

<i>Message from the Conference Chairman</i> Professor Vladimir G.Lazarev .....	10
<i>Message from the Conference Chairman</i> Professor Roman M.Karseko .....	11
<i>Words of Welcome from the Chairman of Organizing Committee</i> Professor Anatoly N.Morozevitch .....	12

## Chapter I

### ***Telecommunications and Computer Networks***

<i>Schehrer R.G. (Germany)</i> On Rearrangeable Networks With at Most One Reswitching .....	14
<i>Aldibbiat N. M., Ghassemlooy Z. and McLAughlin R (United Kingdom)</i> Multipath Dispersion in Optical Wireless Networks Employing DH-PIM. ....	22
<i>Khramov A., Kiselev E., Lazarev V. and Lazarev Y. (Russia)</i> Digital Flows Allocation in the Transport Network, Built with SDH .....	27
<i>Charamisinau I. (USA)</i> Frequency Assignment Problem Automation .....	30
<i>Rodionov A., Antyufeev V., Choo H., Youn H.(Russian-Korea)</i> Some Problems Of Soft Handoff Modeling .....	34

## Chapter II

### ***Artificial Intelligence Systems***

<i>Ros Lluis, Creemers Tom, Tourouta Eugeniy and Riera Jordi (Spain-Russia)</i> A Global Constraint Model for Integrated Routeing and Scheduling on a Transmission Network. ....	40
<i>Apolloni B. and Malchiodi D. (Italy)</i> Twisting Statistics with Properties. ....	48
<i>Alguliev R. and Imamverdiev Y. (Azerbaijan)</i> Artificial Intelligence Techniques in Intrusion Detection. ....	57
<i>Nevmerjitskaia G. and Roubashko N. (Belarus)</i> Machine Translation for Kindred Languages .....	65
<i>Danaher M. (Australia)</i> Expert System Development with Kappa-PC. ....	72

## Chapter III

### *Information Technologies in Logic Design*

*Levitin Gr. (Israel)*

Reliability Analysis And Optimization of Multi-State Acyclic Data Transmission Networks . . . . .	80
---------------------------------------------------------------------------------------------------	----

*Busłowska E. (Poland)*

Memory Testing Based on Two-Dimensional Parity . . . . .	88
----------------------------------------------------------	----

*Mrozek I. (Poland)*

Location of Pattern Sensitive Memory Faults . . . . .	92
-------------------------------------------------------	----

*Cheremisinova L. (Belarus)*

Graph Theoretic Algorithm for VLSI Regular Structures Folding. . . . .	98
------------------------------------------------------------------------	----

*Lyulkin A. (Belarus)*

Simulation of CMOS Circuits at the Switch Level Using Logic Programming . . . . .	103
-----------------------------------------------------------------------------------	-----

*Pottosin Yu. and Shestakov E. (Belarus)*

Peculiarity of Graph Coloring in Decomposition of a System of Incompletely Specified Boolean Functions . . . . .	108
------------------------------------------------------------------------------------------------------------------	-----

*Zakrevskij A. and Vasilkova I. (Belarus)*

Graph Coloring: An Exact Algorithm Based on Preliminary Vertex Ordering . . . . .	112
-----------------------------------------------------------------------------------	-----

*Zaitseva E. (Belarus)*

Dynamic Deterministic Reliability Indices . . . . .	117
-----------------------------------------------------	-----

*Cheushev V. and Moraga C. (Belarus-Germany)*

Information Measures To Support Logic Network Synthesis. . . . .	123
------------------------------------------------------------------	-----

*Pieper M. and Kummert A. (Germany)*

FPGA Based Real-Time Image Processing Platform. . . . .	131
---------------------------------------------------------	-----

## Chapter IV

### **Soft Computing: Neural Networks and Fuzzy Logic**

*Dorogov A. and Alekseev A. (Russia)*

Topological Learning of Kernel Neural Networks. . . . .	136
---------------------------------------------------------	-----

*Dymova L., Sevastianov P., Chegerova T. and Sevastianov D. (Belarus)*

Fuzzy-Based Multicriterial Optimization of Economic and Ecological System. . . . .	139
------------------------------------------------------------------------------------	-----

*Krasnoproshin V. and Koushner A. (Belarus)*

Hierarchical Fuzzy Model of Productive System for Decision Making Support Problems. . . . .	143
---------------------------------------------------------------------------------------------	-----

*Lipnickas A. (Lithuania)*

Classifiers Fusion With Data Dependent Aggregation Schemes. . . . .	147
---------------------------------------------------------------------	-----

*Shankar R. and Krishna R.B. (India)*

Solving Optimization Problems: Mean Field Annealing Theory and Hopfield Neural Network	154
----------------------------------------------------------------------------------------	-----

*Stankevicius G. (Lithuania)*

Forming of The Investment Portfolio Using Self Organizing Neural Networks. . . . .	159
------------------------------------------------------------------------------------	-----

## **Chapter V**

### ***Information Technologies and Its Applications***

*Cheremisinov D. and Charamisinau I. (Belarus-USA)*

Data Interoperability In a EMC Simulation Software Tool. . . . . 172

*Turgut B., Aydin N. and Turgut D. (USA)*

SPHERE System. . . . . 177

*Dimova L. and Zhestkova E. (Poland-Belarus)*

A Quality Evaluation Method for Technological and Economic Systems Involving Nonstatistical Uncertainty. . . . . 183

*Matiaško K. (Slovakia)*

Allocation Data Fragments for the Distributed Database. . . . . 189

*Imamutdinov Yu and Asanovich V. (Belarus)*

Creation of Decision Support System on the Bases of Non-Linear Model of the Economy. . . . . 194

*Krips M. and Kummert A. (Germany)*

VLSI Implementation of an Artificial Neural Network for a Real Time Detection Problem. . . . . 199

*Cortes U., Vazquez-Selseda J., Vazquez A., Busquets D., Nicolas M., Lopes. S., Lopez-Navidad A., Caballero F. (Spain)*

Carrel: An Agent Mediated Institution for the Exchange of Human Tissues Among Hospitals for Translation. . . . . 206

*J. Masdemont (Spain)*

Finance Related to Stochastic Behavior and Risk. . . . . 214

*Turgut B., Aydin N. and Turgut D. (USA)*

User Interface Builders: Are They a Good Idea? . . . . . 219

## **Chapter VI**

### ***Mathematical Models and Methods in the Theory of Information Systems***

*Popov S. (Russia)*

Multiresponse Regression Models for Digital Image Processing. . . . . 226

*Erzin A. and Cho J.D. (Russian-Korea)*

The Signal Synchronization Problem in VLSI Design. . . . . 230

*Molaei M.R. and Fekri S. (Iran)*

Dynamical Description of Language. . . . . 236

A Short Information about Belarus State Economic University. . . . .

239

*New Book Announcement.*

Inherently Parallel Algorithms in Feasibility and Optimization and Their Applications . . . . . 244