Lecture Series on Computer and Computational Sciences
Editor-in-Chief and Founder: Theodore E. Simos

Volume 4B

Advances in Computational Methods in Sciences and Engineering 2005

Selected Papers from the International Conference of Computational Methods in Sciences and Engineering 2005 (ICCMSE 2005)

Recognised Conference by the European Society of Computational Methods in Sciences and Engineering (ESCMSE)

Editors:

Theodore Simos and George Maroulis
O. I. Obolensky, I. A. Solov'yov, A. V. Solov'yov, W. Greiner

Determination of Atomic Cluster Structure with Cluster Fusion Algorithm

Michael Springborg, Valeri G. Grigoryan Yi Dong, Denisa Alamanova, Habib ur Rehman, and Violina Tevekelyska

Structural and Electronic Properties of Metal Clusters

Chih-Young Hung

Symposium

Computational Economics and Data Analysis

Wen-Han Tang, Jia-Ren Yang, Hua-Kai Chiou

Multiple Objective Compromise Optimization Method to Analyze the Development Strategies of Nanotechnology in Taiwan

Chih-Young Hung, Yi-Hui Chiang

Using Fuzzy MCDM Approach on A/R Collection Instruments selection in Taiwan’s Hsinchu Science Park

Hsun-Jung Cho, Yuh-Ting Wu

Microscopic Analysis of Desired-Speed Car-Following Phenomena

Terry Friesz, Hsun-Jung Cho, Pei-Ting Yeh

Estimating O/D Matrix from Traffic Count with Network Sensitivity Information

Yow-Jen Jou, Chien-Lun Lan

User-Oriented Travel Time Prediction Using Grey System and Real-time Vehicle Detector Data

T. E. Simos

Preface of the Symposium : Stochastic Computational Techniques in Engineering and Sciences

M. M. Kamiński

Generalized Stochastic Perturbation Technique in Engineering Computations

Ł. Figiel and M. Kamiński

Deterministic and Probabilistic Sensitivity Analysis of Fatigue Fracture Model Parameters for a Curved Two Layer Composite

M. Gall and R. Kutner

Simulation of the Carnot Engine in the Frame of Statistical Mechanics

Li Zhong-wen, Yu Shui
Research on Fault Tolerance Schemes Based on Energy-Aware

Yiming Li

L. Cherfi

Lyapunov Type Algorithm for Coupled Riccati Equations in MCV Problem

Hsun-Jung Cho, Tsu-Tian Lee and Heng Huang

A Circuit Simulation Technique for Network Assignment Problem

D. Ntalaperas, K. Theodoropoulos, N. Konofaos, A. N. Tsakalidis

A Four Base Computational method for the Implementation of a Quantum Computer using Silicon Devices: Circuit and Simulation

David Bernstein, Chien-Lun Lan

Parallel Implementation of Dynamic Origin-Destination Calculation on a PC-based Linux Cluster

Yiming Li and Hung-Mu Chou

Hybrid Evolutionary Approach to Optimal Design of CMOS LNA Integrated Circuits

Yow-Jen Jou, Ming-Te Tseng

Statistical Queuing-Length Approach to System-on-Chip Signal Control

L. Cherfi

A Mixed Riccati-Lyapunov Algorithm for Coupled Algebraic Riccati Equations in MCV Problems

L. Cherfi

Numerical Algorithms for Solving Coupled Algebraic Riccati Equations

Shao-Ming Yu, Hung-Mu Chou and Shih-Ching Lo

Parallel Simulation of Deep Sub-Micron Double-Gate Metal-Oxide-Semiconductor Field Effect Transistors

M. Riad Manaa

Preface to Symposium: Matter at Extreme Conditions: Theory and Application

Adri van Duin, Sergey Zybin, Kim Chenoweth, Si-Ping Han, William A. Goddard III

Reactive Force Fields based on Quantum Mechanics for Applications to Materials at Extreme Conditions

