# WSEAS Transactions on Signal Processing

Contents: 2015 Print ISSN: 1790-5052 E-ISSN: 2224-3488

### Acceptance Rate (for the years 2013 and 2014): 27.59%

Acceptance Rate = C/D where: C = the number of accepted papers, D= the number of submitted papers. Withdrawn Papers are not considered for the numbers C and D.

#### **Editorial Board:**

#### **Editor-in-Chief**

Professor Nikos E. Mastorakis
Department of Industrial Engineering,
Technical University of Sofia,
Kliment Ohridski 8,
1000 Sofia, Bulgaria

#### **Associate Editors:**

- Prof. Kamisetty Rao, (Fellow IEEE), University of Texas at Arlington, USA
- Prof. Pan Agathoklis, University of Victoria, Canada
- Prof. Tadeusz Kaczorek, (IEEE Fellow), Warsaw University of Technology, Poland
- Prof. Demetri Terzopoulos, (IEEE Fellow, ACM Fellow), University of California, Los
- Angeles
- Prof. Yuriy S. Shmaliy, (IEEE Fellow), The University of Guanajuato, Mexico
- Prof. Georgios B. Giannakis, (IEEE Fellow), University of Minnesota, USA
- Prof. Abraham Bers, (IEEE Fellow), MIT, USA
- Prof. Brian Barsky, (IEEE Fellow), University of Berkeley, USA
- Prof. Aggelos Katsaggelos, (IEEE Fellow), Northwestern University, USA
- Prof. Nikolaos Paragios, Ecole Centrale Paris, France
- Prof. Nikolaos G. Bourbakis, (IEEE Fellow), Wright State University, USA
- Prof. Lei Xu, (IEEE Fellow), Chinese University of Hong Kong, Hong Kong
- Prof. Wasfy B Mikhael, (IEEE Fellow), University of Central Florida Orlando, USA
- Prof. Sidney Burrus, (IEEE Fellow), Rice University, USA
- Prof. Biswa N. Datta, (IEEE Fellow), Northern Illinois University, USA
- Prof. Narsingh Deo, (IEEE Fellow, ACM Fellow), University of Central Florida, USA
- Prof. Hisashi Kobayashi, Princeton University, USA
- Prof. Leonid Kazovsky, Stanford University, USA
- Prof. Steven Collicott, Purdue University, West Lafayette, IN, USA
- Prof. Dimitri Kazakos, Texas Southern University, USA
- Prof. Stephen Weinstein, Columbia University, USA
- Prof. Dharma P. Agrawal, University of Cincinnati, Cincinnati, OH, USA

