



CCECE2002CCGÉI

Canadian Conference on
Electrical and Computer
Engineering

Congrès Canadien en
Génie Électrique et
Informatique

May 12 to 15, 2002

Du 12 au 15 mai 2002

Hotel Fort Garry
Winnipeg, Manitoba, Canada

Final Program

Programme Finale

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CCECE02

Conference Secretariat

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ACKNOWLEDGEMENTS

Editing of any collection of nearly 2,000 pages containing 300 technical papers is a formidable task, and involves many skillful individuals. We would like to single out Ms. Grace McCaskill from the CCECE02 Secretariat who collected not only the abstracts for review, but also the accepted papers, and participated in many other tasks related to the production of the CCECE02 Proceedings, often well past regular working hours and days, with a very positive and supportive attitude.

We would also like to single out Mr. Stephen Dueck, a postgraduate student who often worked deep into the night to complete the required modifications of the front pages of all the papers, producing the master copy of the three volumes on a 1200 dpi printer, and verifying the correctness of all the pages. This was a difficult task as the 300 papers originated from different computers, included many nonstandard fonts and images of different types and formats, and included many equations that did not want to print. His precision and perseverance will stand as an example to many.

Other graduate students also helped us in this CCECE02 Proceedings production tasks, including Michael Potter, Sharjeel Siddiqui, Neil Gadhok, Bin Huang, and Robert Barry.

The design of the soft covers and the CD-ROM label for the printed and electronic versions of the CCECE02 Proceedings has gone through a number of cycles. Since the original idea of placing a synthetic aperture radar (SAR) image of Winnipeg on the covers could not materialize, we included a tranquil picture representing our 100,000 beautiful lakes, as taken by Ken Borton at the Red Rock Lake, MB, in 1999. Both Ken Borton and Jeff Anderson, Internet Innovation Centre, have produced the final soft covers and the CD-ROM label.

We would like to thank Mr. Hakim El Boustani, a graduate student, for his translation of some material into French.

During the preparation to the printing of the CCECE02 Proceedings, useful suggestions were provided by Sheila Campbell, Manager, UMSU Digital Copy Centre.



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CONFERENCE AT-A-GLANCE

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TECHNICAL PROGRAM: CONFERENCE SCHEDULE


Sunday, May 12, 2002	
13h00 - 17h00	• Workshops
17h00 - 20h00	• Registration
18h00 - 20h00	• Reception & Networking

Monday, May 13, 2002	
07h00 - 17h00	• Registration
06h30 - 08h15	• Breakfast & Networking
08h30 - 08h35	• Opening Remarks
08h35 - 09h25	• Plenary Session 1
09h30 - 10h30	• Oral Sessions MM1 to MM4 (12 papers)
10h00 - 12h00	• Poster Session MMP (29 papers)
10h30 - 10h50	• Refreshment Break & Networking
10h50 - 12h30	• Oral Sessions MM5 to MM8 (20 papers)
12h30 - 14h00	• Lunch & Networking
14h00 - 15h20	• Oral Sessions MA1 to MA4 (16 papers)
14h30 - 16h30	• Poster Session MAP (25 papers)
15h20 - 15h40	• Refreshment Break & Networking
15h40 - 17h00	• Oral Sessions MA5 to MA8 (16 papers)
18h00 - 19h00	• Conference Reception
19h00 - 21h00	• Conference Banquet & IEEE Awards

Tuesday, May 14, 2002	
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08h00 - 17h00	• Registration
06h30 - 08h15	• Breakfast & Networking
08h30 - 09h25	• Plenary Session 2
09h30 - 10h30	• Oral Sessions TM1 to TM4 (12 papers)
10h00 - 12h00	• Poster Session TMP (27 papers)
10h30 - 10h50	• Refreshment Break & Networking
10h50 - 12h30	• Oral Sessions TM5 to TM8 (20 papers)
12h30 - 14h00	• Lunch & Networking
14h00 - 15h20	• Oral Sessions TA1 to TA4 (16 papers)
14h30 - 16h30	• Poster Session TAP (28 papers)
14h00 - 16h00	• Tour to Dorsey Converter Station
15h20 - 15h40	• Refreshment Break & Networking
15h40 - 17h00	• Oral Sessions TA5 to TA8 (16 papers)

