Session 6C: ADAPTIVE SYSTEMS II

Time & Place: 2.20-5.50, Lecture Theatre C (Oral Session)


6C.1 A fast time-series adaptive filtering algorithm based on the QRD inverse-updates method

6C.2 Fast anti-lattice algorithm

6C.3 The performance of eight recursive least squares adaptive filtering algorithms in a limited precision environment

6C.4 Fast SCAR algorithm for least squares adaptive filtering
T. Schneider, Technische Hochschule Darmstadt, Darmstadt, GERMANY

6C.5 Stability guaranteed adaptive algorithm and its application to active noise control
Y. Shinohara, M. Kajiki, H. Ohmori and A. Sano, Keio University, Yokohama, JAPAN

6C.6 Inverse factorization type algorithms for H-infinity adaptive filtering
H. Sakai, Kyoto University, Kyoto, JAPAN

6C.7 The application of servo theory to the LMS algorithm
T.J. Moir, University of Paisley, Paisley, Scotland, U.K.

6C.8 An adaptive subspace filter for noise reduction
G. Doblinger, Vienna University of Technology, Vienna, AUSTRIA

6C.9 Block adaptive identification with predictive structure: an application to acoustic echo cancellation

6C.10 Recursive algorithm for elimination of measurement noise and impulsive disturbances from ARMA signals
M. Niedzwiecki, Technical University of Gdansk, Gdansk, POLAND
Session 6D: ARRAY PROCESSING II

Time & Place: 2.20-5.50, Lecture Theatre D (Oral Session)
Chairperson: J.P. Lecadre, IRISA, Campus de Beaulieu, 35042 Rennes Cedex, FRANCE

6D.1 Robust self-calibration of the maximum likelihood method in array processing
A. Flieller, P. Larzabal, L.E.Si.R., E.N.S., Cachan, FRANCE; and H. Clergeot, L.E.Si.R., Cayenne, FRANCE

6D.2 Interference rejection range improvement for linear arrays with a randomized sensor positioning scheme
J.M. Paez-Borrallo, J. Orea and M. Bermejo, ETSI Telecomunicacion, UPM, Madrid, SPAIN

6D.3 A quiescent pattern control strategy for adaptive arrays
P.G. Richardson, Defence Research Agency, Malvern, U.K.

6D.4 Novel architecture for studying complex behaviour in non-linear processing systems
C.T. Pointon, R.A. Carrasco, Staffordshire University, Stafford, U.K.; and M. Gell, B.T. Laboratories, Ipswich, U.K.

6D.5 Adaptive instrumental-variable method for robust direction-of-arrival estimation
P. Stoica, M. Cedervall and T. Soderstrom, Uppsala University, Uppsala, SWEDEN

6D.6 An adaptive subspace algorithm based on QR decomposition and on perturbation analysis
J.P. Delmas, Institut National des Telecommunications, Evry, FRANCE

6D.7 An extension of the constant-modulus array for periodic power signals
J.R. Cerquides and J.A. Fernandez-Rubio, ETSETB, Universitat Politecnica de Catalunya, Barcelona, SPAIN

6D.8 Robust direction finding in the presence of spatially correlated noise
B. Goransson, Royal Institute of Technology, Stockholm, SWEDEN

6D.9 Simultaneous multiuser demodulation based on digital array processing
A. Perez-Neira and M.A. Lagunas, ETSETB, Universitat Politecnica de Catalunya, Barcelona, SPAIN

6D.10 The singular value decomposition and beamforming in the presence of correlated arrivals
M. Elmarazey, 16 Dalton Road, Canberra, ACT, AUSTRALIA

Session 6E: DSP HARDWARE

Time & Place: 2.20-5.50, Lecture Theatre E (Oral Session)

6E.1 Implementation of complex DSP systems using high-level design tools
M. Freericks, A. Fauth, TU Berlin, Berlin, GERMANY; and A. Knoll, Universitaet Bielefeld, Bielefeld, GERMANY

6E.2 Synthesis of a dedicated signal processor via algorithmic/hardware trade-offs
M. Auguin, P. Balestra, F. Boeri, C. Carriere and A. Giuliani, Universite de Nice Sophia-Antipolis, Nice, FRANCE
6E.3 Fast adaptive algorithms implementation: algorithm/DSP-architecture interaction
M. Ouadou, Universite Mohamed V, Rabat, MOROCCO; P. Baylou, M. Najim, ENSERB, Talence, FRANCE; and M. Zyoute, Universite Mohamed V, Rabat, MOROCCO

