

## Contents of volume 1

<i>Foreword</i> .....	<i>3</i>
Optimal Control	
<b>Sachkov Yu. L., Ardentov A. A., Mashtakov A. P.</b>	
<i>Constructive solution to control problem via nilpotent approximation method</i> .....	<i>5</i>
<b>Blinov A. O., Gurman V. I., Trushkova E. A., Fralenko V. P.</b>	
<i>Software package of improvement and optimization of control laws</i> .....	<i>25</i>
<b>Morzhin O. V.</b>	
<i>Nonlocal optimization of positional controls for differential systems in borders of the reachable and solvability tubes</i> .....	<i>43</i>
<b>Sachkova E. F.</b>	
<i>Realization and analysis of algorithms for approximate solving the control problem</i> .....	<i>59</i>
System Analysis	
<b>Amelkin S. A.</b>	
<i>Maximum of thermodynamic and economic efficiency of an industrial enterprise</i> .....	<i>77</i>
<b>Akhremenkov A. A., Kazakov I. F., Tsirlin A. M.</b>	
<i>Optimization algorithm for energy markets as macrosystems</i> .....	<i>85</i>
<b>Yumaguzhin V. A., Yumaguzhina V. N.</b>	
<i>Scalar differential invariants of equations <math>y'' = a^3(x, y)y'^3 + a^2(x, y)y'^2 + a^1(x, y)y' + a^0(x, y)</math></i> .....	<i>105</i>
<b>Znamenskij S. V., Amelkin S. A.</b>	
<i>Informational Support of Complex Collaboration</i> .....	<i>123</i>
Intellectual management	
<b>Emelyanova Ju. G., Talalaev A. A., Fralenko V. P., Khachumov V. M.</b>	
<i>Failure detection in space subsystems based on artificial neural networks</i> .....	<i>133</i>
Intellectual Internet-technologies	
<b>Pinzhin A. E.</b>	
<i>Realization of a reasoner based on structural functional models for several types of logical calculus</i> .....	<i>145</i>

System server software and parallel computing systems	
<b>Abramov S. M.</b>	
<i>HPC Researches in the Program Systems Institute of Russian Academy of Sciences: Retrospectives and Perspectives</i> .....	<b>153</b>
<b>Abramov S. M., Zadneprovskiy V. F., Moskovskiy A. A., Shmelev A. B.</b>	
<i>Supercomputers SKIF series 4</i> .....	<b>193</b>
<b>Afonkina E. S., Grishina M. A., Ivshina N. N., Matveev G. A., Potemkin V. A.</b>	
<i>Development and implementation of a parallel version of the algorithm “Biological Substrate Search” (BiS) using the T-System with the open architecture (OpenTS)</i> .....	<b>217</b>
<b>Esin G. I., Kuznetsov A. A., Roganov V. A.</b>	
<i>Fault-tolerant software prototype “SkyTS” for distributed computing of heavy-load T++ applications in heterogeneous distributed environment</i> .....	<b>225</b>
<b>Lisitsa A. P., Nemytykh A. P.</b>	
<i>On one application of computations with oracle</i> .....	<b>245</b>
Socio-ecological-economic systems modeling	
<b>Gordin I. V.</b>	
<i>Society computerisation as the factor of the solution of ecological contradictions</i> .....	<b>265</b>
<b>Gordin I. V.</b>	
<i>Uncontrolled and unidentified pollution — key categories of ecological computer science</i> .....	<b>277</b>
<i>Author index</i> .....	<b>299</b>
<i>Author index (in Russian)</i> .....	<b>305</b>
<i>Contents of volume 1 (in Russian)</i> .....	<b>315</b>
<i>Contents of volume 2</i> .....	<b>317</b>
<i>Contents of volume 2 (in Russian)</i> .....	<b>319</b>