Wednesday, May 15, 2002	
08h00 - 15h00	• Registration
06h30 - 08h15	• Breakfast & Networking
08h30 - 09h25	• Plenary Session 3
09h30 - 10h30	• Oral Sessions WM1 to WM4 (12 papers)
10h30 - 10h50	• Refreshment Break & Networking
10h50 - 12h30	• Oral Sessions WM5 to WM8 (20 papers)
12h30 - 14h00	• Lunch & Networking
14h00 - 15h20	• Oral Sessions WA1 to WA4 (16 papers)
15h20 - 15h40	• Refreshment Break & Networking
15h40 - 17h00	• Oral Sessions WA5 to WA8 (16 papers)
17h00	• Conference Closes

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TECHNICAL PROGRAM AT A GLANCE

SUNDAY TO WEDNESDAY MAY 12 TO 15, 2002				
TIME	SUNDAY	MONDAY	TUESDAY	WEDNESDAY
06h30-08h15	No CCECE02 Activities	Breakfast & Networking		
08h30-09h25		Plenary Sessions		
09h30-10h30		Oral Sessions MM1-4	Oral Sessions TM1-4	Oral Sessions WM1-4
10h30-12h30		Poster Ses. MMP	Poster Ses. TMP	No Poster Session
10h30-10h50		Refreshment Break & Networking		
10h50-12h30		Oral Sessions MM5-8	Oral Sessions TM5-8	Oral Sessions WM5-8
12h30-14h00		Lunch & Networking		
14h00-15h20		Oral Sessions MA1-4	Oral Sessions TA1-4	Oral Sessions WA1-4
14h00-16h00		Poster Ses. MAP	Poster Ses. TAP	No Poster Session
15h20-15h40		Refreshment Break & Networking		
15h40-17h00	Oral Sessions MA5-8	Oral Sessions TA5-8	Oral Sessions WA5-8	

NOTE

For the complete list of events at the CCECE02, see [Conference Schedule](#).

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TECHNICAL PROGRAM AT A GLANCE

SUNDAY, MAY 12				
TIME	WRKSHP 1	WRKSHP 2	WRKSHP 3	WRKSHP 4
13h00-17h00	W1 Simulation of Power Electronic Circuits using PSCAD	W2 Advances in Telecommunications for the 21st Century: Selected Issues and Approaches	W3 Introduction to OrCAD	W4 Introduction to LabView Programming with Application to Biological Signal Recording and Analysis
14h45-15h15	Refreshment Break & Networking All the workshops will take place at the University of Manitoba			
17h00-20h00	CCECE02 Registration (Fort Garry Hotel)			
18h00-20h00	CCECE02 Reception (Fort Garry Hotel)			

NOTE

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TECHNICAL PROGRAM AT A GLANCE

MONDAY, MAY 13				
TIME	STREAM 1 La Verendrye	STREAM 2 Salon AB	STREAM 3 Tache	STREAM 4 Gateway
06h30-08h15	Breakfast & Networking			
08h30-08h35	Opening Remarks			
08h35-09h25	Plenary Session 1: Neural Networks in Power Systems			
09h30-10h30	MM1 Materials & Instrumentation	MM2 Nanotechnology & Micromachining 1	MM3 Pattern Recognition & Image Analysis 1	MM4 Computer Networks 1: Cellular
10h30-12h30	MMP Poster Session (Provencher, Main Floor)			
10h30-10h50	Refreshment Break & Networking			
10h50-12h30	MM5 Power System Reliability	MM6 Software Engineering	MM7 Filter Design	MM8 Computer Networks 2: Wireless
12h30-14h00	Lunch & Networking			
14h00-15h20	MA1 Analog Electronics	MA2 Computer Hardware 1	MA3 Comm. Systems 1: Future Trends	MA4 Computer Networks 3: Misc.
14h00-16h00	MAP Poster Session (Provencher, Main Floor)			
15h20-15h40	Refreshment Break & Networking			
15h40-17h00	MA5 Electrical Machines 1	MA6 VLSI Systems	MA7 Comm. Systems 2: Novel Applies	MA8 Computer Networks 4: QoS
18h00-19h00	CCECE02 Reception			
19h00-21h00	CCECE02 Banquet & IEEE Awards			

NOTE



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TECHNICAL PROGRAM AT A GLANCE