Evan J. Reed, Marin Soljačić, J. D. Joannopoulos
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversed and Anomalous Doppler Effects in Shocked Periodic Media</td>
<td>S. Hu, D. Vrinceanu, L. Collins, B. Schneider</td>
<td>1118-1121</td>
</tr>
<tr>
<td>Computational Techniques for Probing Matter at Extreme Conditions</td>
<td>S. A. Bonev, E. Schwegler, T. Ogitsu and G. Galli</td>
<td>1122-1125</td>
</tr>
<tr>
<td>Ab initio Studies of Phase Transitions and Metallization of Compressed Hydrogen</td>
<td>N. Goldman and L. E. Fried</td>
<td>1126-1129</td>
</tr>
<tr>
<td>Water Under the Extreme Conditions of Planetary Interiors: Symmetric Hydrogen Bonding in the Superionic Phase</td>
<td>C. T. White and D. R. Swanson, M. L. Elert</td>
<td>1130-1133</td>
</tr>
<tr>
<td>Extreme Chemistry at the Nanoscale in Detonation Simulations</td>
<td>M. L. Elert, S. V. Zybin, C. T. White</td>
<td>1134-1137</td>
</tr>
<tr>
<td>Reactive Molecular Dynamics Simulations of Shock-Induced Chemistry in Hydrocarbons</td>
<td>Timothy C. Germann, Brad Lee Holian, Kai Kadau, and Peter S. Lomdahl</td>
<td>1138-1141</td>
</tr>
<tr>
<td>Multibillion-Atom Molecular Dynamics Simulations of Shockwave Phenomena on BlueGene/L</td>
<td>Md. Ranaul Islam and Ulf Saalmann</td>
<td>1142-1145</td>
</tr>
<tr>
<td>Microscopic Dynamics of Atomic Clusters in Strong Laser Pulses</td>
<td>Benoit Champagne and Masayoshi Nakano</td>
<td>1146-1147</td>
</tr>
<tr>
<td>Open-shell organic molecules Electric, optical, and magnetic properties</td>
<td>Edith Botek, Milena Spassova, and Benoit Champagne</td>
<td>1148-1151</td>
</tr>
<tr>
<td>Hyper-Rayleigh Scattering of Neutral and Charged Helicenes</td>
<td>Paul M. Lahti</td>
<td>1152-1154</td>
</tr>
</tbody>
</table>
S. Yamanaka, K. Nakata, T. Takada, M. Nakano and K. Yamaguchi

Iterative CASCI-DFT for excited states

Hideaki Takahashi, Hajime Ohno, Ryohei Kishi, Suguru Ohta, Shin-ichi Furukawa, Masayoshi Nakano

Free Energy Calculation for the Reaction that Proceeds via Singlet Biradical Transition State: Dehydration Reaction of Alcohol in Hot Water

Reactivity descriptors: Conceptual and Computational Developments

Paul W. Ayers

Some Problems Related to Electronegativity Equalization

P. Bultinck

The Electronegativity Equalization Method and its application in Computational Medicinal Chemistry

K. R. S. Chandrakumar, Sourav Pal

The Influence of Electric Field on the Global and Local Reactivity Descriptors: Reactivity and Stability of the weakly Bonded Complexes

Abhijit Chatterjee

Application of the Reactivity Index to Propose Intra and Intermolecular Reactivity in Catalytic Materials

P. Geerlings, P. W. Ayers, F. De Proft

Chemical Reactivity and the Shape Function

T. Mineva

Density functional reactivity indices in orbital and atomic resolutions related to the selectivity and site-reactivity

Ram Kinkar Roy

Acetalization and Thioacetalization of Benzaldehyde and Substituted Benzaldehydes: A Case Study Based on Global and Local Electrophilicity Descriptors

Alejandro Toro-Labbé

Reaction Force. A Key Concept to Characterize Reaction Mechanisms

Ajit J. Thakkar

Symposium on Electron Densities and Density Functionals

Federico E. Zahariev and Yan Alexander Wang

Extension of the Universal Density Functional to the Domain of Unnormalized Densities
Table of Contents

J. C. Angulo

The Reciprocal Form Factor of Many-Electron Systems

N. A. Besley

Intracules in Phase Space

P. M. W. Gill

Two-Electron Reductions of Many-Electron Wavefunctions

I. Porras

A simple Semi-Explicit Density Functional Approach for Electron Systems

Gustavo E. Scuseria and Jochen Heyd

New Density Functionals Applied to Old Problems

Eduardo V. Ludeña, Xabier Lopez, Jesus M. Ugalde

Pair densities for the Hooke and Hooke - Calogero models of the non-Böhrn-Oppenheimer hydrogen molecule

C. Valdemoro, L. M. Tel, E. Pérez-Romero

A New G-matrix Dependent Energy Expression for Singlet States: a Possible Variational Application

Paul W. Ayers

Using the Electron Density as a Weight Function for Multi-Dimensional Integration

