

Science Book Publishing House, USA
Baku State University, Azerbaijan
Lipetsk State Technical University, Russian Federation
Academy of Federal Security Guard Service of the Russian
Federation, Orel, Russian Federation
Don State Technical University, Rostov-on-Don, Russian
Federation
Voronezh State Technical University, Russian Federation
Vologda State University, Russian Federation

MODERN INFORMATIZATION PROBLEMS

Proceedings of the XIX-th
International Open Science Conference
(Yelm, WA, USA, January 2014)



Science Book Publishing House

Yelm, WA, USA - 2014

Modern informatization problems: Proceedings of the XIX-th International Open Science Conference (Yelm, WA, Usa, January 2014)/ Editor in Chief Dr. Sci., Prof. O.Ja. Kravets. - Yelm, WA, USA: Science Book Publishing House, 2014. – 184 p.

ISBN 978-1-62174-040-7

Proceedings summarizing the results of the XIX-th International Open Science Conference "Modern informatization problems", held in November 2013 - January 2014. It contains information within the following areas: **informatics in education, medicine and economics, analysis and synthesis of complex systems, simulation of complex systems and engineering procedures, information systems and their applications, telecommunication systems and applications.**

Data gathered within collected papers may be useful to researchers and engineering technicians, whose work involves various aspects of modern society informatization, as well as to postgraduates and students studying subjects related to informatics and computer engineering.

Proceedings Editorial Board:

O.Ya. Kravets, Dr. Sci., Prof. (editor in chief, Science Book Publishing House, USA); **A.A. Aliyev**, Dr. Sci., Prof. (Baku State University, Azerbaijan); **S.L. Blumin**, Honored Scientist of Russian Federation, Dr. Sci., Prof. (Lipetsk State Technical University, Russian Federation); **E.V. Lebedenko**, Dr. (Academy of Federal Security Guard Service of the Russian Federation, Orel, Russian Federation); **A.D. Lukyanov**, Dr. (Don State Technical University, Rostov-on-Don, Russian Federation); **S.L. Podvalny**, Honored Scientist of Russian Federation, Dr. Sci., Prof. (Voronezh State Technical University, Russian Federation); **A.M. Vodovozov**, Prof. (Vologda State University, Russian Federation)

ISBN 978-1-62174-040-7

Ó **Authors, 2014**

Preface

Dear Colleagues!

Present proceedings were published to summarize the results of the XIX International Open Conference "Modern informatization problems". The conference was held through the joint efforts of Science Book Publishing House (USA), Voronezh State Technical University, Baku State University (Azerbaijan), Vologda State University, Lipetsk State Technical University, Don State Technical University (Rostov-on-Don), and the Academy of Federal Security Guard Service of the Russian Federation (Orel), in November 2013 – January 2014.

Proceedings contain information within the following areas: information communications in education, medicine and economics, analysis and synthesis of complex systems, simulation of complex systems and engineering procedures, information systems and their applications, telecommunication systems and applications.

The conference was held to encourage exchange of experience between leading experts in utilization of information technologies in various spheres of science, engineering, and education. The conference followed the traditions established by its predecessors.

Representatives of leading research centers and educational institutions from some countries introduced the audience to the results of their research, which are available not only in this collected works, but on <http://www.sbook.ru/spi>.

Organizing Committee Chair,
Editor in Chief
Dr. Sci., Prof.

O.Ja. Kravets

Author's index

Afanasyev V.V.	157	Sandler I.L.	70
Andreev A.N.	28	Saraev P.V.	32
Andreev M.A.	28	Seluyanov M.G.	177
Aprelikov A.I.	157	Semenova I.I.	177
Artemov A.A.	109	Sharipov M.A.	130
Berezhnaya E.V.	4	Sheybukhov S.N.	94
Blyumin S.L.	32	Shmatko A.V.	20
Bulatov I.V.	141	Shumov V.V.	137
Chernyaev A.V.	90	Shumskaya A.O.	73
Demidova L.A.	111, 160	Statnikov I.N.	78
Domnin A.A.	141	Suhov N.Yu.	160
Dunaev V.A.	166	Sukachev A.I.	57
Firsov G.I.	78	Surkova A.S.	141
Gadzhiev Yu.A.	35	Syusin I.A.	169
Ivaschenko A.V.	169	Tarasov A.V.	125
Karavaev M.A.	125	Tishkin R.V.	111
Karpuk A.A.	119	Tsarev A.A.	141
Khuskivadze A.P.	37	Vodovozov A.M.	144
Kolesnichenko D.A.	94, 144	Voron A.M.	101
Konev V.A.	160	Yumashev V.L.	169
Kravets O.Ja.	6, 57, 172	Zaslavskaya O.Ju.	6, 23, 146
Kroshilin A.V.	122	Zhemchuzhnikov D.G.	23
Kroshilina S.V.	122	Графов О.Б.	153
Kustov A.I.	98	Руднев К.К.	83
Lipilina A.P.	28	Семашкин В.Г.	86
Lobachev I.V.	65		
Lokteva M.V.	172		
Lomakina L.S.	101		
Maneva R.I.	20		
Meltsov V.Y.	125		
Muntseva N.M.	144		
Mutin D.I.	12		
Nemykin I.E.	109		
Nesterov N.I.	111		
Novikova G.M.	103		
Oleynikova S.A.	67		
Parkalaba P.L.	109		
Pavlov A.A.	90		
Preobrazhensky A.P.	4		
Samigulina G.A.	105		
Samigulina Z.I.	105		

