Session (Oral) WM1: Space Time Coding

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. T. Kirubarajan, McMaster University** **Room: Ontario**

1. A Differential Space-Time Code Receiver using the EM-Algorithm
Michael L.B. Riediger (Simon Fraser University, Canada) and Paul K.M. Ho (Simon Fraser University, Canada) 5165

2. Kalman Filtering for Channel Estimation in Space-Time Coded Systems
Haizhen Jin (McGill University, Canada) and Harry Leib (McGill University, Canada) 5243

3. Space-Time Coding and Signal Space Diversity in the Presence of Channel Estimation Errors
Tolga Kurt (University of Ottawa, Canada) and Hakan Delic (Bogazici University, Turkey) 5272

4. Unitary Space-Time Codes from Group Codes: Permutation Codes Variant II
Terasan Niyomsataya (University of Ottawa, Canada), Ali Miri (University of Ottawa, Canada) and Monica Nevins (University of Ottawa, Canada) 5712

5. Tracking Time-Selective Fading Channels for Space-Time Block Coding in Impulsive Noise
Ziauddin M. Kamran, T.Kirubarajan, and Alex B. Gershman (McMaster University, Canada) 5800

6. Receive Antenna Selection for Space-Time Block Codes
Xiang Nian Zeng (Concordia University, Canada) and Ali Ghrayeb (Concordia University, Canada) 6075

Break : 10:10 – 10:30

7. Capacity of PPM Ultra-Wideband Communications with Inter Pulse Interference
Reza Pasand (University of Calgary, Canada), John Nielsen (University of Calgary, Canada), Abu B. Sesay (University of Calgary, Canada) 7028

8. Single-Carrier Concatenated Space-Time Block Coded Transmissions over Selective -Fading Channels
Tuan Tran(University of Calgary, Canada), Tung X. Lai (University of Calgary, Canada) and Abu B. Sesay (University of Calgary, Canada) 6159

9. Improved Space-Time Trellis Codes with Three and Four Transmit Antennas
David Bernier (Royal Military College, Canada) and Francois Chan (Royal Military College, Canada) 6816

10. Iterative Decoding Algorithm of Lattices
Mohammad Reza Rafsanjani Sadeghi (Carleton University, Canada), Amir H. Banihashemi (Carleton University, Canada) and Daniel Panario (Carleton University, Canada) 6094

11. Computer Design of Super-Orthogonal Space-Time Trellis Codes
Brady Laska (Royal Military College, Canada), Dustin Dunwell (Royal Military College, Canada), Francois Chan (Royal Military College, Canada) and Hamid Jafarkhani (University of California at Irvine, USA) 6888

Session (Oral) WM2: CDMA Systems / Advanced Coding

Wednesday, May 5, 2004 **TIME: 8:10 -12:10**

CHAIR: **Dr. A. Mirbagheri, University of Toronto** **Room: Chippawa**

1. Reverse-Link Power Allocation in Two-Hop Multimedia CDMA Networks
Dave Walsh and Halim Yanikomeroglu (Carleton University, Canaa) 6053
2. Performance of Multicode DS/CDMA with Noncoherent M-ary Orthogonal Modulation in the Presence of Timing Errors
Cyril-Daniel Iskander (Florida Atlantic University, USA) 6092
3. An Improved Widely Linear Receiver for Cyclostationary CDMA Systems with OQPSK Modulation
Arash Mirbagheri , Konstantinos N. Plataniotis and Subbarayan Pasupathy (University of Toronto, Canada) 6467
4. BER Performance of STBC over Frequency Selective Fading Channels in the Downlink WCDMA System
Tung X. Lai and Abu B. Sesay (University of Calgary, Canada) 6173
5. An Iterative MMSE-Decision Feedback Multiuser Detector for Space-Time Coded Multicarrier CDMA System
Padam L. Kafle, Abu B. Sesay and J. McRory (TRLabs, Calgary, Canada) 6968
6. A Linear Decoder for Vector Quantization over a CDMA Channel
Ha H. Nguyen (University of Saskatchewan, Canada) 6852

Break : 10:10 – 10:30

7. Codesign Implementation of a 3G Base Station Receiver
Sébastien Jomphe and Jean Belzile (Ecole de Technologie Supérieure, Canada), Sofiène Affes (Institut national de la recherche scientifique, énergie, matériaux et télécommunications) and Karim Cheikhrouhou (Institut national de la recherche scientifique, énergie, matériaux et télécommunications) 6007
8. Signal Mappings of 8-ARY Constellations for BICM-ID Systems over a Rayleigh Fading Channel
Nghi Tran (University of Saskatchewan, Canada) and Ha Nguyen (University of Saskatchewan, Canada) 6471
9. A Novel Context Modeling Scheme for Motion Vectors Context-Based Arithmetic Coding
Mahmoud Ghandi (Sharif University of Technology, Iran), Mohammad Mahdi Ghandi (University of Essex, UK) and Mohammad Bagher Shamsollahi (Sharif University of Technology, Iran) 6713
10. A Union Bound Based Evaluation Technique for Convolutionally and Turbo Coded Communication Systems
Bo Xu (McGill University, Canada) and Jan Bajcsy (McGill University, Canada) 6970
11. A Multi-wavelet Packet Modulation in Wireless Communications
Mingli You (Dalhousie University, Canada) and Jacek Ilow (Dalhousie University, Canada) 7302

Session (Oral) WM3: Internetworking and Protocols

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. Ganesh Babu, Ryerson University** **Room: Canadiana**

1. SDL Modeled Hybrid Error Control Scheme for Reliable Multicast over Internet
Bo Rong , Alain Servais , Maria Bennani(Universite du Quebec, Canada), Ahmed Elhakeem (Concordia University, Canada) and Michel Kadoch (Universite du Quebec, Canada) 5511

2. An IP Traceback Mechanism for Reflective DoS Attacks
Bao-Tung Wang (Columbia University) and Henning Sehulzrinne (Columbia University) 5885

3. An Approach to Solving a Multicasting Scalability Issue in MPLS Networks Using State Encoding
Omar Banimelhem (Concordia University, Canada), J. William Atwood (Concordia University, Canada) and Anjali Agarwal (Concordia University, Canada) 6583