R. F. W. Bader

Topology of the Positive Definite Kinetic Energy Density and its Physical Consequences

A. D. Becke and E. R. Johnson

Dipole Moment Density of the Exchange Hole

Pierre BECKER, Jean Michel GILLET, Blandine COURCOT

Electron densities and reduced density matrix: a crucial information from steady states to reacting systems

P. Bultinck, R. Carbó-Dorca, R. Ponec

Generalized Population Analysis and Molecular Quantum Similarity for Molecular Aromaticity

F. De Proft, P. Geerlings and E. Chamorro

The Nuclear Fukui Function: Generalization within Spin-polarized Conceptual Density Functional Theory
F. Jensen

Polarization Consistent Basis Sets

Chérif F. Matta, Norberto Castillo, and Russell J. Boyd

An Electron Density Study of the Characterization of Extended Weak Bonding in DNA: B-Stacking (Base-Base), Base-Backbone, and Backbone-Backbone Interactions

P. Popelier, M. Rafat, M. Devereux, S. Liem and M. Leslie

Towards a Force Field via Quantum Chemical Topology

A. C. Tanner

Compton Scattering from 1897 to 1987: The Accidental Bibliography

Andrew M. Teale and David J. Tozer

Exchange methods in Kohn-Sham theory

Weitao Yang


Dimitrios D. Thomakos

Advances in Financial Forecasting

G. Baiocchi, V. Corradi, W. Distaso

Profitability of Conditional vs. Unconditional Momentum Based Trading Rules

Sergio Bianchi and Augusto Pianese

Reconciling Multifractal and Multifractional Processes in Financial Modeling

Ai Deng

Return Predictability: A Multi-resolution Analysis

M. Genton, M. Hagmann, O. Scaillet

A Quantile Estimator with Parametric and Nonparametric Features

Michael P. Clements, Ana Beatriz C. Galvão, Jae H. Kim

Interval Forecasting of Daily Exchange Rate Returns using Realised Volatility

Michail Koubovos and Dimitrios Thomakos

Realized Risk and Return: Relationships and Asymmetries in US Size and Value Portfolios

J. M. Matias, M. Febrero, W. González-Manteiga, J. C. Reboredo
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boosting GARCH and Neural Networks for Time Series Prediction</td>
<td>T. Morimoto, Y. Kawasaki</td>
<td>1299-1302</td>
</tr>
<tr>
<td>An Empirical Comparison of GARCH Models Based on Intraday Value at Risk</td>
<td>George A. Papanastasopoulos</td>
<td>1303-1306</td>
</tr>
<tr>
<td>Using Option Theory and Fundamentals to Assessing Default Risk of Listed Firms</td>
<td>Olivier Scaillet &amp; Nikolas Topaloglou</td>
<td>1307-1310</td>
</tr>
<tr>
<td>Testing for Stochastic Dominance Efficiency</td>
<td>Abdelwahed Trabelsi and Wejda Ochi</td>
<td>1311-1312</td>
</tr>
<tr>
<td>An Investigation of the Lead-Lag Relationship in Returns and Volatility between Cash and Stock Index Futures: the case of the CAC40 Index</td>
<td>C. E. Vorlow</td>
<td>1313-1313</td>
</tr>
<tr>
<td>Nonlinear Dynamical Signatures in Volume-Price Dynamics</td>
<td>Timotheos Angelidis, Nikolaos Tesseromatis</td>
<td>1314-1319</td>
</tr>
<tr>
<td>Convergence of Cost of Capital in the European Union</td>
<td>R. Batchelor and N. Nitsas</td>
<td>1325-1328</td>
</tr>
<tr>
<td>A Recursive Bootstrap Evaluation of Moving Average Trading Rules</td>
<td>George Filis, Costas Leon</td>
<td>1329-1331</td>
</tr>
<tr>
<td>Interactions Between Options and Stocks Within a VAR Framework: Evidence from Greece</td>
<td>Dr. Fotios C. Harmantzis, Angelo G. Christides</td>
<td>1332-1335</td>
</tr>
<tr>
<td>Bankruptcy Prediction for US Telecoms: Capital Expenditure and Profitability Effects</td>
<td>Kin-Yip Ho</td>
<td>1336-1336</td>
</tr>
<tr>
<td>The No Arbitrage Condition in Option Implied Trees: Evidence from the Italian Index Options Market</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ekaterini Panopoulou