Contents

Preface	3
1. Info-communications in education, medicine and economics.....	4
Berezhnaya E.V., Preobrazhensky A.P. The features of construction the automated working place of a doctor-hygienist.....	4
Kravets O.Ja., Zaslavskaya O.Ju. Theoretical bases of training individualization in informatics	6
Mutin D.I. Improving the efficiency of data management in a heterogeneous medical information system	12
Shmatko A.V., Maneva R.I. The model of agriholding strategic management structure	20
Zhemchuzhnikov D.G., Zaslavskaya O.Ju. Methodological aspects of the application of didactic games constructor http://classtools.ru and recommendations for the creation of the training sets for computer science lessons	23
2. Analysis and synthesis of complex systems.....	28
Andreev A.N., Andreev M.A., Lipilina A.P. Digital filtering of the sensor signals by wavelet analysis methods.....	28
Blyumin S.L., Saraev P.V. Multicriteria optimization, regularization, pseudoinversion, and multiresponse regression.....	32
Gadzhiev Yu.A. A computational model for the quantized discrete transform rounding-off errors	35
Khuskivadze A.P. System analysis of the quality of operation of management objects in online regime and decision making, which reduces the system of management objects to the best - normal - state	37
Kravets O.Ja., Sukachev A.I. To the interactive intermodular interaction research in the channel noise conditions on the encoding techniques basis	57
Lobachev I.V. Automated control system of the service center.....	65
Oleynikova S.A. Algorithm for determining the point of return for scheduling tasks with time constraints and criterion of uniform load	67
Sandler I.L. Algorithm of recurrent estimation of parameters of multidimensional linear dynamic systems of the different order with non-stationary autokorellated hindrances	70
Shumskaya A.O. The effectiveness of the euclidean and mahalanobis distances while solving the problem of the text origin identification	73
Statnikov I.N., Firsov G.I. Questions of the algorithmization of the calculation of the more probable on average values of criteria in the PLP-search	78
Руднев К.К. Параметрическая идентификация многомерной нелинейной стационарной динамической системы при наличии автокоррелированных помех в выходных сигналах	83

Семашкин В.Г. Идентификация многомерной нелинейной стационарной динамической системы разного порядка с автокоррелированными помехами на выходе.....	86
3. Simulation of complex systems and engineering procedures.....	90
Chernyaev A.V., Pavlov A.A. Verification of the model of oil spill spread in a water area with minor stream	90
Kolesnichenko D.A., Sheybukhov S.N. System of protection and diagnosis asynchronous electric motor.....	94
Kustov A.I. Mathematical modeling as the instrument of studying of the unstable nanostructures which are forming on the surface of luminescing ion-covalent crystals	98
Lomakina L.S., Voron A.M. Diagnosis of complex technical systems considering instrumentation failures	101
Novikova G.M. Modeling as a function of the corporate infocommunication system	103
Samigulina G.A., Samigulina Z.I. Intellectual systems of the industrial equipment diagnostics on the basis of the artificial immune systems approach	105
4. Information systems and their applications.....	109
Artemov A.A., Parkalaba P.L., Nemykin I.E. Common information about the functioning of the automated librarian system with the SQL requests.....	109
Demidova L.A., Nesterov N.I., Tishkin R.V. Earth surface images segmentation by means of the intelligent information technologies.....	111
Karpuk A.A. Development information – analytical systems for quality evaluation and optimization radio networks	119
Kroshilin A.V., Kroshilina S.V. Solution of problems of intellectual materials management in expert systems.....	122
Meltsov V.Y., Tarasov A.V., Karavaev M.A. Development of the instruction processor of specialized logic inference machine	125
Sharipov M.A. Prerequisites of incorporation and reason of popularity of modern ERP-systems.....	130
Shumov V.V. Values management of border security.....	137
Surkova A.S., Domnin A.A., Bulatov I.V., Tsarev A.A. Automated text classification and clustering using neural networks and decision trees algorithms	141
Vodovozov A.M., Kolesnichenko D.A., Muntseva N.M. Virtual instrument for quality measurement and accounting of electric energy	144
Zaslavskaya O.Yu. Algorithm for formation of managerial competence of the future teachers of informatics in the context of informatization.....	146
Графов О.Б. Синтез блока вычисления невязок устройства декодирования кодов Рида-Соломона	153

5. Telecommunication systems and applications.....	157
Aprelikov A.I., Afanasyev V.V. Experimental performance evaluation of the decentralized management's algorithm of the multidatabase structure with global scheme	157
Demidova L.A., Konev V.A., Suhov N.Yu. Aspects of development of the intellectual software complex for anomalies detection in the data stream ...	160
Dunaev V.A. Method of data distribution on the nodes of a database with the minimum of the average response time	166
Ivaschenko A.V., Syusin I.A., Yumashev V.L. A multi-agent approach for passenger transportation based on time based reasoning	169
Lokteva M.V., Kravets O.Ja. Computation in data stream systems	172
Seluyanov M.G., Semenova I.I. About the link of the indicators of task solving quality on the basis of data mining with the level assessment accuracy of the information provided.....	177
Author's index	181

Scientific publication

MODERN INFORMATIZATION PROBLEMS

Proceedings of the XIX-th International Open Science Conference

Issue is published in author's edition

Cover designed by Sofia A. Kravets.

Assigned to print 10.01.2014. Format 60x84 1/16.
 CPP 11,3. Order 0000. Circulation 500.

Science Book Publishing House
 17200 153rd Ave SE, Yelm, Washington, 98597 USA
<http://www.sbook.us/>