6E.4 A VLSI mixed signal processing system
A. Alvarez and A.B. Premkumar, Nanyang Technological University, SINGAPORE

6E.5 Implementation of digital filters on reconfigurable field-programmable gate arrays
H. Leich and J. Hancq, Faculte Polytechnique de Mons, Mons, BELGIUM

6E.6 Hardware-efficient implementation of oversampled time-reversed linear phase IIR filters
Q. Huang, Swiss Federal Institute of Technology, Zurich, SWITZERLAND; and P.T. Maguire, University of East Anglia, Norwich, U.K.

6E.7 A high speed bit stream generator for HDTV
Y-G. Park, C. Sohn and B-U. Lee, DAEWOO Electronics, Seoul, KOREA

6E.8 Very high speed edge detector chip using the optimised Canny-Deriche filter
E. Bourennane, C. Milan, M. Paindavoine, Universite de Bourgogne, Dijon, FRANCE; and M. Robert, Laboratoire LIRMM, Montpellier, FRANCE

6E.9 Systolic arrays for modified covariance spectral estimation used with ultrasonic doppler blood flow detectors
S.J. Bellis, University College North Wales, Bangor, Wales, U.K.; W.P. Marnane, University College Cork, Cork, IRELAND; D. Wilde, IRISA, Rennes, FRANCE; and P.J. Fish, University College North Wales, Bangor, Wales, U.K.

6E.10 High level synthesis of a non-linear distortion corrector for PWM DACs
M. Sandler, A. Paul and H. Malik, King’s College London, London, U.K.

Session 6P: PATTERN RECOGNITION

Time & Place: 2.20-5.50, Poster Rooms (Poster Session)


6P.1 A visual surveillance system for autonomous vehicle risk avoidance
G.L. Foresti, P. Matteucci, C.S. Regazzoni and S. Spaggiari, University of Genoa, Genova, ITALY

6P.2 Pose estimation based on symmetry of 3-D object
W. Wen and B-Z. Yuan, Northern Jiaotong University, Beijing, CHINA

6P.3 Noise robust and rotation invariant texture classification
T.N. Tan, University of Reading, Reading, U.K.

6P.4 Wavelet-based edge detection and classification
J.R. Beltran and J. Navarro, Universidad de Zaragoza, Zaragoza, SPAIN

6P.5 Recognizing partially occluded colored objects
R. Schettini, IFCTR-ITIM, CNR, Milano, ITALY

6P.6 Fractional Brownian motion: a model for image texture
R. Jennane and R. Harba, Universite d’Orleans, Orleans, FRANCE
6P.7 Finding particles in a polymeric matrix by means of Hough transform  
V. Ballarin and E. Moler, Facultad de Ingenieria, Mar del Plata, ARGENTINA

6P.8 Measurement of crowd density using image processing  
J.H. Yin, S.A. Velastin and A.C. Davies, King's College London, London, U.K.

6P.9 Range imaging via spatially encoded coloured spots  
C.J. Davies and M.S. Nixon, University of Southampton, Southampton, U.K.

6P.10 Image sequence processing to supervise fish passes  
N. Castignolles, M. Cattoen, INP-ENSEEIHT, Toulouse, FRANCE; and M. Larinier, CSP-CEMAGREF, FRANCE

6P.11 Time variant system identification for car engine signal analysis  
M. Wagner, Ruhr-Universitaet Bochum, GERMANY; E. Karlsson, Uppsala University, Uppsala, SWEDEN; D. Koenig and C. Toerk, Ruhr-Universitaet Bochum, Bochum, GERMANY

6P.12 A model based detection scheme for non synchronous multidimensional transient  
P. Beauseroy and P. Gaillard, Universite de Technologie de Compiegne Troyes, Troyes, FRANCE

6P.13 Optimal estimation of fractal models of digital sequences by means of genetic algorithms  
P. Agati and E. Mumolo, Universita' di Trieste, Trieste, ITALY

6P.14 On two-point resolution in partially coherent light: a parameter estimation approach  
A.J. den Dekker, Delft University of Technology, Delft, NETHERLANDS