The Predictive Content of Financial Variables: Evidence from the Euro Area

Aristeidis G. Samitas, Dimitris F. Kenourgios

Modelling Macroeconomic Effects in Central Eastern Economies Stock Returns

V. Skintzi, S. Xanthopoulos

Evaluation of Correlation Forecasting Models for Risk Management

Yasemin Ulu

Optimal Prediction under Linlin Loss: Empirical Evidence

Prof. Athanasios Tsakalidis, Assist. Prof. Christos Makris

Symposium : Computational Methods in Molecular Biology: Algorithms, Applications and Tools

L.B. Drossos H. Isliker T.C. Bountis S.Parthasarathy

Chaotic Dynamics in a Tryptophan Repressible Operon Model

Panagiotis Kouretas, Konstantinos Koutroumpas and John Legouras

Parameter Identification of Biological System Models Based on Genetic Algorithms

E. Broclawik, S. Abdul Rajjak, M. Ismael, H. Tsuboi, M. Kayama, M. Kubo, C. A. Del Carpio and A. Miyamoto

Metabolism of arene substrates on iron site in cytochrome P450: Quantum chemical DFT modeling

F.E. Psomopoulos and P.A. Mitkas

A protein classification engine based on stochastic finite state automata

C. Makris, S. Sioutas, E. Theodoridis, K. Tsichlas, A. Bakalis

Finding Multirepeats in a Set of Strings

Georgios Vlachopoulos, Athanasios Papakyriakou, George Dalkas, Georgios A. Spyroulias1, Paul Cordopatis

In silico evaluation of bioactive compounds: Docking Simulations based Enzyme-Inhibitor Interaction compared with X-ray models.

S. Zimeras

Simulation of nuclei cells images using spatial point pattern models

G. Anogianakis, A. Anogeianaki, K. Perdikuri, A. Tsakalidis, N. Kozeis

Exploring the Way Synonymous Codons Affect the Distribution of Naturally Occurring Amino Acids
<table>
<thead>
<tr>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. George D. Verros</td>
<td>1396-1396</td>
</tr>
<tr>
<td>Computational Methods In Chemical Engineering</td>
<td></td>
</tr>
<tr>
<td>V. P. Fragos, S. P. Psychoudaki, and N. A. Malamataris</td>
<td>1397-1404</td>
</tr>
<tr>
<td>Determination of Chaos in the Direct Simulation of Two Dimensional Turbulent Flow over a Surface Mounted Obstacle</td>
<td>1405-1408</td>
</tr>
<tr>
<td>S.L.Gargh and Alok Agrawal</td>
<td></td>
</tr>
<tr>
<td>QSAR and CADD studies in reference to Phenol</td>
<td>1409-1412</td>
</tr>
<tr>
<td>G. Pantoleontos, S. P. Kaldis, D. Koutsonikolas, G. Skodras and G. P. Sakellaropoulos</td>
<td></td>
</tr>
<tr>
<td>A Computational Approach to Mass Transfer in Hollow Fiber Membrane Contactors with Linear and Nonlinear Boundary Conditions</td>
<td>1413-1415</td>
</tr>
<tr>
<td>M.N. Vrahatis, G.D. Magoulas</td>
<td></td>
</tr>
<tr>
<td>Computational Approaches to Artificial Intelligence: Theory, Methods, Applications</td>
<td>1416-1419</td>
</tr>
<tr>
<td>N.G. Pavlidis, D.K. Tasoulis, V.P. Plagianakos, C. Siriopoulos and M.N. Vrahatis</td>
<td></td>
</tr>
<tr>
<td>Computational Intelligence Methods for Financial Forecasting</td>
<td>1420-1423</td>
</tr>
<tr>
<td>Y.G. Petalas, E.I. Papageorgiou, K.E. Parsopoulos, P.P. Groumpos, and M.N. Vrahatis</td>
<td></td>
</tr>
<tr>
<td>Fuzzy Cognitive Maps Learning using Memetic Algorithms</td>
<td>1424-1427</td>
</tr>
<tr>
<td>A.V. Adamopoulos, N.G. Pavlidis and M.N. Vrahatis</td>
<td></td>
</tr>
<tr>
<td>Genetic Algorithm Evolution of Cellular Automata Rules for Complex Binary Sequence Prediction</td>
<td>1428-1431</td>
</tr>
<tr>
<td>D.K. Tasoulis, L. Drossos and M.N. Vrahatis</td>
<td></td>
</tr>
<tr>
<td>Unsupervised Clustering under Parallel and Distributed Computing Environments</td>
<td>1432-1435</td>
</tr>
<tr>
<td>M.N. Vrahatis, G.A. Tsirogiannis, E.C. Laskari</td>
<td></td>
</tr>
<tr>
<td>New Orbit Based Symmetric Cryptosystem</td>
<td>1436-1441</td>
</tr>
<tr>
<td>Optimal Rural Water Distribution Design using Labye's Optimization Method and Linear Programming Optimization Method</td>
<td>1445-1449</td>
</tr>
<tr>
<td>T.A. Wesolowski</td>
<td></td>
</tr>
<tr>
<td>Preface to the Symposium: Explicit Density Functional of the Kinetic Energy in Computer Simulations at Atomistic Level</td>
<td></td>
</tr>
</tbody>
</table>
J. A. Alonso

