2011 7th International Workshop on Systems, Signal Processing and their Applications

(WOSSPA 2011)

Tipaza, Algeria
9 – 11 May 2011
# Table of Contents

A NOVEL CROSS-HEXAGON SEARCH ALGORITHM FOR FAST BLOCK MOTION ESTIMATION..................................................................................................................................................... 1  
*Kamel Belloulata, Sheping Zhu, Jun Tian and Xiaodong Shen*

DATA CODING METHODS FOR LOW-POWER AIDED DESIGN OF INTERCONNECTIONS..................................................................................................................... 5  
*Ali Mahdoum, Lyazid Hamimed, Mohamed Louzri and Messaoud Saadaoui*

STUDY ON MEASURING METHOD OF THROMBOLYSES FOR WIRE TYPE STIRRER.......... 9  
*Minoru Morita, Mohammad Ajoudanian, Michiyasu SUZUKI and Zhongwei Jiang*

MODULATION CLASSIFICATION OF LINEARLY MODULATED SIGNALS IN A COGNITIVE RADIO NETWORK USING CONSTELLATION SHAPE ............................................. 13  
*Meysam Zamanian, Aliakbar Tadaion and Mohammad T. Sadeghi*

A VERTICAL JUMPING PERFORMANCE WITH AND WITHOUT ARMS SWING BY USING A DYNAMOMETRIC PLATFORM................................................................................................... 17  
*Samir Boukhenous and Mokhtar Attari*

MULTIPLE TARGET TRACKING AND CLASSIFICATION USING THE UNSCENTED PROBABILITY HYPOTHESIS DENSITY FILTER ............................................................................. 21  
*Mounir Melzi, Abdelaziz Ouldali and Zahir Messaoudi*

DETECTION OF QRS COMPLEX IN ELECTROCARDIOGRAM SIGNAL BY THE EMPIRICAL MODE DECOMPOSITION........................................................................................................ 25  
*Zohra Bouabida, ZineEddine Hadj Slimane and Fethi Bereksi Reguig*

GRID-CONNECTED MODELING, CONTROL AND SIMULATION OF SINGLE-PHASE TWO-LEVEL PHOTOVOLTAIC POWER GENERATION SYSTEM COUPLED TO A PERMANENT MAGNET SYNCHRONOUS MOTOR......................................................... 29  
*Abd Essalam Badoud and Mabrouk Khemilche*

A NEW PATCH-BASED APPROACH FOR NOISE FILTRING .................................................. 35  
*Quoc Bao Do, Azeddine Beghdadi and Marie Luong*

IMPLANTATION OF A STATIC MODEL OF THE CORONA EFFECT IN THE ATP-EMTP SOFTWARE ................................................................................................................................. 39  
*Zahira Anane and Abdelhafid Bayadi*
DEVELOPMENT OF AN ALGORITHM OF MAXIMUM POWER POINT TRACKING FOR PHOTOVOLTAIC SYSTEMS USING GENETIC ALGORITHMS

Slimane Hadji, Fateh Krim and Jean-Paul Gaubert

MOTORCYCLE AUTOMATION: SYSTEM APPROACH

Mohamed EL Amine Khettat, Samir Bouaziz, Hocine Imine and Stephane Espie

NON CIRCULAR ESPRIT-ROOTMUSIC JOINT DOA-DOD ESTIMATION IN BISTATIC MIMO RADAR

Mohamed Laid Bencheikh and Yide Wang

PERFORMANCE COMPARISON OF TWO HARDWARE IMPLEMENTATIONS OF THE DEBLOCKING FILTER USED IN H.264 BY CHANGING THE UTILIZED DATA WIDTH