6P.15 Pattern recognition technics to improve knock detection in spark ignition engines  
F. Molinaro, Universite de la Reunion, Saint-Denis, FRANCE; and F. Castanie, ENSEEIHT-GAPSE, Toulouse, FRANCE

6P.16 Classification of non-stationary sinusoidal signals  
E. Le Carpentier, I. Vincent, Ecole Centrale de Nantes, Nantes, FRANCE; F. Auger, IUT de Saint-Nazaire, Saint-Nazaire, FRANCE; and C. Doncarli, Ecole Centrale de Nantes, Nantes, FRANCE

6P.17 On-line handwriting recognition using supervised hidden Markov models  
J.R. Bellegarda, D. Nahamoo, K.S. Nathan and E.J. Bellegarda, IBM Research, Yorktown Heights, NY, U.S.A.

6P.18 Unconstrained letter-segmentation of off-line cursive script using contour information  

6P.19 A function to express hand-drawn letters  
M. Kamada, Ibaraki University, Ibaraki, JAPAN; K. Toraichi, University of Tsukuba, Ibaraki, JAPAN; C.Y. Huang and W.E. Pan, Ibaraki University, Ibaraki, JAPAN

6P.20 A technique CLEAN for detecting multiple straight lines in a binary image using discrete Hough transform  
R.C. Agrawal and R.K. Shevgaonkar, Indian Institute of Technology, Bombay, INDIA
Session 7A:  DIGITAL AUDIO

Time & Place:  9.00-12.30, Lecture Theatre A (Oral Session)

Chairperson:  B. Mulgrew, Dept. of Electrical Engineering, University of Edinburgh, Mayfield Road, Edinburgh EH9 3JL, U.K.

7A.1 Subband ADPCM coding for wideband audio signals using analysis-by-synthesis quantization scheme
M.T. Chu and C.F. Chan, City Polytechnic of Hong Kong, Kowloon, HONG KONG

7A.2 Dynamic bit allocation in subband coding of wideband audio with multipulse LPC
P. Menardi, G.A. Mian and G. Riccardi, University of Padova, Padova, ITALY

7A.3 A global theoretical auditory model for application on audio coders design and objective perceptual assessment
A.S. Pena, Universidad de Vigo, Vigo, SPAIN

7A.4 Hi-fi audio CODEC employing variable frame bit allocation

7A.5 A method of noise reduction with FIR dynamic filtering

7A.6 Modeling and compensation of nonlinear distortion in horn loudspeakers
H. Schurer, A.P. Berkhoff, C.H. Slump and O.E. Herrmann, University of Twente, Enschede, NETHERLANDS

7A.7 Consumer audio DSP applications using Motorola's DSP56004
P. Atherton, Motorola Semiconductors, East Kilbride, Glasgow, U.K.

7A.8 A digital signal processing audiological workstation
D. Sweeney, R.W. Stewart and E. Pirie, University of Strathclyde, Glasgow, U.K.

Session 7B:  NONLINEAR DSP II (SPECIAL SESSION)

Time & Place:  9.00-12.30, Lecture Theatre B (Oral Session)

Chairperson:  G.L. Sicuranza, Dept. Elettrotecnica Elettronica Infor., University degli Studi di Trieste, Via A. Valerio 10, 34127 Trieste, ITALY

7B.1 A stability condition for time-varying bilinear systems and its applications in adaptive filtering
J. Lee, Industrial Technology Research Institute, Hsinchu, TAIWAN, R.O.C.; and V.J. Mathews, University of Utah, Salt Lake City, Utah, U.S.A.

7B.2 Unsharp masking with nonlinear filters
T-H. Yu, Chinese University of Hong Kong, Shatin - NT, HONG KONG; and S.K. Mitra, University of California, Santa Barbara, CA, U.S.A.