4. Multicasting with Delay and Delay Variation Constraints Using Genetic Algorithm
Moussa Hamdan and Mohamed El-Hawary (Dalhousie University, Canada) 7301

5. Agent -Based Resource Management in Hybrid Wireless Networks
Rajeev Babbar (University of Calgary, Canada), Abraham O. Fapojuwo (University of Calgary, Canada) and Behrouz H. Far(University of Calgary, Canada) 6050

6. Enhanced Pollinng Scheme with IEEE 802.11a WLAN
Taekon Kim, Chang Yeul anc Chil-Youl Ynag (Samsung Elctronics Co.) 5205

Break : 10:10 – 10:30

7. Session-based Service Discovery in Peer-to-Peer Communications
Ramiro Liscano (University of Ottawa, Canada), Allan Jost and Anand Dersingh (Dalhousie University, Canada) and Hao Hu (Intel China Ltd., China) 6119

8. Average Degradation Degree Fair Adaptation Algorithm in Wireless Network with Mobile Hosts
Floriano De Rango (University of Calabria, Italy), G. Aloi (University of Calabria, Italy) and S. Marano (University of Calabria, Italy) 6974

9. A Proposed Protocol for Internet Key Exchange (IKE)
Hossein Haddad (Isfahan University of Technology, Iran), Mehdi Berenjkoub (Isfahan University of Technology, Iran) and Saeed Gazor (Queens University, Canada) 6706

10. An Integrated Scheduling and Buffer Management Scheme for Packet-Switched Routers
Ren-Jie Pi Beijing, Junde Song, Meina Song (Beijing University of Posts and Telecommunications, China) 5646

11. Multipath Traffic Distribution in MPLS Network
Zenghua Zhao (Tianjin University, China) and Yantai Shu (Tianjin University, China) 5785

Session (Oral) WM4: Biomedical Image Analysis

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. A. Alder, University of Ottawa** **Room: Hennipen South**

1. Evaluation of Hierarchical Elastic Medical Image Registration Method
Xiaoyan Xu (University of Guelph, Canada) and Robert D. Dony (University of Guelph, Canada) 6047

2. Images Can be Regenerated from Quantized Biometric Match Score Data
Andy Adler (University of Ottawa, Canada) 5599

3. Lossy Compression of DNA Microarray Images
Naser Faramarzpour (McMaster University, Canada), Shahram Shirani (McMaster University, Canada) and M. Jamal Deen (McMaster University, Canada) 5820

4. Compression of 3D Facial Data
In-Su Park (McMaster University, Canada), Shahram Shirani (McMaster University, Canada) and David W. Capson (McMaster University, Canada) 5992

5. Neural Network Texture Segmentation in Equine Leg Ultrasound images
Qi Huang (University of Guelph, Canada) and Robert D. Dony (University of Guelph, Canada) 6040

6. Gait Analysis and Recognition using Angular Transforms
Nikolaos V. Boulgouris (University of Toronto, Canada), Konstantinos N. Plataniotis (University of Toronto, Canada) and Dimitris Hatzinakos (University of Toronto, Canada) 6057

Break : 10:10 – 10:30

7. A Fuzzy Classifier Approach to Assessing the Progression of Adolescent Idiopathic Scoliosis from Radiographic Indicators
Peter O. Ajemba (University of Alberta, Canada), Lino Ramirez (University of Alberta, Canada), Nelson G. Durdle (University of Alberta, Canada), Doug L. Hill (Glenrose Rehabilitation Hospital, Canada) and V. J. Raso (Glenrose Rehabilitation Hospital, Canada) 6115

8. Semi Real-time algorithm for Posture Estimation of the Human Face using a 3-D Reference Picture
Daisuke Takahashi (Kanto Gakuin University, Japan) and Noriyoshi Okamoto (Kanto Gakuin University, Japan) 5891

9. ECG Signal Compression by Using Multiquadric Interpolation
Pond Boonyaves (Chulalongkorn University, Thailand), Porntip Paisalsing (Chulalongkorn University, Thailand), Pian Totarong (National Institule of Metrodoloy, Thailand) and Somchai Jitapunkul (Chulalongkorn University, Thailand) 5896

10. Modeling Human Body Effects for Indoor Radio Channel using UTD
Mohamad Ghaddar (University of Quebec, Canada), Larbi Talbi (University of Quebec - Outaouais, Canada), Tayeb A. Denidni (University of Quebec, Canada), Alain Charbonneau (Université du Québec en Outaouais, Canada) 6074

Session (Oral) WM5: RF Circuits

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. A. B. Kouki, Ecole de Technologie Superieure** **Room: Auditorium**

1. Design Issues of Direct Conversion Radio Frequency Receivers in SiGe Technology
Roghoyeh Salmeh, Brent J. Maundy and Ronald H. Johnston (University of Calgary, Canada) 4315
2. Design and Realization of a RF Transceiver for Marine Identification Systems
Mohamad El-Asmar (Ecole de Technologie Superieure, Canada) and Ammar B. Kouki (Ecole de Technologie Supérieure, Canada) 5664
3. Physics-Based Analysis of Variable RF MEMs Capacitors
Kousseil Ben Ahmed (Ecole de technologie supérieure, Canada), Ammar B. Kouki (Ecole de Technologie Supérieure, Canada) and A. Khebir (Ecole de Technologie Supérieure, Canada) 5823
4. Low-Voltage, Low-Power and Low Phase Noise 2.4 GHz VCO for Medical Wireless Telemetry
Ahmed Fakhr, M. Jamal Deen and Hubert deBruin (McMaster University, Canada) 6058
5. A Low- power 5 Mb/s turbo Decoder for Third -Generation Wireless Terminals
Ibrahim Al-Mohandes and Mohamed Elmasry (University of Waterloo, Canada) 7482
6. A Bipolar Voltage Variable Attenuator for Radio Frequency Applications
You Zheng and Carlos E. Saavedra (Queen's University, Canada) 4813