Simulation of the Melting of Metallic Clusters Using Orbital-Free Kinetic Energy Functionals

P. Cortona

Density-Functional Theory Calculations without Wave Functions: The Structural Properties of Ionic Solids

Baojing Zhou and Yan Alexander Wang

Recovering Orbital Information from Orbital-Free Density Functional Theory

D. Garcia-Aldea and J. E. Alvarellos

A Study of Kinetic Energy Density Functionals: a New Proposal

Aristides D. Zdetsis

Symposium on “Semiconductor Nanocrystals and Nanoclusters”

A. D. Zdetsis and C. S. Garoufalis

Optical Gap and Excitation Energies of Small Ge Nanocrystals

X. Zianni and A. G. Nassiopoulou

Electron Behavior in Si nanocrystals

A. D. Zdetsis and N. C. Bacalis

Properties of Silicon Nanocrystals via A Transferable Tight-Binding Hamiltonian, Based on Ab-Initio Results

A. Mavrandonakis, M. Mühlhäuser, M. Menon, A.N. Andriotis and G. E. Froudakis

An ab initio Study of the Structure and Stability of Silicon – Carbon Nanotubes

C. S. Garoufalis and A. D. Zdetsis

Optical Properties of Oxygen Contaminated Si Nanocrystals

A. D. Zdetsis, C. S. Garoufalis and E.N. Koukaras

Optical and Electronic Properties of Mixed SiGe:H Nanocrystals

E. N. Koukaras, C. S. Garoufalis and A.D. Zdetsis

Structural and Electronic Properties of the Ni@Si$_{12}$ Nanocluster

Margret Gruber-Stadler, Max Mühlhäuser, Claus J. Nielsen

Ab initio MRD-CI Investigation of the Electronic Spectrum of Glyoxal (CHO)$_2$

Andreas F. Terzis, Antonios Fountoulakis and Emmanuel Paspalakis

Effects of Fluctuating Electric Fields in the Dynamics of a Two-Electron Quantum Dot Molecule
X. Zianni, E. Tiktopoulou, A. Rigas, S. Tsitmidelis, C. Evmoropoulos

Electron Tunneling Through Si Nanocrystals

Jiawan Zhang


Yuan Luo, Marina L. Gavrilova, Mario C. Sousa, Juraj Pivovarov and Svetlana Yanushkevich

Morphing Facial Expressions from Artistic Drawings

Xiaolin Lu

Constructing Smooth Connecting Surfaces with High Order Geometry Continuity for Polyhedron Corner Rendering

Quanyu Wang, Jiaping Hao, Bo Yan

Research of Modeling in the COMPUROBOT Platform

Qin Zheng, Wang Lei, Zou Jian-jun

Vectors Based Fault-Tolerant Routing in Hypercube Multi-computers

Tae-Dong Lee, and Chang-Sung Jeong

Real-time Visualization for Distributed Military Application on RTI-G (RunTime Infrastructure on Grid)

S. Zimeras and G. Karangelis

An Efficient 3D Shape Reconstruction Technique for CT Images Using Volume Definition Tools

Jiawan Zhang, Yi Zhang, Jizhou Sun

An Accelerated Ray Casting Algorithm Using Segment Composition

Dai Wenjun, Wu Gangshan, Zhang Fuyan

3D Model Retrieval Based on Volume Distribution

Sonja Nikolić

Minisymposium QSAR and QSPR Modeling Introductory Remarks

C. Duce, A. Micheli, R. Solaro, A. Starita, M. R. Tiné

Recursive Neural Networks for Quantitative Structure Property Relationship Analysis of Polymers.