7B.3 Optimal order for nonlinear prediction
A. Poncet and G.S. Moschytz, Swiss Federal Institute of Technology, Zurich, SWITZERLAND

WITHDRAWN
Session 7B: 

7B.4 An adaptive invariant transform using neural network techniques  
S. Kroener, Technische Universitaet Hamburg-Harburg, Hamburg, GERMANY; R. Moratz, Universitaet Bielefeld, Bielefeld, GERMANY; and H. Burkhardt, Technische Universitaet Hamburg-Harburg, Hamburg, GERMANY

7B.5 Order estimation and nonlinear prediction with radial basis functions  
C. Ris, Faculte Polytechnique de Mons, Mons, BELGIUM; H. Dedieu and M. Hasler, Swiss Federal Institute of Technology, Lausanne, SWITZERLAND

7B.6 Marginal median learning vector quantizer  
C. Kotropoulos, I. Pitas, University of Thessaloniki, Thessaloniki, GREECE; and M. Gabbouj, Tampere University of Technology, Tampere, FINLAND

7B.7 Nonlinear filters for noise reduction  
W. Knecht, M. Schenkel and G.S. Moschytz, Swiss Federal Institute of Technology, Zurich, SWITZERLAND

7B.8 Smoothing 2-D or 3-D images using local classification  
K. Haris, G. Tziritas and S. Orphanoudakis, University of Crete, Heraklion, Crete, GREECE

7B.9 A robust L-estimator for filtering quantum-limited image sequences  
R.P. Kleihorst, R.L. Lagendijk and J. Biemond, Delft University of Technology, Delft, NETHERLANDS

7B.10 Nonlinear image restoration in computational 
J.B.T. Roerdink, University of Groningen, NETHERLANDS WITHDRAWN

Session 7C: COMMUNICATIONS II

Time & Place: 9.00-12.30, Lecture Theatre C (Oral Session)
Chairperson: F. Westall, BT Laboratories, Martlesham Heath, Ipswich, Suffolk IP5 7RE, U.K.

7C.1 State space modeling of time-varying multipath channels  
M. Haardt and R. Pauli, Technical University of Munich, Munich, GERMANY

7C.2 MLSE antenna diversity equalization of a jammed frequency-selective fading channel  
P. Vila, F. Pipon, D. Pirez, Thomson-CSF/RGS, Gennevilliers, FRANCE; and L. Fety, CNAM, Paris, FRANCE

7C.3 Analysis of a globally convex algorithm for blind equalization of non minimum phase channels  
S. Zazo, J.M. Paez-Borrallo and I.A. Perez-Alvarez, ETSI de Telecomunicacion (UPM), Madrid, SPAIN

7C.4 A comparison of six different non-linear equalisation techniques for digital communications systems  

7C.5 On the equalisation of the baseband LNL channel  
N. Beamish and A.D. Fagan, University College Dublin, Dublin, IRELAND
Low complexity cancellation of non-linear impairments to data communications channels
C.P. Callender, C.F.N. Cowan, Loughborough University of Technology, Loughborough, U.K.; and S. Theodoridis, University of Patras, Patras, GREECE

Adaptive arrays for non-selective and selective frequency channels with co-channel interference
O. Munoz and J. Fernandez, ETSE Telecomunicacion (UPC), Barcelona, SPAIN

Performance of a stochastic gradient adaptive beamformer for sub-sea acoustic communications
O.R. Hinton, G.S. Howe and A.E. Adams, University of Newcastle upon Tyne, Newcastle upon Tyne, U.K.

A diversity demodulation technique for mobile communications
A. Abrardo, G. Benelli, A. Bini and A. Garzelli, Universita di Firenze, Firenze, ITALY

The effect of a nonlinear amplifier on the bit error rate performance of OFDM and single carrier signals
T. Pollet, M. Van Bladel and M. Moeneclaey, University of Ghent, Gent, BELGIUM

Session 7D: DIGITAL FILTERING II

Time & Place: 9.00-12.30, Lecture Theatre D (Oral Session)
Chairperson: A. Fettweis, Ruhr Universitaet Bochum, Lehrst. f. Nachrichtentechnik, Universitaetsstr 150, 44780 Bochum, GERMANY

The convergence rate of symmetric weighted median filters
H. Chen, Jilin University of Technology, Changchun, CHINA; R. Yang and M. Gabbouj, Tampere University of Technology, Tampere, FINLAND

Fast approximation of the euclidean norm: application to vector median filtering
M. Barni, F. Bartolini and V. Cappellini, Universita di Firenze, Firenze, ITALY

Fast algorithms for analyzing and designing weighted median filters
R. Yang, M. Gabbouj and Y. Neuvo, Tampere University of Technology, Tampere, FINLAND

The Kfilter: a new model of nonlinear systems with memory
A. Pages-Zamora and M.A. Lagunas, ETSETB, Universitat Politecnica de Catalunya, Barcelona, SPAIN

Non-linear recursive smoothing filters in 1-D and 2-D
M. Macleod, Cambridge University, Cambridge, U.K.