TUESDAY, MAY 14				
TIME	STREAM 1 La Verendrye	STREAM 2 Salon AB	STREAM 3 Tache	STREAM 4 Gateway
06h30-08h15	Breakfast & Networking			
08h30-08h35	Opening Remarks			
08h35-09h25	Plenary Session 2: Space Activities at Bristol Aerospace			
09h30-10h30	TM1 Reliability Engineering	TM2 Nanotechnology & Micromachining 2	TM3 Pattern Recognition & Image Analysis 2	TM4 Computer Networks 5: Multicast
10h30-12h30	TMP Poster Session (Provencher, Main Floor)			
10h30-10h50	Refreshment Break & Networking			
10h50-12h30	TM5 Power System Protection	TM6 User Interface & Adaptive Systems	TM7 Signal Processing 1	TM8 Computer Networks 6: Mobile
12h30-14h00	Lunch & Networking			
14h00-15h20	TA1 Image Processing 1	TA2 Computer Hardware 2	TA3 Comm. Systems 3: CDMA	TA4 Computer Networks 7: Wireless
14h00-16h00	TAP Poster Session (Provencher, Main Floor)			
15h20-15h40	Refreshment Break & Networking			
15h40-17h00	TA5 Power Electronics	TA6 Real-Time Systems	TA7 Biomedical Signals 1: Analysis	TA8 Computer Networks 8: MPLS
18h00-20h00	Special Event for PhD Students			

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TECHNICAL PROGRAM AT A GLANCE

WEDNESDAY, MAY 15				
TIME	STREAM 1 La Verendrye	STREAM 2 Salon AB	STREAM 3 Tache	STREAM 4 Gateway
06h30-08h15	Breakfast & Networking			
08h30-08h35	Opening Remarks			
08h35-09h25	Plenary Session 3: Biology in Shaping Engineering Profession			
09h30-10h30	WM1 Instrumentation & Sensors	WM2 Computational Intelligence	WM3 Pattern Recognition & Image Analysis 3	WM4 Computer Networks 9: QoS
10h30-12h30	WMP No Poster Session			
10h30-10h50	Refreshment Break & Networking			
10h50-12h30	WM5 Power System Dynamics & Operation	WM6 Electromagnetics & Optics	WM7 Signal Processing 2	WM8 Computer Networks 10: Coding
12h30-14h00	Lunch & Networking			
14h00-15h20	WA1 Antenna Theory, Design & Appls	WA2 Genetic Algorithms & Fuzzy Logic	WA3 Image Processing 2	WA4 Computer Networks 11: Optical
14h00-16h00	WAP No Poster Session			
15h20-15h40	Refreshment Break & Networking			
15h40-17h00	WA5 Electrical Machines 2 / High Voltage	WA6 Circuits & Systems	WA7 Biomedical Signals 2: Classif. & Estimation	WA8 Industrial Applications
17h00	CCECE02 Closes			

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3.1 CCECE02 CONFERENCE COMMITTEE

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3.4 CCECE02 EXHIBITS

Exhibit Schedule

(same schedule on each of Monday, May 13 and Tuesday, May 14):

- | | |
|------------------------|---------------|
| a) Exhibit set-up: | 08h30 - 09h30 |
| b) Exhibit viewing: | 09h30 - 17h30 |
| c) Exhibit knock-down: | 17h30 - 18h30 |

Exhibit Location

All the exhibits will take place at the Hotel Fort Garry.

Exhibitors

- | | |
|----------------------------------|----------------------------------|
| 1. Copperfield's Books | 5. Vansco Electronics |
| 2. Oxford University Press | 6. Norsat International |
| 3. McGraw-Hill Ryerson | 7. Linear Systems |
| 4. John Wiley & Sons Canada Ltd. | 8. Holowick Engineering |
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3.5 CCECE02 REGISTRATION

Registration Schedule

(same schedule on each of Monday, May 13 and Tuesday, May 14):

- | | |
|-----------------------------|---------------|
| a) Sunday, May 12, 2002: | 17h00 - 20h00 |
| b) Monday, May 13, 2002: | 07h00 - 17h00 |
| c) Tuesday, May 14, 2002: | 08h00 - 17h00 |
| d) Wednesday, May 15, 2002: | 08h00 - 15h00 |

Registration Location

All the registration will take place at the Hotel Fort Garry, except for on-site registration for the workshops that will take at the University of Manitoba.

3.6 CCECE02 MEALS & NETWORKING

Full registrants and students registrants will be able to attend all the breakfasts and lunches as well as the banquet.

Meal Schedule

(same schedule on each of Monday to Wednesday, May 13 to 15):

- | | | |
|---------------------------------|-----------|---------------|
| a) Breakfasts | | 06h30 - 08h15 |
| b) Lunches | | 12h30 - 14h00 |
| c) Morning Refreshment Breaks | | 10h30 - 10h50 |
| d) Afternoon Refreshment Breaks | | 15h20 - 15h40 |
| e) Reception (Sunday) | | 18h00 - 20h00 |
| f) Reception (Monday) | | 18h00 - 19h00 |
| g) Banquet (Monday) | | 19h00 - 21h30 |

3.7 CCECE02 MESSAGE CENTRE

High-speed Internet access will be provided for the convenience of all conference registrants in the exhibit area from Monday to Wednesday. However, Internet access will not be available in the session rooms.

