Korolev V.S., Polyakhova E.N., Pototskaya I.Yu., Stepenko N.A.	Mathematical Models of a Solar Sail Spacecraft Controlled Motion

140	Kostin G.	Analysis and Optimization of Rotation of an Elastic Loaded Link with an Electric Drive
144	Kostousova E.K.	On a Polyhedral Method for Solving an Evasion Problem for Linear Discrete-Time Systems
148	Krasnov D.V.	Dynamic Feedback Synthesis in Tracking Single-Channel Systems under the Influence of Uncontrolled Disturbances
152	Krishchenko A.P., Tverskaya E.S.	Analysis of Systems with Non-Negative Variables Using the Localization Method
156	Kuleshov A.S.	Application of the Kovacic Algorithm to the Problem of Motion of a Heavy Rigid Body with a Fixed Point in a Hess Case
158	Kustov A., Timin V., Yurchenkov A.	Anisotropic Norm Computation for Time-invariant Random System
161	Kustov A., Yurchenkov A.	Anisotropic Estimator Design for Time Varying System with Measurement Dropouts
165	Lychev S., Koifman K., Petrenko A., Bout D.	Modeling and Optimization for Oriented Growing Solids
169	Lycheva T., Lychev S.	Modeling and Optimization of the Shape of Contacting Solids at Finite Deformations
172	Makhmudov P., Samsonov V., Dosaev M., Klimina L., Vershinin Yu.	Planning a Motion of a Wheeled Robot Controlled by a Motion of Internal Mass
175	Malikov A.	Observer Based Decentralized Control for Interconnected Systems with Uncertain Disturbances
179	Mashtakov A.	On Extremal Controls in the Sub-Riemannian Problem on the Group of Rigid Body Motions
182	Masterova A., Selyutskiy Yu., Zubkov A., Garziera R.	On Empirical Model of Aerodynamic Torque Acting on Savonius Rotor
185	Matrosov I., Morozov Yu., Pesterev A.	Control of the Robot-Wheel with a Pendulum
189	Mitrishkin Y.V., Kruzhkov V.I.	Two-Cascade Multiloop Control System of a Plasma Shape in a Tokamak with Decoupling and Robust PID-Controllers
193	Mitrishkin Yu., Ivanova S.	Synthesis of a Robust Control System for an Unstable Plant Using QFT
196	Morozov M.	On Stability of Periodic Selector-Linear Differential Inclusions with Asymptotically Stable Sets
199	Morozov V.M., Kalenova V.I.	Controllability of the Satellite Stabilized by Magnetic Torques
200	Okhitina A., Roldugin D., Tkachev S.	Biologically Inspired Optimization Algorithm in Satellite Attitude Control Problems

203	Okunev Yu., Privalova O., Samsonov V.	Influence of Shape of Blades upon Descent of a Finned Body in Media
205	Pavlova N., Zhukovskaya Z., Zhukovskiy S.	Equilibrium in Continuous Dynamic Market Models
208	Perepelkin V., Rumyantsev D.	The Influence of the Average Frequency of Oscillations of the Earth's Pole on the Accuracy of Predicting Its Position
212	Pesterev A., Matrosov I., Morozov Yu.	Control of a Mechanical System Based on the Constraint Stabilization Technique
216	Platonov A.V.	Stability Analysis for Nonlinear Mechanical Systems with Non-stationary Potential Forces
220	Poliakov V., Saurin V.	The Stationary Optimal Control in Combined Discrete and Continuous System
222	Rapoport L., Tormagov T.	On the Solvability of Linear Matrix Inequalities under Quadratic Constraints
225	Rodnikov A.V.	Pendulum Motions of a Spacecraft Equipped with a Solar Sail and Tethered to a Heliocentric Space Station
228	Rumyantsev D., Tsarkov K.	On Certainty Equivalence Property in Deterministic LQ-Problems with Random Initial Data and Information Constraints
232	Ryabov P.E.	On the Works of M. P. Kharlamov on the Phase Topology of the Kowalevski Top in Two Constant Fields
235	Rybakov K.	Sufficient Epsilon-Optimality Conditions for Stochastic Systems Driven by Non-Poisson Impulses
239	Sachkov Yu.	Bang-Bang Extremals in Sub-Finsler Problems on Engel Group
243	Samsonyuk O., Sorokin S.	Optimality Conditions for Impulsive Processes with Intermediate State Constraints
247	Saurin V., Poliakov V.	A Variational Approach to Modeling and Optimization of the Dynamics for an Elastic Beam with Variable Cross Section
250	Sedova N., Druzhinina O.	Stabilization of Constrained Nonlinear Triangular Delay Systems Using Convex Optimization
254	Shevchenko R.I.	One Approximation in the Optimal Stabilization Problem for the System of Periodic Delayed Differential Equations
258	Smirnova V.B., Proskurnikov A.V., Pak E.E., Titov R.V.	New Criteria for Gradient–like Behavior of Synchronization Systems with Distributed Parameters
262	Smirnova V.B., Proskurnikov A.V., Utina N.V.	Leonov's Method of Nonlocal Reduction for Pointwise Stability of Phase Systems

266	Sokolov V.	Adaptive Optimal Robust Tracking of Discrete-Time Minimum-Phase Plant under Biased Disturbance
270	Solodusha S.V.	New Classes of Volterra Integral Equations of the First Kind Related to the Modeling of the Wind Turbine Dynamics
273	Somov Ye., Butyrin S., Somov S.	Motion Control of Space Robot at an Inspection of Geostationary Satellite State
277	Somov Ye., Butyrin S., Somova T.	Autonomous Guidance and Attitude Control of Information Satellite
281	Stepanova I., Salnikov A., Batov A.	Variable Dimension Block Method for Solving the Big Data Problem in Geophysics
284	Tikhonov A.A., Yakovlev A.B.	On the Attitude Control of an Electrodynamic Tether System Interacting with Near-Earth Plasma
289	Tkacheva O., Vinogradova M., Utkin A.	The Comparison of Approaches to Estimating Speed from Position Measurements in Van Der Pol-Duffing System
293	Tkhai V.N.	A Family of Oscillations That Connects Equilibria