Time-varying filter banks for the analysis of pc processes
J-C. Pesquet, Ecole Superieure d’Electricite, Gif-sur-Yvette, FRANCE; and H. Krim, LIDS, M.I.T., Boston, MA, U.S.A.

Convergence analysis of processing cost reduction method of NLMS algorithm partly skipping weight vector components adaptation
K. Takahashi and S. Mori, Keio University, Yokohama, JAPAN

A fast Fermat number transform for long sequences
L-I. Alfredsson, Linkoping University, Linkoping, SWEDEN
Session 7E: DSP SOFTWARE

Time & Place: 9.00-12.30, Lecture Theatre E (Oral Session)

Chairperson: P. Duhamel, Departement Signal, E.N.S.T., 46 Rue Barrault, 75634 Paris Cedex 13, FRANCE

7E.1 Towards a European reference package for practical signal processing
C. Capdessus, O. Labourdette, J. Thiel and E. Jolivet, Universite d'Orleans, Orleans, FRANCE

7E.2 An applicative DSP development environment
D. Freeman, British Telecom Laboratories, Ipswich, U.K.

7E.3 Optimizing DSP programs using the multirate retiming transformation
V. Zivojnovic, S. Ritz and H. Meyr, Aachen University of Technology, Aachen, GERMANY

7E.4 Direct software bridge Matlab-transputer boards
J. Kadlec, Institute of Information Theory and Automation, Prague, CZECH REPUBLIC

7E.5 A multiprocessor algorithm scheduler for signal and image processing
M. Razaz and K.A. Marlow, University of East Anglia, Norwich, U.K.

7E.6 A transputer implementation of pattern matching by invariant moments
G. Hall and F. Dechamp, University of Central Lancashire, Preston, U.K.

7E.7 A software structure for real-time parallel image processing
E. Rendon, L. Salgado, J.M. Menendez and N. Garcia, E.T.S.I. de Telecomunicacion (UPM), Madrid, SPAIN

7E.8 A real-time implementation of the CCITT G.728 16kb/s LD-CELP fixed-point algorithm on the Motorola DSP56156
M. Murphy, Motorola Ltd, East Kilbride, Glasgow, U.K.; and C. Cox, Signals and Software Ltd., Harrow, U.K.

7E.9 A fast 1D sieve transform for multiscale signal decomposition
J.A. Bangham, S.J. Impey and F.W.D. Woodhams, University of East Anglia, Norwich, U.K.

7E.10 Efficient implementation of FFT-like algorithms on MIMD systems
N. Jungclaus and M. Noelle, Technische Universitat Hamburg-Harburg, Hamburg, GERMANY
Session 7P: SPEECH PROCESSING

Time & Place: 9.00-12.30, Poster Rooms (Poster Session)

Chairperson: D. Van Compernolle, ESAT Laboratory, K.U. Leuven, K. Mercierlaan 94, 3001 Heverlee, BELGIUM

7P.1 Using MLPS as probability generators vs. as labelers: a comparative study
P. Le Cerf and D. Van Compernolle, K.U. Leuven, Heverlee, BELGIUM

7P.2 On the separability of speech signals
J. Ming, A.D. Irvine and F.J. Smith, Queen's University of Belfast, Belfast, Northern Ireland, U.K.

7P.3 Fuzzy smoothing of HMM parameters using Parzen's window with application to speech recognition
J. Dai, University of Nanjing, Nanjing, CHINA

7P.4 Large vocabulary Mandarin tone recognition by TDNN technique
G-S. Poo, National University of Singapore, Kent Ridge, SINGAPORE

7P.5 A study of the effect of pitch on LPC spectral matching metrics
J. Crestel and M. Guitton, ENSSAT/LASTI, Lannion, FRANCE

7P.6 The noise robustness of auditory front-ends in HMM based speech recognisers
I.R. Gransden and S.W. Beet, University of Sheffield, Sheffield, U.K.

7P.7 Non-stationary prediction of frame-based speech data
S.W. Beet, L. Baghai-Ravary and M.O. Tokhi, University of Sheffield, Sheffield, U.K.