3.8 CITY INFORMATION

Information about the City of Winnipeg will be included in the Registrant's Package. Other information about the city's local events, restaurants and travel can be obtained from the Hotel Fort Garry.

3.9 CCECE02 TRANSPORTATION

Transportation Schedule

- | | |
|--|-----------------------|
| a) Airport / Hotels | Arranged individually |
| b) Hotel FG / University of Manitoba (workshops) | Provided by CCECE02 |
| c) Hotel FG / Dorsey (tour) | Provided by CCECE02 |

3.10 CCECE02 WEB SITE

A comprehensive conference Web site has been developed and placed on the IEEE hosting facility. The site has 300 items describing many aspects of the CCECE02. The URL of the site is

<http://ewh.ieee.org/soc/ccece02/>

The home page of the site is shown next.



CCECE'02

CANADIAN CONFERENCE ON
ELECTRICAL & COMPUTER ENGINEERING
May 12 to 15, 2002
Hotel Fort Garry, Winnipeg, Manitoba, Canada

WELCOME to the IEEE CCECE 2002 Web Site.

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C3SEE02

What's New

About this Conference

The annual IEEE Canadian Conference on Electrical and Computer Engineering brings researchers from Canada and around the world to discuss recent developments in electrical and computer engineering. Since the conference covers many topics in electrical and computer engineering, researchers from diverse areas can meet and establish collaborative contacts.

The conference moves between various Canadian cities. For example, the previous three conferences took place in Toronto, May 13 to 16, 2001; Halifax, May 7 to 10, 2000; and Edmonton, May 9 to 12, 1999. We hope that the Winnipeg conference will also be a success.

About this Site

The set of buttons on the left margin will take you to the appropriate topics. The site will expand when new material becomes available.

CONTACTS

eMail:	Secretariat Webmaster
Address:	CCECE02 Secretariat Dept. Electr. & Comp. Eng. University of Manitoba 15 Gillson Street Winnipeg, MB R3T 5V6
Phone:	(204) 474-8097
Fax:	(204) 474-7522

VISIT the IEEE Canada Site

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Netscape Navigator or MS Internet Explorer.
To mimic most of the original documents,
these pages are designed in a portrait orientation.

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IEEE CCECE2002CCGÉI

SPECIAL EVENTS

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Advances in Telecommunications	4.3
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CONFERENCE WORKSHOPS: PSCAD/EMTDC

TITLE
Simulation of Power Electronic Circuits using PSCAD

INSTRUCTOR
Dr. Dharshana Muthumuni
[Manitoba HVDC Research Centre](#)
244 Cree Crescent
Winnipeg, MB R3J 3W1
Phone: (204) 989-1240
Fax: (204) 453-5074
E-mail: info@hvdc.ca

DATE
12 May 2002

TIME
1:00 to 5:00 PM

LOCATION
University of Manitoba
Engineering Bldg.
Fort Garry Campus
Winnipeg, MB R3T 5V6

MAIN TOPICS

1. Introduction to the PSCAD/EMTDC Algorithm
2. Issues with the Modelling of Power Electronic Semiconductor Devices

EXAMPLE STUDIES

1. Modelling an HVDC transmission system
2. Modelling a Static Synchronous Compensator
3. Modelling a PWM Inverter Drive system

DESCRIPTION
The course includes a hands-on component. Each participant will receive a CD with the PSCAD/EMTDC 3.0x personal edition and the example cases. Although computers will be available in the classroom, participants are welcome to bring their own notepad computers.

Minimum requirement: Pentium II and above (or compatible) running MS Windows 98 and above operating systems, with a CD Drive.

MAXIMUM NUMBER OF PARTICIPANTS
12

CONTACT PERSON
[Prof. Ani Gole, Ph.D., P.Eng.](#)
Department of Electrical & Computer Engineering
University of Manitoba
Winnipeg, MB R3T 5V6

FEES
Each workshop requires payment of fees of \$30 / \$50 for IEEE members and students (before March 15 / after March 15) and \$50 / \$80 for IEEE non-members (before March 15 / after March 15). The fee will cover workshop materials and refreshments.