Prof. Zoran Bojkovic, University of Belgrade, Serbia

Prof. Jose M. F. Moura, Carnegie Mellon University, Pittsburgh, PA, USA

Prof. Vijayakumar Bhagavatula, (Fellow of OSA and SPIE), Carnegie Mellon

University, Pittsburgh, PA, USA

Prof. Liang-Gee Chen, National Taiwan University, Taiwan

Prof. Ahmed H. Tewfik, University of Minnesota, USA

Prof. Jenq-Neng, Hwang University of WA, Seattle, USA

Prof. Amir Hussain, University of Stirling, Stirling, UK

Prof. Gergely V. Zaruba, The University of Texas at Arlington, USA

Prof. Mohammed Ghanbari, University of Essex, UK

Prof. C.-C. Jay Kuo, University of Southern California, USA

Prof. Amar Mukherjee, University of Central Florida, USA

Prof. Athanassios Manikas, Imperial College, University of London, UK

Prof. Dengsheng Zhang, Monash University, Australia

Prof. Xingquan Zhu, University of Vermont, VT, USA

Prof. Satnam Dlay, University of Newcastle upon Tyne, UK

Prof. W. L. Woo, University of Newcastle upon Tyne, UK

Prof. Klimis Ntalianis, Technological Educational Institute of Athens, Greece

#### **Topics:**

Filter design and structures Fast algorithms Adaptive filters Nonlinear Signals and Systems Multirate filtering and filter banks Signal reconstruction Time-frequency analysis Spectral estimation Higher order spectrum analysis Parameter estimation Detection Array signal processing Statistical signal analysis Signal and system modeling Cyclostationary signal analysis Speech production and perception Speech analysis Speech synthesis Speech coding Speech recognition Speech enhancement and noise reduction Active noise control Active noise reduction Echo cancellation Psychoacoustics Broadband audio coding Signal processing for music Binaural systems Room acoustics Digital transforms HDTV Multidimensional systems Machine vision Image coding Image motion / sequence / video Computed imaging Geophysical and seismic processing Image analysis and segmentation Image filtering, restoration and enhancement Image representation and modeling Pattern recognition Neural networks Fuzzy Systems Evolutionary computation Expert systems Multisensor Data Fusion Architectures and VLSI hardware Programmable signal processors Algorithms and applications mappings Design methology and CAD tools Languages and real time software Real time system estimation Optimization problems in signal processing Radar Sonar Biomedical processing Geophysical signal processing Underwater signal processing Remote sensing Robotics Astronomy Classification Crime on the Web Security. Publicity. Privacy. Reputation Frauds in Business Reputation Satellite signals processing Measure and Instrumentation

## Articles:

An Approach to Interesting Objects Detection in Low Quality Image Sequences	
<u>for Fisheries Management</u>	8
Authors: Zuojin Li, Liukui Chen, Jun Peng, Lei Song	
A Robust System for Printed and Handwritten Character Recognition of	
<u>Images Obtained by Camera Phone</u>	22
Authors: H. El Bahi, Z. Mahani, A. Zatni, S. Saoud	
Equivalence Between SLNR and MMSE Precoding Schemes in the K-User MISO	
Interference Channel	28
Authors: Bangwon Seo, Joonwoo Shin	
Design of Higher Order LP and HP Digital IIR Filter Using the Concept of	
Teaching-Learning Based Optimization	37
Authors: Damanpreet Singh, J. S. Dhillon	
FPGA-Based Architectures for Image Processing Using High-Level Design	44
Authors: Yahia Said, Taoufik Saidani, Mohamed Atri	
A Novel Adaptive Object Tracking Method Based on Expected Likelihood	
Kernel	51
Authors: Hamd Ait Abdelali, Leila Essannouni, Fedwa Essannouni, Driss Aboutajdine	31
Low-Power OZGF Bank and MR Hamming Windowing for Embedded Speech	
Recognition	57
Authors: Brian Smith, John Sustersic, Michael Moore	
MUSIC Algorithm for RSSI-Based DoA Estimation on Standard IEEE	
802.11/802.15.x Systems	68
Authors: Marco Passafiume, Stefano Maddio, Alessandro Cidronali, Gianfranco Manes	;
Negative Impedance Technique for Wide Dynamic Range in Radar Systems	78
Authors: Amir Almslmany, Qunsheng Cao, Caiyun Wang	
Blind Identification of Underdetermined Mixtures Based on Charrelation	
Matrix	87
Authors: Zhongqiang Luo, Lidong Zhu	
Exposure Image Fusion of Enhancing Detail Visibility Based on Contrast	
Adjustment	98
Authors: Guo-Cheng Yang, Mei-Ling Li, Lei-Ting Chen, Hang Qiu	
Video Cut Detection Method Based on a 2D Luminance Histogram Using an	
Appropriate Threshold and a Post Processing	106
Authors: Youssef Bendraou, Fedwa Essannouni, Driss Aboutajdine, Ahmed Salam	