Break : 10:10 – 10:30

7. Low-Power and High-Speed Digital Correlator for Radio Astronomy
Christoph Spuhler (University of Rochester, USA), Yi Chang (University of Rochester,USA), Martin Margala (University of Rochester, USA), Brent Carlson (Herzberg Institute of Astrophysics, Canada) and Peter Dewdney (Herzberg Institute of Astrophysics, Canada) 6191
8. An Adaptive Algorithm for Efficient Electromagnetic Field Calculations
Mina Ayatollahi (University of Waterloo, Canada) and Safieddin Safavi-Naeini (University of Waterloo, Canada) 6947
9. Low-Voltage and Low-Power 1.9GHz Body-Input Dowconversion Mixer
Nabeel Jafferali (McMaster University, Canada) and M. Jamal Deen (McMaster University, Canada) 6093
10. A Clock Frequency Doubler using a Passive Integrator and Emitter-Coupled Comparator Circuit
Carlos E. Saavedra and Yang Zhang (Queen's University, Canada) 5042
11. A Flexible Digital Platform for Real-Time Control of RF Components with Application to MIMO Channel Emulation
Pierre-Paul Carpentier (École de technologie supérieure, Canada), Ammar Kouki (Ecole de Technologie Supérieure, Canada) and Claude Thibeault (École de technologie supérieure, Canada) 5793

Session (Oral) WM6: Signal Processing

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. L. Guan, Ryerson University** **Room: Hennipen North**

1. A New Rate Adaptation Framework for MPEG-4 FGS Video over IP
Colin Huang (Ryerson University), Canada and Ling Guan (Ryerson University), Canada 6154
2. Choice of Threshold of the Huber-Markov Prior in MAP Based Video Resolution Enhancement
Hu He (State University of New York at Buffalo, USA) and Lisimachos P. Kondi (State University of New York at Buffalo, USA) 5841
3. Algorithms for Estimating Information Distance with Application to Bioinformatics and Linguistics
Alexei Kaltchenko (Wilfrid Laurier University) 6949
4. FFT Filter Bank based Majority and Summation CFAR Detectors: A Comparative Study
Sichun Wang and Robert Inkol ((Defence Research and Development Canada) 5944
5. Probability Distribution of Speech Signal Envelope
Saeed Gazor (Queens University) and Reza Rashidi Far (Queen's University) 6964
6. A Relationship between the Structures of the Radix-2 DIT FHT and Complex-Valued FFT Algorithms
Saad Bouguezel (Concordia University, Canada), M.O. Ahmad (Concordia University, Canada) and M.N.S Swamy (Concordia University, Canada) 5975

Break : 10:10 – 10:30

7. Multifractal Characterization for Classification of Network Traffic
Robert L. Barry (University of Manitoba, Canada) and Witold Kinsner (University of Manitoba, Canada) 6112
8. A Comparative Study of FFT-Summation and Polyphase-FFT CFAR Detectors
Robert Inkol and Sichun Wang (Defence Research and Development Canada) 6000
9. A Switching Constant False Alarm Rate Technique for High Frequency Surface Wave Radar
Xiaoli Lu (University of Victoria, Canada), Jian Wang (Raytheon Canada Ltd., Canada), Reza Dizaji (Raytheon Canada Ltd., Canada), Zhen Ding (Raytheon Canada Ltd., Canada) and A. M. Ponsford (Raytheon Canada Ltd., Canada) 6811
10. Analysis of Clutter Distribution in Bistatic High Frequency Surface Wave Radar
Jian Wang (Raytheon Canada Ltd., Canada), Reza Dizaji (Raytheon Canada Ltd., Canada) and A. M. Ponsford (Raytheon Canada Ltd., Canada) 6052
11. A Novel Parameter Update Procedure based on Minimizing the Empirical Probability of Error
Haosheng Zhou (University of Winnipeg, Canada) 5112

Session (Oral) WM7: Information and Intelligent Systems

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. M. Maheswaran, McGill University** **Room: Haida**

1. Evaluation of Request Distribution Schemes for Web-Server Clusters
Ramandeep Bhinder (TRLabs, Canada), Muthucumaru Maheswaran (McGill University, Canada) and Jeff Diamond (TRLabs, Canada) 6171

2. Knowledge Representation and Processing in Intelligent Software Measurement System (ISMS)
Tong Chen (University of Calgary, Canada) and Behrouz Homayoun Far (University of Calgary, Canada) 5578

3. Decision Support and -Automation for Malfunction Handling and Optimization in a Feedback Production Control System for Complex Production Facilities
Clemens Martin (University of Ontario Institute of Technology, Canada) 6157

4. Information Estimations of Complexity Structures
Alexander Shaydurov (McGill University, Canada) 5345

5. An Application of Decision Support to Network Intrusion Detection
Hongyu Yang (Tianjin University, China), Lixia Xie (University of China, China) and Jizhou Sun (Tianjin University, China) 6299

6. Ontology-Based Intelligent Information Retrieval System
Wenjie Li (Tianjin University, China), Zhiyong Feng (Tianjin University, China), Yong Li (Tianjin University, China) and Zhoujun Xu (Tianjin University, China) 5441

Break : 10:10 – 10:30

7. Specification of Design Patterns using Real-Time Process Algebra (RTPA)
Vu Nguyen-Cong (Nong Lam University, Viet Nam and Yingxu Wang (University of Calgary, Canada) 6142

8. Application de L' Adressage Physique Rapide A L' Architecture de Visualisation dans les Systemes A Microprocesseur
Mountassar Maamoun, Blida University) and Boualem Laichi (Departement dInformatique, USTHB) 6662

9. Design of Dual Port RAM for Parallel Volume Rendering System
Xiaotu Li, Jizhou Sun, Weifang Nie (Tianjin University, China) and Yurong Wang (Capital University of Economics and Business, China) 5155

10. Considerations for the Development of Large Scale Mobile Network Management System
Man Yi , Shang Jing , Song Junde and Song Mei (Beijing University of Posts and Telecommunications, China) 5984

Session (Oral) WM8: Power Systems Stability and Renewable Energy Systems

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. B. Wu, Ryerson University** **Room: Cree**

1. Damping Power System Oscillations Using a Genetic Algorithm Based Unified Power Flow Controller
Sherif O. Faried and Amr A. Eldamaty (University of Saskatchewan, Canada) 4349

