

IET Intelligent Signal Processing Conference

(ISP 2013)

IET Conference Publications 619

**London, United Kingdom
2-3 December 2013**

ISBN: 978-1-62993-843-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2013) by the Institution of Engineering and Technology
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the Institution of Engineering and Technology
at the address below.

Institution of Engineering and Technology
P. O. Box 96
Stevenage, Hertfordshire
U.K. SG1 2SD

Phone: 01-441-438-767-328-328
Fax: 01-441-438-767-328-375

www.theiet.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Fast Compressed Sensing Reconstruction Using the Least Squares and Signal Correlation	1
<i>W. Hotrakool; C. Abhayaratne</i>	
A Novel Precolouring-Random Demodulator Architecture for Compressive Spectrum Estimation	7
<i>D. Karampoulas; S. M. Kouadri; L. S. Dooley</i>	
Super-resolution Sparse Projected Capacitive Multitouch Sensing	13
<i>M. Yaghoobi; S. McLaughlin; M. E. Davies</i>	
Micro-doppler Based Target Classification Using Multi-feature Integration	19
<i>A. W. Miller; C. Clemente; A. Robinson; D. Greig; A. M. Kinghorn; J. J. Soraghan</i>	
Improving Infrared Vehicle Detection with Polarisation	25
<i>C. N. Dickson; A. M. Wallace; M. Kitchen; B. Connor</i>	
Digital Imaging Processing for In-Vivo Skin Measurements	31
<i>P. Xiao; W. Pan; X. Ou</i>	
Simultaneous Adaptation of Bandwidth and Frequency Parameters Within a Complex Notch Filter	36
<i>P. T. Wheeler; J. A. Chambers</i>	
Distributed Processing of a Fractal Array Beamformer	42
<i>P. Karagiannakis; K. Thompson; J. Corr; I. K. Proudler; S. Weiss</i>	
Toward Distributed Noise-source Localization for Underwater Sensor Networks	47
<i>S. Blouin; G. Inglis</i>	
Combining the 2D and 3D World: A New Approach for Point Cloud Based Object Detection	53
<i>D. Meissner; S. Reuter; K. Dietmayer</i>	
Theoretical Analysis of Musical Noise Generation for Blind Speech Extraction with Generalized MMSE Short-Time Spectral Amplitude Estimator	59
<i>S. Nakai; R. Miyazaki; H. Saruwatari; S. Nakamura</i>	
Study, Analysis and Application of Optical OFDM, Single Carrier (SC) and MIMO in Intensity Modulation Direct Detection (IM/DD)	65
<i>P. Fahamuel; J. Thompson; H. Haas</i>	
Channelized Transceiver for Real Signals	71
<i>O. Ozdil; A. Yildirim; C. Toker</i>	
A New Cross-Layer Dynamic Spectrum Access Architecture for TV White Space Cognitive Radio Applications	76
<i>J. H. Martin; L. S. Dooley; K. C. P. Wong</i>	
On Pareto-Koopmans Efficiency for Performance-Driven Optimisation in Self-Organising Networks	82
<i>H. Peyvandi; A. Imran; M. A. Imran; R. Tafazolli</i>	
A Coordinated Multicell Beamforming Technique with Multiple Interference Constraints	88
<i>Y. Wu; S. Lambotharan</i>	
Power Efficient Resource Allocation Algorithm based on Sequential Quadratic Programming in Dense Femtocell Deployment	94
<i>Fei Peng; Yue Gao; L. Cuthbert</i>	
Designing Optimal Trajectory Planners for Robotic Communications	101
<i>D. B. Licea; D. McLernon; M. Ghogho</i>	
Implementation of Accurate Broadband Steering Vectors for Broadband Angle of Arrival Estimation	107
<i>M. A. Alrmah; S. Weiss; J. G. McWhirter</i>	
3M Relationship Pattern for Detection and Estimation of Unknown Frequencies for Unknown Number of Sinusoids Based on Eigenspace Analysis of Hankel Matrix	113
<i>A. Ahmed; Y. F. Hu</i>	
Application of Fast Euclidean Direction Search (FEDS) method for Smart Antennas in Mobile Communications Systems	119
<i>T. M. Jamel; B. M. Mansoor</i>	
Patient-specific Epileptic Seizure Detection in Long-term EEG Recording in Paediatric Patients with Intractable Seizures	125
<i>M. Zabih; S. Kiranyaz; T. Ince; M. Gabbouj</i>	
Robust Intrusion Detection and Recognition via Sparse Representation	132
<i>Di Xu; Wei Li; Jie Zhu</i>	
Coloured Noise Generation with IFFT	137
<i>M. Ispir; O. Özdil; A. Yildirim</i>	
Robust Spontaneous Facial Expression Recognition Using Sparse Representation	141
<i>S. Aina; J. A. Chambers; R. C.-W. Phan</i>	

Classification of Remotely Compressively Sensed Data	145
<i>A. A. Alharbi; C. Abhayaratne</i>	
Short-term Wind Prediction Using an Ensemble of Particle Swarm Optimised FIR Filters	150
<i>J. Dowell, S. Weiss</i>	
Angle of Arrival Estimation for Broadband Signals: A Comparison	155
<i>M. Alrmah; S. Weiss; S. Redif; S. Lambotharan; J. G. McWhirter</i>	
Detection of Affective States from Speech Signals Using Ensembles of Classifiers	161
<i>V. B. Kobayashi; V. B. Calag</i>	
Distributed Model Order Selection Using Diffusion PSO	170
<i>F. J. Gordon; B. Mulgrew</i>	
Positioning Using GNSS Signals and Digital Maps	176
<i>M. Šimandl; I. Puncochár; J. Škach</i>	
A Robust Voice Activity Detection Method Based on Speech Enhancement	182
<i>Xulei Bao; Jie Zhu; Ning Chen</i>	
Performance Comparison of the SVC, WSVC, and Motion JPEG2000 Advanced Scalable Video Coding Schemes	186
<i>Xin Lu; G. R. Martin; Xuesong Jin</i>	
PHY Layer Security in Multiple Antenna Systems by Joint Transmitter/Receiver Artificial Noise Generation through Semidefinite Programming	192
<i>N. Romero-Zurita; D. McLernon; M. Ghogho</i>	
Sensing/Throughput Trade-off for Cognitive Radio under Outage Constraints over Frequency-Selective Fading Channels	198
<i>Y. F. Sharkasi; D. McLernon; M. Ghogho</i>	
Underdetermined Model-Based Blind Source Separation of Reverberant Speech Mixtures using Spatial Cues in a Variational Bayesian Framework	203
<i>V. Popa; Wenwu Wang; A. Alinaghi</i>	
Look Who's Talking	209
<i>E. D'Arca; N. M. Robertson; J. Hopgood</i>	
Comparison Between the Statistical Cues in BSS Techniques and Binaural Cues in CASA Approaches for Reverberant Speech Separation	215
<i>A. Alinaghi; P. J. B. Jackson; W. Wang</i>	
Author Index	