Kamel Messaoudi, El-Bay Bourennane, Salah Toumi and Gilberto Ochoa

AN AUTOMATED PROGRAM FOR MENTAL STRESS AND APNEA/HYPOPNEA EVENTS DETECTION

Mourad Adnane, Zhongwei Jiang, Nobuaki Mori and Yoshiaki Matsumoto

BLUR REDUCTION BY A MULTIPLICATIVE MULTITRESOLUTION DECOMPOSITION MMD

Amina Serir, Assia Hamadene and Fatma Kerouh

SPEECH SYNTHESIS TECHNIQUES.A SURVEY

Yousef Tabet and Mohamed Boughazi

AN EFFICIENT FAST INTEGER DCT TRANSFORM FOR IMAGES COMPRESSION WITH 16 ADDITIONS ONL

Nabila Brahimi and Saad Bouguezel

LONG WORD ADDITION: A STATISTICAL APPROACH FOR HIGH SPEED ARITHMETIC APPLICATIONS

Samir Bouaziz, Abdelhafid Elouardi, Bruno Larnaudie and Mohamed EL Amine Khettat

LOW COMPLEXITY LINEAR MMSE EQUALIZATION, CHANNEL DECODING AND ESTIMATION FOR FREQUENCY SELECTIVE FAST FADING CHANNELS

Abdellah Berdai and Jean-Yves Chouinard

DELINEATION OF THE COMPLEX QRS AND THE T-END USING WAVELET TRANSFORM AND SURFACE INDICATOR

Nabil Dib, Radhwane Benali, Zinedine Hadj Slimane and Fethi Bereksi Reguig

BLUETOOTH PORTABLE DEVICE AND MATLAB-BASED GUI FOR ECG SIGNAL ACQUISITION AND ANALYSIS

Noureddine Belgacem, Said Assous and Fethi Bereksi Reguig
VLSI ARCHITECTURE OF THE BLIND CARRIER PHASE TRACKING WITH
GUARANTEED GLOBAL CONVERGENCE.................................................................191
Samir Tagzout, Adel Belouchrani and Mohammed Ouali

A NOVEL GENETIC ALGORITHM TECHNIQUE FOR SOLVING UNIVERSITY COURSE
TIMETABLING PROBLEMS..................................................................................195
Othman Alsmadi, Zaer Abo-Hammour, Dia Abo-Al-Nadi and Alia Algsoon

ON THE SURFACE EMG SIGNAL RECONSTRUCTION USING BLIND SOURCE
SEPARATION ........................................................................................................199
Abdelkader Miraoui, Hichem Snoussi and Jacques Duchene

LSF-CMA BASED BLIND EQUALIZATION ALGORITHMS LSF-CMA BASED BLIND
EQUALIZATION ALGORITHMS.............................................................................203
Ahmed Djebbar

IMAGE SEGMENTATION USING AN EMERGENT COMPLEX SYSTEM: CELLULAR
AUTOMATA ...........................................................................................................207
Safia Djemame and Mohamed Chawki Batouche

DETECTION OF DEFECTS IN WELD RADIOGRAPHIC IMAGES BY USING MULTI-SCALE
GVF B-SPLINE SNAKE ......................................................................................211
Yamina Boutiche and Anissa Bessekri

PHASE DIFFERENCE STATISTICAL BEHAVIOR OF INTERFEROMETRIC SAR
SYSTEMS .............................................................................................................215
Salah Redadaa, I. Tilouti, R. Hamdi, M. Benslama and N. Merabtine

A COMPLETE STATISTICAL EVALUATION OF STATE-OF-THE-ART IMAGE QUALITY
MEASURES ...........................................................................................................219
Atidel Lahoulou, Emmanuel Viennet, Ahmed Bouridane and Mourad Haddadi

ADAPTIVE BLIND EQUALIZATION FOR QAM MODULATED SIGNALS IN THE
PRESENCE OF FREQUENCY OFFSET ...................................................................223
Mehrdad Niroomand, Mostafa Derakhtian, Assieh Shahimaeen and Saeed Gazor

GPS L1 PHASE SCINTILLATION USING WAVELET ANALYSIS AT HIGH LATITUDE ........227
Rajesh Tiwari, Hal J. Strangeways, Smita Tiwari, Said Boussakta and Susan Skone

SPEAKER LOCALIZATION USING STEREO-BASED SOUND SOURCE LOCALIZATION ........231
Halim Sayoud, Siham Ouamour and Salah Khennouf

VISCOOSITY AND GAS/OIL RATIO CURVES ESTIMATION USING ADVANCES TO
NEURAL NETWORKS .........................................................................................235
Amar Khoukhi, Munirdine Oloso, Moustafa Elshaei and Abdulazeez Abdulraheem
OBSTACLE DETECTION WITH 3D CAMERA USING U-V-DISPARIETY .................................................239
Yuan Gao, Xiao Ai, John Rarity and Naim Dahnoun

A STRUCTURED SLIDING MODE CONTROLLER FOR A CLASS OF UNDERACTUATED MECHANICAL SYSTEMS ....................................................................................................................243
Fares Nafa, Salim Labiod and Hachemi Chekireb