2. The Effect of Capacity Gaming on the Cost of System Reliability
Donald McGillis Ian Fichtenbaum, Markian Michailuk and Francisco Galiana (McGill University, Canada) 5889

3. A Doubly-Fed Induction Machine and Energy Storage System for Wind Power Generation
Chad Abbey and Geza Joos (McGill University, Canada) 5954

4. Islanding Protection Evaluation of Inverter-based Grid-connected Hybrid Renewable Energy System
Mamadou Lamine Doumbia, Kodjo Agbossou and Tapan K. Bose (Université de Quebec à Trois-Rivieres, Canada) 5966

5. Parameterize Pre-Compensator Design for Static Synchronous Series Compensator (SSSC)
Jafar Ghaisari (Isfahan University of Technology, Iran) and Alireza R. Bakhshai (Queen's University, Canada) 6174

6. Investigation of Self-Excited Induction Generators for Wind Turbine Applications
Mohamed Orabi (Kyushu University, Japan), Mohamed Z. Youssef (Queen's University, Canada) and P. K. Jain (Queen's University, Canada) 6544

Break : 10:10 – 10:30

7. Energy Optimization in Rapid Flow Variation Systems
Kaushik Bhattacharjee (Senior Member, IEEE), Alok Goyal (TERI), Suman Mazumdar (Flaktt India), Manish Kumar (IIT Kharagpur, India) 6521

8. Domain of Stability of AC/DC Power Systems
Nilkamal Fernandopulle (Independent Electric Market Operator) and Robert T.H. Alden (Bob Alden Technologies) 5546

9. A Neuro-optimal Control Power System Stabilizer: A Comparative Study
Mohamed Z. Youssef (Queen's University, Canada), Praveen K. Jain (Queen's University, Canada), Elsayed Abdelaleem Mohamed (Ain Shams University, Egypt) and Mohamed Orabi (Kyushu University, Japan) 4284

10. Relationship of Chaos and Small Signal Stability Region
Jia Hongjie (Tianjin University, China), Yu Yixin (Tianjin University, China), Zhang Pei (EPRI, USA) Yu Xiaodan (Tianjin University, China), Huang Chunhua (Tianjin University, China) 4627

11. Effect of the Fuel Cell on Distribution System Stability
Francisco Jurado, Manuel Valverde (University of Jaen) , Jose Carpio (U. Nacional de Education) 4263

Session (Oral) WM9: Control Systems I

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: TBA **Room: Tuscarora**

1. Model Predictive Control for Bilateral Teleoperation Systems with Time Delays
Jie Sheng (University of Illinois at Urbana-Champaign, USA) and Mark W. Spong (University of Illinois at Urbana-Champaign, USA) 6555

2. On Identification of Non-linear Two-Channel Hammerstein Systems
Mirek Pawlak (University of Manitoba, Canada) and Ruixiang Song (University of Manitoba, Canada) 5282

3. A new Z-domain Continued Fraction Expansion and its use in the Generation of Stable Transfer Functions
Venkatanarayana Ramachandran (Concordia University, Canada), Ling Luo (Concordia University,Canada) and C.S. Gargour (University of Quebec, Canada) 5300

4. Effects of Control Systems Time Delay on The Performance of Direct Harmonics Elimination
Jenny Zheng Zhou (Manitoba HVDC Research Centre, Canada), Athula Rajapakse and Aniruddha M. Gole (University of Manitoba, Canada) 5725

5. Performance of a Non Linear Controller Based IPMSM Drive
Jason Lau (Lakehead University, Canada) and Mohammad N. Uddin (Lakehead University, Canada) 5828

6. Control Schemes for Stabilization of Force-Reflecting Teleoperators with Communication Delay
Ilia G. Polushin (Lakehead University, Canada), Abdelhamid Tayebi (Lakehead University, Canada) and Horacio J. Marquez (University of Alberta, Canada) 6874

Break : 10:10 – 10:30

7. An Algorithm for Locating Microseismic Events
Brian L. F. Daku (University of Saskatchewan, Canada), J. Eric Salt (University of Saskatchewan, Canada), Li Sha (University of Saskatchewan, Canada) 6978

8. Using Model Predictive Control for Real-Time Control over the Internet
Samer Mansour (Dalhousie university, Canada), Bill Robertson (Dalhousie University, Canada), Bill Phillips (Dalhousie University, Canada) and Guy Kember (Dalhousie University, Canada) 5855

9. An Integrated Robotic Laser Range Sensing System for Automatic Mapping of Wide Workspaces
Phillip Curtis (University of Ottawa, Canada) and Pierre Payeur (University of Ottawa, Canada) 5983

10. An Architectural Framework for a Distributed Process Control Information System
Varanon Uraikul (University of Regina, Canada), Christine Chan (University of Regina, Canada) and Paitoon Tontiwachwuthikul (University of Regina, Canada) 6079

11. Mobile Robot Position Determination Using Data from Gyro and Odometry
Farouk Azizi (Purdue University Calumet, USA) and Nasser Houshangi (Purdue University Calumet, USA) 5814

Session (Oral) WM10: Electric Machines and Motor Drives

Wednesday, May 5, 2004 **TIME: 8:10 – 12:10**

CHAIR: **Dr. A. Rajapakse, University of Manitoba** **Room: Oneida**

1. Development and Interfacing of a Generic Switched Reluctance Motor Model for an EMTP
Athula D. Rajapakse (University of Manitoba, Canada), Aniruddha M. Gole (University of Manitoba, Canada) and Dharshana Muthumani (Manitoba HVDC Research Center, Canada) 5225

2. Experimental Methods for Measuring the q-Axis Saturation Characteristics of Synchronous Machines
Narayan C. Kar (University of Windsor, Canada) and Ahmed M. El-Serafi (University of Saskatchewan, Canada) 5519

3. Performance Analysis of a Reluctance Synchronous Motor Under Abnormal Operating Condition
Prabhakar Neti (University of Victoria, Canada) and Subhasis Nandi (University of Victoria, Canada) 5694

4. Power Transformer Critical Diagnostics for Reliability and Life Extension
Muhammad Arshad (American University of Sharjah) and Syed M. Islam (Curtin University of Technology, Australia) 5734