Research on the Optical Image Edge Detection Based on the Improved LOG	
<u>Operator</u>	112
Authors: Wang Yu, Wu Zhiqiang, Zhu Xinhua	
Robust Moving Object Detection Based on ViBe with Adaptive Shadow	
<u>Detector</u>	121
Authors: Zhihui Fan, Zhaoyang Lu, Jing Li, Chao Yao, Wei Jiang	
A Subjective Method to Estimate the Voice Quality for Speech Watermarking	
Based on Improved Spread Spectrum Technique	130
Authors: Shervin Shokri, Mahamod Ismail, Nasharuddin Zainal	
A No. of A consider a Effect of the Book states and Godford and a contract of	
A Novel Approach to Eliminating the Permutation and Scaling Indeterminacies	
of Block BSS	139
Authors: Wei Zhao, Yuehong Shen, Pengcheng Xu, Zhigang Yuan, Yimin Wei, Wei Jian	
Existence and Exponential Stability of Anti-periodic Solutions for a Cellular	
Neural Networks with Impulsive Effects	149
Authors: Changjin Xu, Xinliao Mao	
A Study on Modeling of Road Pavements Based on Laser Scanned Data and a	
Novel Type of Approximating Hermite Wavelets	156
Authors: Boris M. Shumilov, Andrey N. Baigulov	
Authors. Boris W. Shurillov, Andrey W. Balgulov	
MRI Image Reconstruction Research Based on Discrete Shearlet Transform	163
Authors: Xu Hong	
GPS Signal Joint Acquisition Method of Mean Function and Autocorrelation	
Function under Multiplicative and Additive Noise	173
	1/3
Authors: Chao Wu, Luping Xu, Hua Zhang	
Closed Form Delay/Doppler/Propagation Factor Acquisition for GPS Signals	177
Authors: Yazeed Al-Kharabsheh, Mohammad Amin, Saleh O. Al-Jazzar	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Multi-Information Fusion and Filter Study of Multi-Sensor Velocity	
Measurement on High-Speed Train	185
Authors: Hou Tao, Niu Hongxia	
High Performance Steganographic Scheme Applying Time-Varying	
Convolutional Embedding Codes	195
Authors: Chi-Yuan Lin, Jyun-Jie Wang	
Improved Gaussian Mixture PHD Smoother for Multi Target Tracking	<b>3</b> 03
Improved Gaussian Mixture PHD Smoother for Multi-Target Tracking	203
Authors: Xiangyu He, Guixi Liu	

Comparisons between Sub-Pixel Estimation Techniques in H.264/AVC and VC-	
1 Video Coding Standards	217
Authors: Wissal Hassen, Mbainaibeye Jérôme, Hamid Amiri	
A Damage Identification Method for Messenger Wire in Electrified Railway	
Based on Improved Synergetics	226
Authors: Hong Xiaobin, Ni Lei, Luo Zongqiang	
<u>The Cramer-Rao Bound for 3-D Frequencies in a Colored Gaussian Noise</u>	234
Authors: Chawki Youness, El Asnaoui Khalid, Ouanan Mohammed, Aksasse Brahim	
Dynamic Population Adaptive Particle Swarm Optimized Particle Filter for	
Integrated Navigation	244
Authors: Zhimin Chen, Yuming Bo, Yuanxin Qu, Xiaodong Ling, Xiaohong Tao, Yong Liu	
Image Cryptosystem Based on Digital Signature and Double Random Phase	
Encoding	254
Authors: Hayam Abdel-Mordy, Emad S. Hassan, Sami A. El-Dolil, Fathi E. Abd El-Samie	
Outage Analysis in Multi-User and Multi-Relay Cognitive AF Relaying Networks	
Using MRC	261
Authors: Jing Yang, Lei Chen, Caihong Xu, Jie Ding, Yuren Du	
Learning One-class KSVM+ for Multi-class Problems with Group Information of	
<u>Data</u>	271
Authors: Wensong Zhao, Liya Fan	
HEVC vs. H.264/AVC Standard Approach to Coder's Performance Evaluation	279
Authors: Zoran Milicevic, Zoran Bojkovic, Kamisetty R. Rao	
The Two-Step Non-Data-Aided SNR Estimation in the Low SNR Region of	207
OFDM Signals Authors: Dong Wang, Wei Xu	287
Authors. Dong Wang, Wei Au	
Edge Enhanced and Nonlocal Sparse Representation for Image Denoising	295
Authors: Qian Wang, Ping Wang, Yuwei Zang	
The Phase Ambiguity Resolution by the Exhaustion Method in a Single-Base	
Interferometer	303
Authors: Yury Fateev, Dmitry Dmitriev, Valery Tyapkin, Vladimir Shaydurov	
An Algorithm for Indoor Photo Diode-Based Visible Light Positioning	309
Authors: Xiang Zhao, Jiming Lin	
An Optimization Method for Numerically Calving Three Point DVDs of Linear	246
An Optimization Method for Numerically Solving Three-Point BVPs of Linear	316

## Second-Order ODEs with Variable Coefficients

Authors: Ming Hou, Liya Fan

New Method for Measuring the Detail Preservation of Noise Removal Techniques in Digital Images

Authors: Fabrizio Russo

327