7P.8 Application of singularity detection with wavelets for pitch estimation of speech signals
N. Gonzalez and D. Docampo, Universidad de Vigo, Vigo, SPAIN

7P.9 Study of a VLSI implementation of a noise reduction algorithm for digital hearing aids
S. Grassi, A. Heubi, M. Ansorge and F. Pellandini, University of Neuchatel, Neuchatel-Serrières, SWITZERLAND

7P.10 A general waveform interpolation structure for speech coding
W.B. Kleijn and J. Haagen, A T & T Bell Laboratories, Murray Hill, NJ, U.S.A.

7P.11 Applications of speech processing using an AM-FM modulation model and energy operators
A. Potamianos and P. Maragos, Georgia Institute of Technology, Atlanta, Georgia, U.S.A.

7P.12 Double frequency and time-frequency analyses of cyclostationary speech sounds
B. Ravera and C. d'Alessandro, LIMSI-CNRS, Orsay, FRANCE

7P.13 A novel DyWTWT approach for continuous speech pitch estimation
F.J. Ancin, B.L. Burrows and R.A. Carrasco, Staffordshire University, Stafford, U.K.

7P.14 Two pass robust pitch extraction algorithm using the Dyadic wavelet transform
E. Lukasik and S. Grocholewski, Technical University of Poznan, Poznan, POLAND

7P.15 An algorithm for the estimation of glottal closure instants using the sequential detection of abrupt changes in speech signals
C. Murgia, I. Mann and G. Feng, Universite Stendhal, Grenoble, FRANCE

7P.16 The variation of the lip radiation impedance in a reverberant enclosure
C.J. Bleakley and R. Scaife, Dublin City University, Dublin, IRELAND
Session 8Ia: **INVITED LECTURE**

**Time & Place:** 1.30-2.20, Lecture Theatre A  
**Chairperson:** E. Chapel, Avonbank Cottage, Blackstone Road, Avonbridge, Falkirk, Scotland FK1 2LB, U.K.

8Ia.1 **Engineering algorithms for parallel VLSI implementation**  
E.F. Deprettere, Delft University of Technology, Delft, NETHERLANDS

Session 8Ib: **INVITED LECTURE**

**Time & Place:** 1.30-2.20, Lecture Theatre B  
**Chairperson:** R.J. Clarke, Dept. of Computing and Electrical Engineering, Heriot Watt University, Riccarton, Edinburgh, Scotland EH14 4AS, U.K.

8Ib.1 **ITU-T and ISO video compression standards: where we are now and how we got there**  
G. Morrison, British Telecom Laboratories, Ipswich, U.K.
Session 8A: ADAPTIVE SIGNAL PROCESSING

Time & Place: 2.20-5.50, Lecture Theatre A (Oral Session)
Chairperson: C.R. South, British Telecom Laboratories, Martlesham Heath, Ipswich, Suffolk IP5 7RE, U.K.

8A.1 Different approaches for a high-resolution narrow-band spectrum
A.N. Hossen, Ruhr-University, Bochum, GERMANY; and U. Heute, Christian Albrechts University, Kiel, GERMANY

8A.2 Performance analysis of two algorithms for tracking of multiple noisy cisoids
P. Tichavsky, Institute of Information Theory & Automation, Prague, CZECH REPUBLIC; and P. Handel, Ericsson Radio System AB, Stockholm, SWEDEN

8A.3 Behaviour of cascade resonator-in-a-loop adaptive filters for tracking multiple sinusoids

8A.4 Autoregressive estimation on signals presenting abrupt changes
T. Robert and C. Mailhes, ENSEEIHT/GAPSE, Toulouse, FRANCE

8A.5 Spectral estimation and performance optimisation for the cyclostationary PPM process in the presence of jitter
J.M.H. Elmirghani and R.A. Cryan, Manchester Metropolitan University, Manchester, U.K.

8A.6 High accuracy spectral estimation using the Legendre nonuniform discrete Fourier transform
V.E. Neagoe, Polytechnical University of Bucharest, Bucharest, ROMANIA

8A.7 Estimation of the optimal convergence factor for acoustic echo cancellation in a noisy environment
J. Marx, Technische Hochschule Darmstadt, Darmstadt, GERMANY

8A.8 Predictors based on interpolated FIR filters
O. Vainio, Tampere University of Technology, Tampere, FINLAND

8A.9 Acoustic echo control combined with two orthogonalizing techniques
C. Antweiler and A. Schmitz, Aachen University of Technology, Aachen, GERMANY

8A.10 An optimal microphone array for speech reception in a car
J. Rex and S.J. Elliott, University of Southampton, Southampton, U.K.