5. Saturation in Synchronous Generators During Unbalanced Faults
Kwok-Wai Louie (Manitoba HVDC Research Centre, Canada) and Jose R. Marti (University of British Columbia, Canada) 5853

6. Finite Element Analysis of Shaft Eddy Currents in High Speed Asynchronous Machines
Erich Schmidt (Vienna University of Technology, Austria) 5925

Break : 10:10 – 10:30

7. Alternative Network Element Sets
J. J. Narraway, University of New Brunswick, Canada 9001

8. Flux Estimation of Induction Machines with the Linear Parameter-Varying System Identification Method
Juntao Pan, David Westwick and Ed Nowicki (University of Calgary, Canada) 6910

9. Impedance Characterization of a Six-Phase Synchronous Generator-Rectifier System Using Average-Value Model
Juri Jatskevich and Tarek Aboul-Seoud (University of British Columbia, Canada) 6929

10. Performance Analysis of a 4-Switch, 3-Phase Inverter Based Cost Effective IPM Motor Drives
Mohammad Nasir Uddin (Lakehead University, Canada), Tawfik S. Radwan (Memroial University of Newfoundland , Canada) and M. A. Rahman (Memroial University of Newfoundland , Canada) 4639

Session (Oral) WA1: Circuits and Applications

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: **Dr. D. Dodds, University of Saskatchewan** **Room: Ontario**

1. Pixel Architectures for Digital X-Ray Mammography in Crystalline Silicon Technology
Mohammad Hadi Izadi and Karim S. Karim (Simon Frase University) 6320

2. Symbolically Defined Empirical Large-Signal Model for HBTs Compared to the Gummel-Poon Model
Ammar Issaoun (École de Technologie Supérieure, Canada), A.B. Kouki (École de Technologie Supérieure, Canada) and F.M. Ghannouchi (École Polytechnique, Canada) 4203

3. Reducing the Temperature Effect on a CMOS Transconductance and its Application in g-C Filters
Yuelin Cui and R. Raut (Concordia University, Canada) 5446

4. Single-Ended DSL Line Tester
Bernado Celay and David Dodds (TRLabs/Univesity of Saskatchewan, Canada) 6869

5. Custom Column Readout Circuitry to Extend the Dynamic Range of a Si:H Current Mediated Pixel Amplifiers for Large Area Diagnostic X-Ray Imaging Applications
Tony Ottaviani and Karim S. Karim (Simon Fraser University, Canada) 6316

6. Sources of Linearity Degradation in LINC Transmitters for Hybrid and Outphasing Combiners
Ahmed Birafane (Ecole de Technologie Supérieure, Canada) and Ammar B. Kouki (Ecole de Technologie Supérieure, Canada) 5668

7. A Multi Frequency Fresenel Lens using a Perforated Dielectric
Irfan Kadri (Carleton University, Canada), Mike Britton (Ellistar Sensor Systems), Langis Roy (Carleton University, Canada) 5888

Session (Oral) WA2: Communications & Networking

Wednesday, May 5, 2004 TIME: 13:00 – 15:20

CHAIR: Dr. L. Zhao Room: Canadiana

1. Blind Decision Feedback Equalizer based on High Order MCMA
Idir Chahed (Ecole de Technologie Supérieure, Canada), Jean Belzile (Ecole de Technologie Supérieure, Canada) and Ammar B. Kouki (Ecole de Technologie Supérieure,Canada) 6843

2. A Postprocessor for an Interval-Based M-ary Detection System that Monitors Long-Duration Input
Erin R. Budd (University of New Brunswick, Canada) and Maryhelen Stevenson (University of New Brunswick, Canada) 5936

3. Characteristic function approach for higher order crossings with application for speed estimation
Lian Zhao (Ryerson University, Canada) 7543

4. Approximation of Phase and Envelope Distribution of Gaussian Random Amplitude-Modulated Signals
Stephen H. Sung (Calian Ltd., Canada) and Yifeng Zhou (Defence R&D Canada) 6372

5. Performance Analysis of Certain Scheduling Disciplines in Hardware
Padmini Vellore (Memorial University of Newfoundland, Canada) and R. Venkatesan, (Memorial University of Newfoundland, Canada) 5813

6. Packet Loss Probability for DiffServ over Heterogeneous MPLS Multicast Networks : A Simulation Study
Abdullah AlWehaibi (Concordia University, Canada), Michel Kadoch (Ecole de technologie superieure, Canada) and Ahmed ElHakeem (Concordia University, Canada 6909

7. A New Method in Blind Estimation of Fast Time-Varying Channels Based on Subspace Method
AmirReza Momen (Iran Telecommunication Research Center (ITRC), Iran), Saeed Masajedian(Iran Telecommunication Research Center (ITRC), Iran), Yasin Miar (Iran Telecommunication Research Center (ITRC), Iran) and Jahangir Dadkhah Chime (Iran Telecommunication Research Center (ITRC), Iran) 6627

Session (Oral) WA3: Robotics and Control

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: **Dr. A. Bot, GS Research and Consulting** **Room: Hennipen North**

1. Robot Path Planning with Multiresolution Probabilistic Representations: A Comparative Study
Martin Soucy (University of Ottawa, Canada) and Pierre Payeur (University of Ottawa, Canada) 5980

2. Microscopic Dynamics of Cytobots
Blake W. Podaima (TRLabs, Canada) and Thuraiappah Vaseeharan (TRLabs, Canada), Richard Gordon (TRLabs, Canada) 6137

3. Advanced Robotics Mechatronics System: Emerging Technologies for Interplanetary Robotics
George Bailak (MD Robotics Limited, Canada), Bruno Rubinger (MD Robotics Limited, Canada), Moksoon Jang (University of Toronto, Canada) and Francis Dawson (University of Toronto, Canada) 6716

4. An Improvement of Self-localization for Omnidirectional Mobile Robots using a New Odometry Sensor and Omnidirectional Vision
Hamid Reza Moballegh, Peiman Amini and Yousof Pakzad (University of Ottawa, Isfahan University of Technology) 7011

