



**I T H E A**



**International Journal**

**INFORMATION THEORIES  
&  
APPLICATIONS**



**2005 Volume 12 Number 4**



**International Journal**  
**INFORMATION THEORIES & APPLICATIONS**  
 ISSN 1310-0513  
 Volume 12 / 2005, Number 4

Editor in chief: **Krassimir Markov** (Bulgaria)

**International Editorial Staff**

Chairman: **Victor Gladun** (Ukraine)

<b>Adil Timofeev</b>	(Russia)	<b>Larissa Zainutdinova</b>	(Russia)
<b>Alexander Eremeev</b>	(Russia)	<b>Levon Aslanian</b>	(Armenia)
<b>Alexander Kleshchev</b>	(Russia)	<b>Luis F. de Mingo</b>	(Spain)
<b>Alexander Kuzemin</b>	(Ukraine)	<b>Martin P. Mintchev</b>	(Canada)
<b>Alexander Palagin</b>	(Ukraine)	<b>Milena Dobрева</b>	(Bulgaria)
<b>Alexey Voloshin</b>	(Ukraine)	<b>Laura Ciocoiu</b>	(Romania)
<b>Alfredo Milani</b>	(Italy)	<b>Natalia Ivanova</b>	(Russia)
<b>Anatoliy Shevchenko</b>	(Ukraine)	<b>Neonila Vashchenko</b>	(Ukraine)
<b>Arkadij Zakrevskij</b>	(Belarus)	<b>Nikolay Zagorujko</b>	(Russia)
<b>Avram Eskenazi</b>	(Bulgaria)	<b>Petar Barnev</b>	(Bulgaria)
<b>Boicho Kokinov</b>	(Bulgaria)	<b>Peter Stanchev</b>	(Bulgaria)
<b>Constantine Gaidric</b>	(Moldavia)	<b>Plamen Mateev</b>	(Bulgaria)
<b>Eugenia Velikova-Bandova</b>	(Bulgaria)	<b>Radoslav Pavlov</b>	(Bulgaria)
<b>Frank Brown</b>	(USA)	<b>Rumyana Kirkova</b>	(Bulgaria)
<b>Galina Rybina</b>	(Russia)	<b>Stefan Dodunekov</b>	(Bulgaria)
<b>Georgi Gluhchev</b>	(Bulgaria)	<b>Tatyana Gavrilova</b>	(Russia)
<b>Ilija Mitov</b>	(Bulgaria)	<b>Valery Koval</b>	(Ukraine)
<b>Jan Vorachek</b>	(Finland)	<b>Vasil Sgurev</b>	(Bulgaria)
<b>Juan Castellanos</b>	(Spain)	<b>Vitaliy Lozovskiy</b>	(Ukraine)
<b>Koen Vanhoof</b>	(Belgium)	<b>Vladimir Jotsov</b>	(Bulgaria)
<b>Krassimira Ivanova</b>	(Bulgaria)	<b>Zinoviy Rabinovich</b>	(Ukraine)

IJ ITA is official publisher of the scientific papers of the members of  
 the Association of Developers and Users of Intellectualized Systems (ADUIS).

IJ ITA welcomes scientific papers connected with any information theory or its application.  
 Original and non-standard ideas will be published with preferences.

IJ ITA rules for preparing the manuscripts are compulsory.

The rules for the papers for IJ ITA as well as the subscription fees are given on [www.foibg.com/ijita](http://www.foibg.com/ijita).

The camera-ready copy of the paper should be received by e-mail: [foi@nlcv.net](mailto:foi@nlcv.net).

Responsibility for papers published in IJ ITA belongs to authors.

General Sponsor of IJ ITA is the Consortium FOI Bulgaria ([www.foibg.com](http://www.foibg.com)).

International Journal "INFORMATION THEORIES & APPLICATIONS" Vol.12, Number 4, 2005  
 Printed in Bulgaria

Edited by the Institute of Information Theories and Applications FOI ITHEA, Bulgaria,  
 in collaboration with the V.M.Glushkov Institute of Cybernetics of NAS, Ukraine, and  
 the Institute of Mathematics and Informatics, BAS, Bulgaria.

Publisher: FOI-COMMERCE - Sofia, 1000, P.O.B. 775, Bulgaria. [www.foibg.com](http://www.foibg.com), e-mail: [foi@nlcv.net](mailto:foi@nlcv.net)

© "Information Theories and Applications" is a trademark of Krassimir Markov

Copyright © 1993-2005 FOI-COMMERCE, Publisher

Copyright © 2005 For all authors in the issue.

All rights reserved.

ISSN 1310-0513