Session 8B: IMAGE RESTORATION AND RECONSTRUCTION

Time & Place: 2.20-5.50, Lecture Theatre B (Oral Session)
Chairperson: M. Gabbouj, Signal Processing Laboratory, Tampere University of Technology, PO Box 553, 33101 Tampere, FINLAND

8B.1 A deinterlacing and 4:2:2 to HDTV upconversion algorithm using motion compensation
C. Reillo, Telefonica I+D, Madrid, SPAIN

8B.2 Removal of replacement noise in motion picture sequences using 3D autoregressive modelling
A. Kokarum, Cambridge University, Cambridge, U.K.
8B.3 Motion compensated conversion from interlaced to progressive formats
L. Vandendorpe, L. Cuvelier, B. Maison, P. Queluz and P. Delogne, Universite Catholique de Louvain, Louvain-la-Neuve, BELGIUM

8B.4 Adaptive weighted median filtering based on local statistics
A. Taguchi, Musashi Institute of Technology, Tokyo, JAPAN; T. Sun and M. Gabbouj, Tampere University of Technology, Tampere, FINLAND

8B.5 Two stage neural networks filters for adaptive restoration of images degraded by both blur and noise
H. Youlal, M. Janati-I, L. Elismaili and A. Kada, Universite Mohamed V de Rabat, Rabat, MOROCCO

8B.6 Adaptive separable weighted median filtering
T. Sun, M. Gabbouj and V. Niskanen, University of Technology, Tampere, FINLAND

8B.7 Adaptive filters for edge-preserving smoothing of airborne SAR image speckle noise
C.R. Moloney and S. Ward, Memorial University of Newfoundland, St. John’s, Newfoundland, CANADA

8B.8 3D Wiener filtering for noise suppression in motion picture sequences using overlapped processing
A. Kokarum, Cambridge University, Cambridge, U.K.

8B.9 An extended Kalman filtering strategy for image feature extraction
C. Xu and S.A. Velastin, King’s College London, London, U.K.

8B.10 Blind and locally adaptive image restoration in the framework of a multiscale Gabor representation
G. Cristobal and R. Navarro, Consorcio de Investigaciones Científicas, Madrid, SPAIN

Session 8C: NEURAL NETWORKS II

Time & Place: 2.20-5.50, Lecture Theatre C (Oral Session)

Chairperson: G.D. Cain, School of Electronic & Manufacturing Systems, University of Westminster, New Cavendish Street, London W1M 8JS, U.K.

8C.1 Consideration of generalized optimization methods for labeling problems
T. Iwama, T. Horiuchi and K. Toraichi, University of Tsukuba, Ibaraki, JAPAN

8C.2 Weight initialisation and node selection in the construction of Casasent network classifiers

8C.3 Regular and fast chaotic neural network approach to translation invariant pattern recognition
V.E. Bondarenko, Moscow Research Institute, Moscow, RUSSIA

8C.4 A fast Kalman filter based new algorithm for training feedforward neural networks
F. Fnaiech, ENSET, Tunis, TUNISIA; D. Bastard, V. Buzenac, R. Settineri and M. Najim, Universite de Bordeaux I, Talence, FRANCE
8C.5 Learning algorithms for neural networks with finite temporal dynamic
N. Benvenuto, Universita di Padova, Padova, ITALY; F. Piazza and A. Uncini, Universita di Ancona, Ancona, ITALY

8C.6 Clustering in non-stationary pattern recognition systems
M. Markovic, M. Milosavljevic, Institute of Applied Mathematics & Electronics, Belgrade, YUGOSLAVIA; and B. Kovacevic, Faculty of Electrical Engineering, Belgrade, YUGOSLAVIA

8C.7 Adiabatic layering: beyond hierarchical multi-scale optimization
B. Truyen and J. Cornelis, Free University of Brussels, Brussels, BELGIUM

8C.8 Reconstruction of PAM signals using a multilayer perceptron with a multilevel sigmoidal function
K. Hacioglu and M. Abdelhafez, Eastern Mediterranean University, Mersin, TURKEY

8C.9 Optimal functional-link-net-based linear feedforward and decision feedback equalizers
A. Hussain, J.J. Soraghan and T.S. Durrani, University of Strathclyde, Glasgow, U.K.