5. A New Efficient Control Algorithm Using Potential Field: Extension to Robot Path Tracking
Gong Cheng (Dalhousie University, Canada), Jason Gu (Dalhousie University, Canada), Tao Bai (Dalhousie University, Canada) and Osama Majdalawieh (Dalhousie University, Canada) 6725

6. Numerical Simulation of a Multipowered Onboard Drive Train
Raphael Roy (Université de Moncton, Canada) and Jamel Ghouili (Université de Moncton, Canada) 6801

7. SDI-12 based Turbidity Measurement System with Field Calibration Capability
Jose Pereira (ESTSetúbal), Octavian Postolache (Institute of Telecomunication - IST), Pedro Girão (Instituto de Telecomunicações) and Helena Ramos (Instituto de Telecomunicações) 6661

Session (Oral) WA4: Control Systems II

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: G. Swick **Room: Tuscarora**
Niagara College

1. On the Debugging of a High Clutter Tracking System
Zhen Ding (Raytheon Canada Ltd, Canada) 6833

2. A Decision Support System for Oil Production Prediction
Hanh H. Nguyen (University of Regina, Canada), Christine W. Chan (University of Regina, Canada) and Micheal Monea (Petroleum Technology Research Center, Canada) 6086

3. Agent-based Resource Management for Smart Robotic Sensors
Abderrahmane Assal (University of Ottawa, Canada) and Voicu Groza (University of Ottawa, Canada) 6931

4. Genetic Algorithm for Dynamic Path Planning
Ahmed Elshamli (University of Guelph, Canada), Hussein Abdullah (University of Guelph, Canada), Shawki Areibi (University of Guelph, Canada) 5797

5. Tension Control Loop Using a Linear Actuator Based on the Energetic Macroscopic Representation
Christian Thiffault (Université du Québec à Trois-Rivières, Canada), Pierre Sicard (Université du Québec à Trois-Rivières, Canada) and Alain Bouscayrol (Université des Sciences et Technologies de Lille, France) 6728

6. A Requirements Interaction Detection Process Guide
Mohamed Shehata (University of Calgary, Canada), Li Jiang (University of Calgary, Canada) and Armin Eberlein (American University of Sharjah, UAE) 6401

7. A Web-Based 3D Virtual Robot Remote Control System
Xiaoli Yang (Lakehead University, Canada), Dorina C. Petriu (Carleton University, Canada), Thom E. Whalen (CRC, Canada), Emil M. Petriu (University of Ottawa) 5898

Session (Oral) WA5: Motor Drives

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: **Dr. R. Alden, McMaster University** **Room: Cree**

1. Fuzzy-Logic-Based Controller For Synchronous Reluctance Motor
Tawfik S. Radwan (Memorial Unievsrity of Newfoundland, Canada), Essam M. Rashad (Memorial University, Canada), Mohammad Nasir Uddin (Lakehead University, Canada) and M. A. Rahman (Memroial University of Newfoundland, Canada) 6371

2. A Comparison between Nonlinear Controllers for Induction Motors based on Different Reference Frames
Azeddine Kaddouri (Université de Moncton, Canada), Jamel Ghouili (Université de Moncton, Canada) and Mohsen Ghribi (Université de Moncton, Canada) 6538

3. Intelligent modeling and control of a pneumatic motor
Rapelang Marumo (University of Sheffield, UK) and O. M. Tokhi (University of Sheffield, UK) 5996

4. Adaptive Fuzzy Variable Structure Control of Induction Motors
Mohammed S. Agamy (Queen's University, Canada), Hasan A. Yousef, (Alexandria University, Egypt) and Omar A. Sebakhy (Alexandria University, Egypt) 4676

5. Real Time Flux and Torque Estimator for Induction Machines
Moussa Zerbo (Université du Québec à Trois-Rivières), Canada, Abdellfattah Ba-Razzouk (Université du Québec à Trois-Rivières), Canada and Pierre Sicard (Université du Québec à Trois-Rivières), Canada 6872

6. High Frequency Characterization of a Via Hole Discontinuity
N. Hassaine, L. Villeneuve and F. Concilio (Harris Corporation, Canada) 5824

Session (Oral) WA6: Agent-based Systems

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: **Dr. K. Plataniotis, University of Toronto** **Room: Haida**

1. Design of a Multi-Agent System for Autonomous Database Administration
Sunitha Ramanujam (University of Western Ontario, Canada) and Miriam A. M. Capretz (University of Western Ontario, Canada) 5997

2. A Collective View and Methodologies for Software Agents' Interaction
Behrouz Homayoun Far (University of Calgary, Canada) 6033

3. An Agent-Based Shopping System
Luigi Benedicenti (University of Regina), Xuguang Chen (University of Regina), Xiaoran Cao (University of Regina) and Raman Paranjape (University of Regina) 5805

4. A Framework for Repurposing Multimedia Content
Mohammod Shamim Hossain, Md. Abdur Rahman, Abdulmotaleb El Saddik (University of Ottawa, Canada) 5904

5. Towards a Multi-domain Semantic Web Application
M. Anwar Hossain, Abdulmotaleb El Saddik and Pierre Levy (University of Ottawa, Canada) 6024

6. Extreme Programming in Global Software Development
Yang Xiaohu, Xu Bin, He Zhijun, (Zhejiang University, China) and Srinivasa R. Maddineni, (SSGM/Securities Trading IT, USA) 6528

7. Self-management model based on Multiagent and Worm Techniques
Ya-Ping Zhang (Tianjin University, China), Jizhou Sun (IBM Lab Center, Tianjin University, China) and Jian Bo Ma (Tianjin University, China) 5491

Session (Oral) WA7: Modeling and Simulation II

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: **Dr. M. Yagoub, University of Ottawa** **Room: Auditorium**

1. An Adaptive Time Step Control Algorithm for Nonlinear Time Domain Envelope Transient
Carlos E. Christoffersen (Lakehead University, Canada) and Jude Alexander (Lakehead University, Canada) 5876

2. Configurable Coprocessing with an ARC-PCI Board
William Bishop (University of Waterloo, Canada), David Grant (University of Waterloo, Canada) and Wayne Loucks (University of Waterloo, Canada) 5918