S.C. Basak, B.D. Gute, D.M. Hawkins

A Comparative Study of Arbitrary Versus Tailored Molecular Similarity Metrics in Property / Toxicity / Bioactivity Prediction
D. G. Bonchev

The Overall Topological Complexity Indices

R. Bruce King

Graph Theory and Structure-Aromaticity Relationships

Hariu Hosoya

Back-of-Envelope Prediction of Aromaticity of Non Benzenoid Conjugated Hydrocarbons

M. Medic-Saric, A. Mornar, V. Rastija, I. Jasprica and S. Nikolić

Molecular Modeling of Polyphenols from Croatian Wines

Damir Nadramija, Bono Lučič

Nonlinear Multivariate Polynomial Ensembles in QSAR/QSPR

I.G. Zenkevich

Simple Approximation of Any Constants of Homologues Using Single Recurrent Function

Kunal Roy and Indrani Sanyal

QSTR with Extended Topochemical Atom Indices. 7. QSAR of Substituted Benzenes to Saccharomyces cerevisiae

G. Restrepo, E. J. Llanos and A. Bernal

A Novel Method for Selecting Clusters in Cluster Analysis

Valentin Vankov Iliev

A Short Survey of Lunn-Senior’s Model of Isomerism in Organic Chemistry

D. Janežič, M. Penca, K. Poljanec, M. Hodošček

Computer Simulation Studies of Molecular Systems and their Reactions

Tai-hoon Kim

Approaches and Methods of Security Engineering

Kwanghoon Kim, Changmin Kim


Jong-Hyok Lee and Tai-Mysung Chung

Correlation Analysis System using VA data, IDS alerts

A.S. Anagun

A Multilayered Neural Network Based Computer Access Security System: Effects of Training Algorithms
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Load Generated Impulse Noise Cancellation Method for Home Power Line Communication Networks</td>
<td>Jae-Sang Cha, Myong-Chul Shin, Kyungseok Kim</td>
<td>1608-1612</td>
</tr>
<tr>
<td>Home Security System in a Web-based Networking Environment</td>
<td>Kyung-Bae Chang, Jae-woo Kim, Il-Joo Shim, and Gwi-Tae Park</td>
<td>1613-1616</td>
</tr>
<tr>
<td>Integration and Control of Building System using Embedded Web Server and Wireless LAN</td>
<td>Kyung-Bae Chang, Tae-Kook Kim, Il-Joo Shim, and Gwi-Tae Park</td>
<td>1617-1620</td>
</tr>
<tr>
<td>Software Audit System for Ubiquitous Computing</td>
<td>Sung-Hoon Cho, Chang-Bok Jang, Moo-Hun Lee, Eui-In Choi</td>
<td>1625-1629</td>
</tr>
<tr>
<td>Rule-based System for Vulnerability Detection of Software</td>
<td>Young-Mee Choi, Moon Won Choi</td>
<td>1630-1633</td>
</tr>
<tr>
<td>Adaptive Bayesian student model for educational games</td>
<td>Gou Jin, Yang Jiangang, Chen Qian</td>
<td>1634-1638</td>
</tr>
<tr>
<td>A Knowledge Fusion Based Intrusion Detection Model</td>
<td>Ho-Seon Hwang, Tae-Jin Hwang, Juphil Cho</td>
<td>1639-1642</td>
</tr>
<tr>
<td>An Efficient STBC-AFDE using a LS-Initialization for Wireless Network</td>
<td>Ho-Seon Hwang, Sang-Soon Park, Juphil Cho</td>
<td>1643-1647</td>
</tr>
<tr>
<td>MIMO STBC SC-FDE based on LS-Algorithm for Ubiquitous</td>
<td>Chang-Bok Jang, Moo-Hun Lee, Sung-Hoon Cho, Eui-In Choi</td>
<td>1648-1652</td>
</tr>
<tr>
<td>ANCS Technique for Replacement and Security of Execution Code on Active Network Environment</td>
<td>Jang Mook, Kang</td>
<td>1653-1658</td>
</tr>
<tr>
<td>A Study on CVMP (Competing Values Model about Privacy) in Ubiquitous Computing Environment</td>
<td>Myung-Hee Kang, Hwang-Bin Ryoo</td>
<td>1659-1661</td>
</tr>
<tr>
<td>An Authentication Mechanism using HMAC-based Security Association Token for Smart Space</td>
<td></td>
<td>1662-1665</td>
</tr>
</tbody>
</table>
Sukhoon Kang