ELLIPITC CURVE CRYPTOGRAPHY AND ITS APPLICATIONS ................................................................247
Moncef Amara and Amar Siad

FEATURE SELECTION BASED ON RF SIGNALS AND KNN RULE: APPLICATION TO MICROEMBOLI CLASSIFICATION ..........................................................................................................................251
Karim Ferroudji, Nabil Benoudjit, Mohamed Bahaz and Ayache Bouakaz

UNSUPERVISED SEGMENTATION OF NON STATIONARY DATA HIDDEN WITH NON STATIONARY NOISE ..............................................................................................................................255
Mohamed El Yazid Boudaren, Wojciech Pieczynski and Emmanuel Monfrini

DEFINING A PROCESS FOR RAPID PROCESSOR SELECTION AND ALGORITHM DEVELOPMENT .................................................................................................................................259
Naim Dahnoun and Jason Brand

CHARACTERIZATION OF BURIED OBJECTS USING WIDEBAND SIGNALS ........................................263
Caroline Fossati, Dong Han and Salah Bourennane

CHAOTIC CRYPTOGRAPHY USING EXTERNAL KEY ...........................................................................267
Abdelkader Senouci and Abdelkrim Boukabou

ENSEMBLE CLASSIFIER CONSTRUCTION FOR ARABIC HANDWRITTEN RECOGNITION .................................................................................................................................271
Nabiha Azizi, Nadir Farah and Mokhtar Sellami

IMPACTOR CALIBRATION: COMPARISON BETWEEN ACCELEROMETRIC MEASUREMENTS AND EXTENSOMETRIC PROCESSED DATA ........................................................................275
Samir Chadli, Noureddine Ababou and Amina Ababou

CA-CFAR THRESHOLD SELECTION FOR IR-UWB TOA ESTIMATION ................................................279
Abdelmadjid Maali, Ammar Mesloub, Mustapha Djeddou, Genevieve Baudoin, Hassane Mimoun and Abdelaziz Ouldali

A NEWTON-LIKE ALGORITHM FOR ADAPTIVE MULTI-MODULUS BLIND EQUALIZATION .................................................................................................................................283
Kashif Paracha and Azzedine Zerguine

FUZZY PREDICTION OF COMPLICATIONS IN CRANIOPATHY ..............................................................287
ML DETECTION IN MIMO COMMUNICATION SYSTEMS IN THE PRESENCE OF CHANNEL ESTIMATION ERROR ................................................................. 291
Mohammad Neinavaie, Mohammad Hassan Shariat, Mehrzad Biguesh and Saeed Gazor

GENERALIZED GRAY LEVEL DEPENDENCE METHOD FOR PROSTATE CANCER CLASSIFICATION .............................................................................. 295
Riad Khelifi, Mouloud Adel, Salah Bourennane and Aicha Moussaoui

AN IMPROPER RANDOM VECTOR APPROACH FOR ESPRIT AND UNITARY ESPRIT FREQUENCY ESTIMATION ................................................................. 299
Guillaume Bouleux, Thameur Kidar and Francois Guillet

SIGNAL PROCESSING REQUIREMENTS AND UNCERTAINTY MODELING ISSUES IN COOPERATIVE VEHICULAR POSITIONING .......................... 303
Denis Gingras, Evangeline Pollard and Dominique Gruyer

AN IMPROVED METHOD FOR NONSTATIONARY SIGNALS COMPONENTS EXTRACTION BASED ON THE ICI RULE .................................................. 307
Jonatan Lerga, VictorSucic and Boualem Boashash

AN AUTOMATIC TIME-FREQUENCY PROCEDURE FOR INTERFERENCE SUPPRESSION BY EXPLOITING THEIR GEOMETRICAL FEATURES .................. 311
Nicoletta Saulig, Victor Sucic and Boualem Boashash

AN EFFICIENT DESIGN OF FRACTIONAL LEAD FILTER VIA FRACTIONAL ORDER SYSTEM .................................................................................. 315
Tahar Bensouici and Abdelfatah Charef

MPEG-4 AVC RE-ENCODING FOR WATERMARKING PURPOSES ................................................................. 319
Mihai Mitrea, Ramarao Ganji, Maher Belhaj and Francoise Preteux