3. A Temperature dependent Large-Signal Drain Current Neural Model for the Dual-Gate MESFET
Mohammad Abdeen (University of Ottawa, Canada) and M. C. E. Yagoub (University of Ottawa, Canada) 6076

4. A Physics-Based Analytical Model of a GaN/AlGaN HEMT Incorporating Spontaneous and Piezoelectric Polarization
Jonathan C. Sippel (Rochester Institute of Technology, USA), Syed Islam (Rochester Institute of Technology, USA) and Sankha S. Mukherjee (Rochester Institute of Technology, USA) 6088

5. Power MOSFET Macromodel Accounting for Saturation and Quasi Saturation Effect
Wael El Manhawy (Mentor Graphics) and Wael Fikry (Mentor Graphics) 6527

6. A Tool Converting Finite State Machine to VHDL
Amr T. Abdel-Hamid (Concordia University, Canada), Mohamed Zaki (Concordia University, Canada) and Sofiene Tahar (Concordia University, Canada) 6582

7. A CMOS Elliptic Low-Pass Switched Capacitor Ladder Filter for Video Communication Using Bilinear Implementation
Mohammad Moghaddam Tabrizi (University of Tehran, Iran), Amir Amirabadi (University of Tehran, Iran), Mohammad Sharifkhani (University of Waterloo, Canada) and Omid Shoaei (University of Tehran, Canada) 6328

Session (Oral) WA8: Wireless Networks and Applications

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: TBA **Room: Chippawa**

1. The Design of an Architecture for Software Agents on Mobile Platforms
Koragod Saenchai (Khon Kaen University), Luigi Benedicenti (University of Regina, Canada) and Raman Paranjape (University of Regina, Canada) 6083

2. Havana: A Mobile Agent Platform for Seamless Integration with the Existing Web Infrastructure
Qusay H. Mahmoud (University of Guelph, Canada) and Leslie Yu (University of Guelph, Canada) 6035

3. Modeling the Customer Behavior in the Mobile Payment on a non-Connected Vending Machine Platform
Seyed Bahram Zahir Azami (Hivva Technologies, Canada), Nathalie Torabi i (Hivva Technologies, Canada), Mohammad Tanabian (Hivva Technologies, Canada) 5852

4. Reduced Size Cross-Coupled Resonator Bandpass Filters for Wireless Communication Systems
F. Ghanem (INRS-EMT, Canada), T. A. Denidni (INRS-EMT, Canada), G. Y. Delisle (University of Ottawa) 6127

5. TCP Performance Evaluation Over Wireless Networks
Xiaojing He (Tianjin University, China), Linying Xu (Tianjin University, China), Manyun Liu (Tianjin University, China) and Lianfang Zhang (Tianjin University, China) 5914

6. A Distributed -Agent Scheme in Mobile IP Networks
Xuejun Sun (Tianjin University, China), Shengli Li (Tianjin University, China)
Tao Liu (Tianjin University, China), Lianfang Zhang (Tianjin University, China) 5740

7. Research on the SLA-based Service Management in Mobile Communication Network
Song Mei (Beijing University of Posts and Telecommunications, China), Chang Qian (Beijing University of Posts and Telecommunications, China), Song Rongbing (Beijing University of Posts and Telecommunications, China) and Song Junde (Beijing University of Posts and Telecommunications, China) 5927

Session (Oral) WA9: High Speed Circuits and Applications

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: **Dr. J. Deen, McMaster University** **Room: Oneida**

1. A Low -Voltage Current Mode Instrumentation Amplifier Designed in a 0.18-micron CMOS Technology
Evan L. Douglas (University of New Brunswick, Canada), Dennis F. Lovely (University of New Brunswick, Canada) and David M. Luke (University of New Brunswick, Canada) 6417

2. A 12-bit, 50 MS/s SiGe BiCMOS Sample-and-Hold Residue Amplifier
Siddharth Devarajan, Ronald J. Gutmann and Kenneth Rose (Rensselaer Polytechnic Institute, USA) 6048

3. New CML Latch Structure for High Speed Prescaler Design
Muhammad Usama (Carleton University, Canada) and Tad Kwasniewski (Carleton University, Canada) 6592

4. Generation of Analog and Digital Transfer Functions having a Monotonic Magnitude Response
Venkatanarayana Ramachandran (Concordia University, Canada), C. S. Gargour (University of Quebec, Canada) and Ravi P. Ramachandran (Rowan University, USA) 5311

5. Design of a High-Speed (255,239) RS Decoder using 0.18uM CMOS
Anh Dinh and Daniel Teng (University of Saskatchewan, Canada) 6883

6. Synchronous Sequential Circuits Design Using Evolutionary Algorithms
Ahmed T. Soliman (Ain Shams University, Egypt) and Hazem M. Abbas (Mentor Graphics Egypt, Egypt) 6696

7. A 10 b, 40 Msample/s, 25 mW Pipeline Analog to Digital Converter
Amir Amirabadi (University of Tehran, Iran), Mohammad Moghaddam Tabrizi (University of Tehran, Iran), M. Sharifkhani (University of Waterloo, Canada) and Omid Shoaei (University of Tehran, Iran) 6670

Session (Oral) WA10: Signal and Image Processing

Wednesday, May 5, 2004 **TIME: 13:00 – 15:20**

CHAIR: **R. Blake** **Room: Hennipen South**
Niagara College

1. Adaptive Image Restoration Using a Perception Based Error Measurement
Stuart Perry (Canon Information Systems Research Australia, Australia), Pedram Varjavandi (Ryerson University, Canada) and Ling Guan (Ryerson University, Canada) 6163

2. Re-positioning Effects on a Full Torso Imaging System for the Assessment of Scoliosis
Peter O. Ajemba (University of Alberta, Canada), Nelson G. Durdle (University of Alberta, Canada), Doug L. Hill (Glenrose Rehabilitation Hospital, Canada) and V. J. Raso (Glenrose Rehabilitation Hospital, Canada) 6122

3. Volumetric Display of Magnetic Resonance Images using Scopira and OpenGL
Satish B. S. Pallapotu (University of Manitoba, Canada) and Nicolino J. Pizzi (Institute for Biodiagnostics, National Research Council, Canada) 6560