8C.10 Improving the radial basis function networks for homogeneous nonstationary time series prediction

Session 8D: ESTIMATION II

Time & Place: 2.20-5.50, Lecture Theatre D (Oral Session)
Chairperson: D.T.M. Slock, Institut EURECOM, 2229 Route des Cretes, BP 193, 06904 Sophia Antipolis Cedex, FRANCE

8D.1 On-line constrained deconvolution
N. Souilah and G. Thomas, Ecole Centrale de Lyon, Ecully, FRANCE

8D.2 Towards globally convergent blind equalization of constant modulus signals: a bilinear approach
C.B. Papadias and D.T.M. Slock, Institut EURECOM, Sophia Antipolis, FRANCE

8D.3 Efficient algorithms for instrumental variable system identification
G-O. Glentis and N. Kalouptsidis, University of Athens, Athens, GREECE

8D.4 Optimal decimation-interpolation based parameter estimation
J. Xin and A. Sano, Keio University, Yokohama, JAPAN

8D.5 Prediction of the asymptotic and threshold behaviour of Bayesian signal parameter estimators
A. Quinn, Trinity College, University of Dublin, Dublin, IRELAND

8D.6 A method solving normal equation by ARMA lattice filter realization algorithm
M. Haseyama, N. Nagai and N. Miki, Hokkaido University, Sapporo, JAPAN

8D.7 Estimating the Kullback-Leibler information for autoregressive model order selection in finite samples
H.E. Wensink and P.M.T. Broersen, Delft University of Technology, Delft, NETHERLANDS
8D.8 On the performance of AR order selection methods
J.R. Dickie and A.K. Nandi, University of Strathclyde, Glasgow, U.K.

8D.9 Information criteria and abrupt changes in probability laws
O. Colot, C. Olivier, P. Courtellemont, Universite de Rouen, Mont-Saint-Aignan, FRANCE; and A. El Matouat, Ecole Normale Superieure, Fez Principale, MOROCCO

8D.10 Estimation of mixing distributions. Application to a classification problem in signal processing
F. Brouaye, SUPELEC, Gif-sur-Yvette, FRANCE

Session 8E: PARALLEL AND NOVEL ARCHITECTURES

Time & Place: 2.20-5.50, Lecture Theatre E (Oral Session)
Chairperson: J.V. McCanny, Department of Electrical Engineering, Queens University of Belfast, Ashby Building, Stranmillis Road, Belfast BT9 5AH, N. IRELAND

8E.1 Mapping directionally weighted recursive least squares computations on an SVD updating array
M. Moonen, Katholieke Universiteit Leuven, Heverlee, BELGIUM

8E.2 CORDIC-based approximate rotations for SVD and QRD
J. Goetze, Technical University of Munich, Munich, GERMANY

8E.3 Implementation of adaptive signal processing architectures based on dynamically reconfigurable FPGAs
P. Lysaght and H.P. Dick, University of Strathclyde, Glasgow, U.K.

8E.4 A low power VLSI architecture with an application to adaptive algorithms for digital hearing aids
A. Heubi, S. Grassi, M. Ansorge and F. Pellandini, University of Neuchatel, Neuchatel-Serrières, SWITZERLAND

8E.5 Solving simultaneous linear equations over GF(p)
S. Fenn, M. Benaissa and D. Taylor, University of Huddersfield, Huddersfield, U.K.

8E.6 Digital filters for cochlea implants using mixed mode gate arrays
T. Olbrich and M. Shaw, University of Central Lancashire, Preston, U.K.

8E.7 Computational structures for recursive digital filters using the delta-operator
D.I. Patel and R.M. Goodall, Loughborough University of Technology, Loughborough, U.K.

8E.8 Single-clock delay-commutator for SR-FFT pipeline implementation
J. Garcia, J.A. Michell and A.M. Buron, Universidad de Cantabria, Santander, SPAIN

8E.9 On the implementation of the generalized stack algorithm and the comparison of sorting strategies
K. Achtmann and W. Rupprecht, Universitaet Kaiserslautern, Kaiserslautern, GERMANY

8E.10 A parallel approach to fractal-based image coder
F.J. Gonzalez-Serrano, O.W. Marquez and J.L. Alba-Castro, Universidad de Vigo, Vigo, SPAIN