TRELLIS CODED QUANTIZATION BASED WATERMARKING SCHEME PERFORMANCES IN AN INDEPENDENT DOMAIN ........................................... 323
Claude Delpha, Ilhem Benkara Mostefa, Sofiane Braci, Remy Boyer and Mohamed Khamadja

DOPING AND WITNESS WATERMARKING FOR AUDIO PROCESSING ................................................................. 327
Sonia Djaziri Larbi, Gael Mahe, Imen Marrakchi, Monia Turki and Meriem Jaidane

A ROBUST-TRANSPARENT WATERMARKING SCHEME BASED ON PERCEPTUAL MODELING ................................................................. 331
Nguyen Nguyen, Azeddine Beghdadi and Marie Luong

A POST-DETECTION MAXIMUM RATIO COMBINER: EXPERIMENTAL ASSESSMENT ON HIGH DIVERSITY UNDERWATER
ANTONIO SILVA AND SERGIO JESUS
TURBO MULTIUSER DETECTORS FOR IDMA-BASED UNDERWATER COMMUNICATIONS ................................................................................................................................... 337
CHARALAMPOS TSIremenidis, Aliesawi Aliesawi and Bayan Sharif

A NEW TOASĂ€ CACFAR WIENER RAKE ESTIMATOR FOR DOWNLINK MOBILE POSITIONING IN UMTS-FDD SYSTEM ......................................................................................................................... 341
Abdelouahab Boudjellal, Adel Belouchrani and Karim Abed-Meraim

ADAPATIVE BLIND ESTIMATION OF SPARSE SIMO CHANNELS ................................................................................................................................... 350
Abdeijalil Aissa-El-Bey, Karim Abed-Meraim and Christophe Laot

HIDDEN BIOMETRICS: TOWARDS USING BIO SIGNALS AND BIOMEDICAL IMAGES FOR SECURITY APPLICATIONS ......................................................................................................................... 354
Nait-Ali Amine

ABNORMAL TISSUS EXTRACTION IN MRI BRAIN MEDICAL IMAGES ................................................................................................................................... 359
Dalila Cherifi, Mohamed Zinelabidine Doghmane, Nait-Ali Amine, Zakia Aici and Salim Bouzelha

AN ITERATIVE SPEECH ENCRYPTION SCHEME BASED ON SUBSPACE TECHNIQUE ................................................................................................................................... 363
Atif Mermoul

SOME ISSUES AND SCENARIOS ON COGNITIVE RADIO AND UWB TECHNOLOGY CONVERGENCE FOR ENABLING GREEN NETWORKS ................................................................................................................................... 367
Aawatif Haya

A SINGLE-TARGET TRACKING ALGORITHM IN CONTROLLED MOBILITY SENSOR NETWORKS ................................................................................................................................... 373
Farah Mourad, Hicham Chehade, Hichem Snoussi, Farouk Yalaoui, Lionel Amodeo and Cedric Richard

AN IMPLEMENTATION OF ENERGY-BASED DYNAMIC ROUTING FOR WIRELESS SENSOR NETWORKS ................................................................................................................................... 377
Esseghir Moez

ON THE DIVERSITY OF THE NAIVE LATTICE DECODER ................................................................................................................................... 381
Asma Mejri, Laura Luzzi and Rekaya Ben Othman

DISTRIBUTED DETECTION OF MOVING TARGET USING MIMO RADAR IN CLUTTER WITH NON-HOMOGENEOUS POWER ................................................................................................................................... 385
Pu Wang, Hongbin Li and Braham Himed

WIRELESS SENSOR NETWORKS IN BIOMEDICAL: BODY AREA NETWORKS ................................................................................................................................... 390
Paul Honeine, Farah Mourad, Maya Kallas, Hichem Snoussi, Hassan Amoud and Clovis Francis
A LARGE SCALE AND LOWCOST SOLUTION FOR REAL-TIME INDOOR LOCALISATION BASED ON WIRELESS SENSOR

Abdelkader Miraoui, Kais Mabrouk, Hichem Snoussi, Asmaa Amerhaye and Jacques Duchene

VEHICLE DETECTION ALGORITHM BASED ON HORIZONTAL/VERTICAL EDGES

Mohammed Boumediene, Abdel Aziz Ouamri and Mokhtar Keche

AN INCREMENTAL PARALLEL NEURAL NETWORK FOR UNSUPERVISED CLASSIFICATION

Amel Hebboul, Meriem Hacini and Fella Hachouf