A Covert Channel-Free Validation Algorithm Using Timestamp Order for Multilevel-Secure Optimistic Concurrency Control

Hak-Man Kim, Jea-Sang Cha, Myong-Chul Shin

A Genetic Approach to LQR Design for Thyristor Controlled Series Compensation Application in Power Grid Network

KyungSeok Kim and Jae-Sang Cha

Enhanced Blind MVDR Beamforming Implementation Using Real Toeplitz-Plus-Hankel Approximation Scheme

Seoksoo Kim

Design of POS System Using the XML-Encryption

Seoksoo Kim

A Study on High Speed Networking and Distributed Security System

Tai-hoon Kim, Haeng-kon Kim, Sun-myoung Hwang

Block Model for Categorizing IT Systems Security

Yoon-ho Kim, Byeoung-min Youn, Heau-jo Kang

Incorporating HVS Parameter into the Transform-based Watermarking

Hoon Ko, Uijin Jang, Seonho Kim

A Study on Safe Authentication Processing in MIPv6 Multicast

A.H. Koltuksuz

On Defining Security Metrics for Information Systems

Han-Seung Koo, Il-kyoo Lee, Sung-Woong Ra, Jae-sang Cha, and Kyung-sub Kwak

An Active Key Management Scheme for Conditional Access System on Digital TV Broadcasting System

Deok-Gyu Lee, Im-Yeong Lee

An Efficient and Secure Traitor Tracing Method for T-Commerce

Il-kyoo Lee, Han-Seung Koo, Sung-Woong Ra, Jae-sang Cha, Jae-Myung Kim, and Bub-joo Kang

An Efficient Scheme of Extra Refreshment Management for CA System in DTV Broadcasting

Jong-Joo Lee, Myong-Chul Shin, Seung-youn Lee, Sang-yule Choi, Hak-man Kim, Heeseok Suh, Jae-Sang Cha

The Echo Channel Modeling & Estimation Method for Power Line Communication Networks
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution Antenna Diversity System according to Adaptive Correlation method for OFDM-DS/CDMA in a Frequency Selective Fading Channel</td>
<td>Kyesan LEE, Een Kee HONG</td>
<td>1727-1732</td>
</tr>
<tr>
<td>Instruction Level Tampering Detection Technique using Error Detection Code for Embedded Systems</td>
<td>Seung Wook Lee and Jong Tae Kim</td>
<td>1733-1736</td>
</tr>
<tr>
<td>Cryptanalysis of New Proxy Blind Signature Scheme with Warrant</td>
<td>Li Zhongwen</td>
<td>1741-1744</td>
</tr>
<tr>
<td>Security and Safety Architectural framework of Distributed Systems</td>
<td>F. Omary, A. Tragha, A. Bellaachia, A. Lbekkouri, A. Mouloudi</td>
<td>1745-1748</td>
</tr>
<tr>
<td>An Evolutionist Algorithm to Cryptography</td>
<td>Sang-Soon Park, Ho-Seon Hwang and Juphil Cho</td>
<td>1751-1755</td>
</tr>
<tr>
<td>Spreading SFBC-OFDM Transmission Scheme for Wireless Mobile Environment</td>
<td>Hee-Un Park</td>
<td>1757-1761</td>
</tr>
<tr>
<td>Crypto-Cert Digital Signature Mechanism</td>
<td>W. J. Wang, S. M. Wang, Z. Chen, Z.L.Liu</td>
<td>1762-1765</td>
</tr>
<tr>
<td>An Eavesdropping-Proof Identification Method For RFID Tags</td>
<td>P. Alonso, R. Cortina, I. Diaz, J. Ranilla</td>
<td>1770-1773</td>
</tr>
<tr>
<td>Blocking Neville Elimination Algorithm for Exploiting Cache Memories</td>
<td>J. Dobšíš, S. Pták, V. Vondrák, Z. Dostál</td>
<td>1774-1777</td>
</tr>
<tr>
<td>Contact between Solids with Geometric and Material Non-linearities by FETI Domain Decomposition Method</td>
<td>J. Cabarro-Arpa</td>
<td>1778-1781</td>
</tr>
<tr>
<td>Combinatorial Determination of the Volume Spanned by a Molecular System in Conformational Space.</td>
<td>T. Šedivecová, J. Fíšer, V. Špirko</td>
<td>1782-1785</td>
</tr>
<tr>
<td>Computed lifetimes of metastable states of CO$_2^+$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
J. Avellar, L.G.S. Duarte, S.E.S. Duarte, L.A.C.P. da Mota