4. An Effective Feature Extraction Algorithm for The Recognition of Facial Expressions
Satoshi Nakamizo (Kogakuin University, Japan), Ken-ichi Haneda (Kogakuin University, Japan) and Osamu Nakamura (Kogakuin University, Japan) 5920

5. Rate-Distortion Optimization of Spatial Filters for Motion -Compensated Video Coding
Vincent Fong (Queen's University, Canada) and Wai-Yip Chan (Queen's University, Canada) 5892

6. Tone Recognition of Thai Continuous Speech Using Fujisaki's Model
Nutthee Ngarmchatetanarom , Ekkarit Maneenoi, Widhyakorn Asdornwised (Chulalongkorn University, Thailand) and Somchai Jitapunkul (Chulalongkorn University, Thailand) 5089

7. New Compactly Supported Scaling And Wavelet Functions Derived From Gegenbauer Polynomials
Luciana R. Soares (Federal University of Pernambuco, Brazil), Helio M. Oliveira (Federal University of Pernambuco, Brazil) and Renato J. de Sobral Cintra (Federal University of Pernambuco, Brazil) 7026

Session (Poster) P01: Application I

Wednesday, May 5, 2004 **TIME: 13:30 – 14:30**

CHAIR: Dr. K. Plataniotis **Room: Oakes Foyer**
Mr. P. Westlind

1. A Novel Reputation System Facilitating Cooperation in Pervasive Wireless Environment
Huiping Sun (Beijing University of Posts and Telcommunications, China)
Junde Song (Beijing University of Posts and Telecommunications, China) 5897

2. Pitch and MFCC Dependent GMM Models for Speaker Identification Systems
Hassan Ezzaidi (Université du Québec à Chicoutimi, Canada) and Jean Rouat (Université de Sherbrooke, Canada) 4257

3. Cramer-Rao Bound for Channel Estimation Errors in Space-time Coding and Modulation
Guihua Kang (Zhejiang University, China), Zhaoyang Zhang(Zhejiang University, China), Peiliang Qiu(Zhejiang University, China) 6395

4. Research on the Session Control Technologies in 3GPP UMTS Networks
Zhou Wenan (Beijing University of Post and Telecom, Beijing, P.R. China), Wang Daoyi (CITIC communications project management Co Ltd.) and Song Junde (Beijing University of Post and Telecom, Beijing, P.R. China) 6687

5. Supporting Traditional IP Applications in Active Networks
Zhigang Jin (Tianjin University, China), Yongmei Luo (Tianjin University, China), Yantai Shu (Tianjin University, China) and Zhifeng Fu (Tianjin University, China) 4989

6. Collaborative Learning System based on Wireless Mobile equipments
Zhaopeng Meng (Tianjin University, China), Jianjun Chu (Tianjin University, China) and Lianfang Zhang (Tianjin University, China) 5619

7. Three Routes to Chaos in Power Systems
Jia Hongjie (Tianjin University, China), Yu Yixin (Tianjin University, China), Yu Xiaodan (Tianjin University, China), Huang Chunhua (Tianjin University, China) Zhang Pei (EPRI, USA) 4629

8. Microprocessor-Based Phase Tracking System for Digital Power Metering
Wu Jiekang (Guangxi University, Zhejiang, China), Long Jun (Guangxi University, China) Liang Ying (Guangxi University, China), J.X. Wang (Guangxi University, China) 3858

9. A Cognitive Map-Based Decision Support Model for Web Resource Management
Yuanyuan Gao (Tianjin University, China), Zhiyong Feng (Tianjin University, China) and Guozheng Rao (Tianjin University, China) 5059

10. A Hybrid and Hierarchical NIDS Paradigm Utilizing Naive Bayes Classifier
Qin Zhao (Tianjin University, China), Jizhou Sun (Tianjin University, China) and Song Zhang (Tianjin University, China) 5064

11. Survey of Collaborative Environments
Andrew Roczniak (University of Ottawa, Canada), Abdulmotaleb El Saddik (University of Ottawa, Canada), Pierre Levy (University of Ottawa, Canada) 5884

12. A New Single Layer Broadband CPW Fed-Printed Monopole Antenna for Wireless Applications
Yacouba Coulibaly (INRS-EMT, Canada), Tayeb A. Denidni (INRS-EMT, Canada), Larbi Talbi (University of Quebec, Canada), Abdel R. Sebak (Concordia University, Canada) 6141

13. Accurate Ray-Tracing Technique for Wall Reflections Modeling
Yongming Huang (University of Quebec - Outaouais, Canada), Larbi Talbi (University of Quebec, Canada), Tayeb A. Denidni (INRS - EMT, Canada) 5794

14. Characteristic-Locus Method in Transient Stability of Power Systems
Francisco Jurado (University of Jaen), Manuel Valverde (University of Jaen), Jose Carpio (Universidad Nacional de Educacion a Distancia) 5151

15. A Static Power Reduction Technique for Ternary Content Addressable Memories
Nitin Mohan (University of Waterloo, Canada), Manoj Sachdev (University of Waterloo, Canada) 5812

16. Dual-wavelength Passively Mode-locked Fiber ring Laser
Zhichao Deng (University of Ottawa, Canada), Jianping Yao (University of Ottawa, Canada) 5861

17. Développement dune méthode MPPT pour les systèmes photovoltaïques
Tahar Tafticht (Université de Québec à Trois-Rivières, Canada), Kodjo Agbossou (Universite du Quebec à Trois-Rivieres, Canada) 5979

18. Caractérisation des Effets de Couplage dans les Circuits Intégrés Micro-Ondes
Mustapha C. E. Yagoub (University of Ottawa, Canada), Prasun Sharma (University of Ottawa, Canada) 6002

19. Respiratory Sounds Classification using Gaussian Mixture Models
Mohammed Bahoura (Université du Québec à Rimouski, Canada), Charles Pelletier (Université du Québec à Rimouski, Canada) 6054

20. The Knowledge Modeling System and its Application
Christine W. Chan (University of Regina, Canada) 6073

21. A New Scheme for Securing Mobile Agents
Behzad Malek (University of Ottawa, Canada), Ali Miri (University of Ottawa, Canada) 6295