

2021 17th International Asian School-Seminar Optimization Problems of Complex Systems (OPCS 2021)

**Novosibirsk, Russia
13 – 17 September 2021**



**IEEE Catalog Number: CFP21U46-POD
ISBN: 978-1-6654-0563-8**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21U46-POD
ISBN (Print-On-Demand):	978-1-6654-0563-8
ISBN (Online):	978-1-6654-0562-1

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

Problematic Issues Of Providing Validity and Optimization of the Exchange of Archival Information Based on Blockchain Technology <i>Abdushukur Abdullaev, Abdusobir Saidov, Anvarjon Aliev</i>	4
One Refinement of the Simplest Growth Model <i>Sergey Antsyz</i>	9
Scientific Internet Resource for the Geophysical Research Support <i>Ludmila Braginskaya, Valery Kovalevsky, Andrey Grigoruk, Tatiana Latyntseva</i>	13
Piece-Wise Constant Pricing in Dynamic Marketing <i>Igor Bykadorov</i>	18
Stabilizing Regulator in One Class of Continuous System with Control Constraints <i>Mikhail Dmitriev, Zainelkhriet Murzabekov, Gulbanu Mirzakhmedova</i>	23
Development and Study of the Global Asymptotic Stability Method for Electric Power Systems <i>Maksat Kalimoldayev, Assel Abdildayeva</i>	28
Optimization Model for Designing the Student Individual Educational Trajectory Structure <i>Nadezhda Kaznacheeva, Aleksei Poletaikin</i>	34
Optimization Problem of Inter-wave Transformations in Geophysics <i>Marat Khairetdinov, Gyulnara Shimanskaya, Alexander Mikhailov, Holmatjon Imomnazarov</i>	40
Optimization of Frequency Parameters Choice in the Polarization Analysis of Transport Noise. <i>Oksana Kopylova, Vladimir Dobrorodny, Marat Khairetdinov</i>	44
Multiparameter Optimization Model for Designing Competence Achievement Indicators <i>Ekaterina Kunts</i>	49
A Generalized Routing Algorithm for a Family of Optimal 2D Circulant Networks Based on Relative Addressing <i>Emilia Monakhova, Oleg Monakhov</i>	55
Extensions of Royal Road functions for use in SELEX in silico <i>Ekaterina Myasnikova, Alexander Spirov</i>	60
About Approaches to Solving and Applying Problems of Bilevel Stochastic Linear Programming <i>Artem Novikov</i>	65
Multi-agent optimization algorithms for optimal control of trajectory pencils <i>Andrei Panteleev, Maria Karane</i>	73
Numerical Comparison of the Adjoint Problem-based and Derivative-free Algorithms on the Coefficient Identification Problem for a Production-Loss Model <i>Alexey Penenko, Viktoria Konopleva, Aleksandr Bobrovskikh</i>	78
Economic System Management Using Network Models <i>Nina Plyaskina</i>	84
Forming a Indicators System of Digital Maturity an Educational Organization with Attributes of Sufficiency <i>Aleksei Poletaikin, Valery Kanev, Yuliya Shevtsova, Nadezhda Dvurechenskaya</i>	90
Optimal Structures of Random Graphs <i>Alexey Rodionov</i>	96

The task of optimizing information resources in organizing remote customs control of international road transportation <i>Abdusobir Saidov, Mirkomol Mirboboev, Fazilat Khakimova</i>	100
On Parallel Calculation of All-Terminal Network Reliability <i>Kirill Sergeev, Denis Migov</i>	104
Reliability Modeling for Industrial Edge Computing Systems <i>Vladimir Shakhov, Anastasiya Yurgenson</i>	108
Intelligent Analysis the Text Content of Job Profiles <i>Yuliya Shevtsova, Victoria Anisenko</i>	113
Simulation of Message Transmission among Moving objects <i>Olga Sokolova, Sergey Rudometov</i>	117
Algorithm for Analysis of Road Networks Described as Graphs and Hypergraphs <i>Aleksandr Soldatenko, Daria Semenova</i>	121
Parallel Genetic Algorithm for Sink Nodes Placement to Maximize Network Reliability <i>Aleksandr Tarasov, Denis Migov</i>	126
On the Simulation of Data Transmission to Sinks in Vehicular Network <i>Kirill Tkachev, Semen Korsakov</i>	130
The Routes Choosing Methodology for Laying Networks in Three-Dimensional Space <i>Gulzhigit Toktoshov</i>	134
Forecasting Recessions in the US Economy Using Machine Learning Methods <i>Nikolay Zyatkov, Olga Krivorotko</i>	139
Author Index	147
Acknowledgement of Support	149