An Algebraic Analysis of Integrability of Second Order Ordinary Differential Equations

ByungRae Cha

The Integrated Bayesian Framework based on Graphics for Behavior Profiling of Anomaly Intrusion Detection

O. Coulaud, P. Fortin and J. Roman

High-performance BLAS formulation of the Adaptive Fast Multipole Method

S.W. Fong, E. Klaseboer, C.K. Turangan, K.C. Hung, B.C. Khoo

Bubble Dynamics near Biomaterials in an Ultrasound Field - A Numerical Analysis using Boundary Element Method

Cheng Heming, Xie Jianbin, Li Jianyun

Application of Rational Approximate Method in Numerical Simulation of Temperature Field of 9SiCr Alloy Steel with Non-linear Surface Heat-Transfer Coefficients During Gas Quenching

Lijun HOU, Heming CHENG, Jianyun LI

Comparison of Surface Heat-transfer Coefficient of T10 Steel Quenched by Different Quenching Media

Sándor Kunsági-Máté, Carsten Schür, Eszter Végh, Tamas Marek, Horst P. Strunk

A Dynamic Microscopic Model for the Formation of Excess Arsenic in GaAs Layers During Growth at Low Temperature

Sándor Kunsági-Máté, Carsten Schür, Nikolett Szalay, Tamas Marek, Horst P. Strunk

Dynamics of As Atoms in the Reconstruction Layer of the As-rich GaAs(001) c(4x4) Surface

Jianyun LI, Heming CHENG, Lijun HOU

Calculation of the Surface Heat-transfer Coefficients of W18Cr4V Steel during High Velocity Gas Quenching

Jim Wielaard and Paul Sajda

Large-Scale Simulation of the Visual Cortex: Classical and Extraclassical Phenomena

Hsiao-Ching Yang, Tien-Yau Luh, Cheng-Lung Chen

Multiscale Simulation of the Mushroom-Shaped Nanoscale Supramolecular System: From Self-assembly Process to Functional Properties

Y. Teshima, K. Kase, and A. Makinouchi

Cutting Segments Configuration in Square Cutting
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Molecular Dynamics Study of the Interaction-Induced Effects on the Far-Infrared and Infrared Spectrum of HCl Dissolved in CCl₄</td>
<td>Georgios Chatzis and Jannis Samios</td>
<td>1836-1841</td>
</tr>
<tr>
<td>Axisymmetric Stagnation – Point Flow of a Viscous Fluid On a Rotating Cylinder with Time-dependent Angular Velocity and Uniform Transpiration</td>
<td>A. Baradaran Rahimi, R. Saleh</td>
<td>1842-1848</td>
</tr>
<tr>
<td>Unsteady Free Convection From a Sphere in A Porous Medium with Variable Temperature</td>
<td>Jalal Talebi, Asghar Baradaran Rahimi</td>
<td>1849-1855</td>
</tr>
<tr>
<td>The Comparisons of Heart Rate Variability and Perceived Exertion during Simulated Cycling with Various Viewing Devices</td>
<td>Tien-Yow Chuang</td>
<td>1856-1858</td>
</tr>
<tr>
<td>Prediagonalized Block-Davidson Scheme: an efficient tool to selectively calculate highly excited vibrational states</td>
<td>L.A. Dobrzanski, J. Trzaska, W. Sitek</td>
<td>1859-1863</td>
</tr>
<tr>
<td>The Examples of the Artificial Intelligence Applications in Materials Engineering</td>
<td>L.A. Dobrzanski, M. Drak, J. Trzaska</td>
<td>1864-1867</td>
</tr>
<tr>
<td>Active Linear Modeling of Cochlear Biomechanics Using Hspice</td>
<td>M.-H. Tsai and Y.-H. Tang</td>
<td>1871-1875</td>
</tr>
<tr>
<td>Electronic and magnetic properties of La₃₋₁₋₂ Ca₂ MnO₃</td>
<td>Xin-She Yang</td>
<td>1876-1879</td>
</tr>
<tr>
<td>New Enzyme Algorithm, Tikhonov Regularization and Inverse Parabolic Analysis</td>
<td>Qian Zhang, Zheng Liu, Xia Zhang, Yu Sun, and Xuezhi Wen</td>
<td>1880-1883</td>
</tr>
</tbody>
</table>