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CONFERENCE WORKSHOPS: TELECOM

TITLE

Advances in Telecommunications for the 21st Century:
Selected Issues and Approaches

INSTRUCTORS

Professors Bob McLeod, Muthucumar Maheswaran, and Ekram Hossain
[Department of Electrical & Computer Engineering](#)
University of Manitoba
Winnipeg, MB R3T 5V6
Phone: (204) 474-9603
Fax: (204) 261-4639

DATE

12 May 2002

TIME

1:00 to 5:00 PM

LOCATION

University of Manitoba
Engineering Bldg.
Fort Garry Campus
Winnipeg, MB R3T 5V6

MAIN TOPICS

1. Part A: TCP/IP and Transport Layer Enhancements
2. Part B: Next-Generation Middleware Platforms
3. Part C: MAC Design for Mobile Pervasive Ad hoc Networking

DESCRIPTION

PART A: TCP/IP and Transport Layer Enhancements
(Professor Bob McLeod)

It is hard to describe network computing, the Internet, wireless, microelectronics, or fiber optics as "emerging" areas in Information and Communication Technology. It would be more accurate to describe these as periodically having coming out parties. In spite of the impressive gains these areas have seen in terms of underlying technology, relatively little has changed regarding the protocols for moving data. For example, the 802 LAN standard had its origin in February 1980 (hence denoted 802), with the basic protocol such as 802.3 not changing much but undergoing significant performance advances due to the technology of the day. Low level protocols such as 802.3, or the 802.11, are based on common sense and a "what else would you do mentality", and as a consequence work well. The picture is less clear with respect to WANs where we are still using protocols that were developed over 30 years ago that don't have the same common sense pedigree. Brilliant people dreamt up the TCP/IP suite of protocols likely in a drug induced Gedanken experiment as a means of reliably moving a small amount of packet data through a highly unreliable and relatively small network. The idea presented here is that it is time to revisit some of these protocols and consider the development or invention of efficient transport level protocols as a re-emerging area of communication technology.

This section of the tutorial will review TCP/IP with emphasis on the transport layer and the impact that defacto standard layer physical layer technologies such as Ethernet has on them. A review of existing and proposed alternative transport layer protocols will be provided as well as an overview of research we are doing

at the University of Manitoba.

DESCRIPTION

PART B: Next-Generation Middleware Platforms
(Professor Muthucumar Maheswaran)

The Internet has evolved into a popular communication medium mainly driven by applications such as E-mail, Net News, and World Wide Web. These applications primarily require the Internet to be a best effort data mover to enable "information exchange." However, several existing and emerging applications from areas such as business, entertainment, health, and education require services beyond the best-effort model. This is further complicated by the emergence of different networking technologies and the desire of the end-users to access services from everywhere at anytime.

To address these requirements, recent research has focused on the development of new scalable, efficient, and flexible "next generation" middleware platforms. These middleware platforms are intended to support the deployment of wide-area applications such as Content delivery networks and Video-on demand. One such next-generation middleware platform is the Grid computing system. A Grid is a virtual framework that allows resources across national and international boundaries to interoperate and share capacities in a controlled fashion to form scalable systems.

This talk introduces the concept of Grid computing and includes the various different motivations for developing Grid systems. In particular, we emphasize on the use of Grid computing systems for supporting wide-area applications by providing a resource provisioning framework. Architectures of existing Grid systems is also presented. Following the discussion of the architectures, the talk will examine the different issues in developing and deploying a large-scale middleware as the Grid system.

To illustrate some of the research issues involved in Grid systems, we discuss resource discovery, dissemination, scheduling and security issues in this context. Simple examples will be used to highlight the issues and the methods developed to address them. Time permitting, we will demonstrate some of the concepts using an advanced Grid prototype that is being developed at TRILabs and University of Manitoba.

DESCRIPTION

PART C: MAC Design for Mobile Pervasive Ad hoc Networking
(Professor Ekram Hossain)

The simplicity in deployment makes wireless ad hoc networks (which do not require any infrastructure) suitable for a variety of applications such as collaborative computing, disaster recovery, battle field communication. With the proliferation of communications and computing devices such as cellphones, laptops, or PDAs, Personal Area Networking (PAN) which is an ad hoc networking-based technology, has recently gained much interest.

MAC protocols play an important role in the performance of the wireless ad hoc networks. A MAC protocol defines how each mobile unit can share the very limited wireless bandwidth resource in an efficient manner. Recent researches in this area have focused on designing MAC protocols with optimized performance metrics including throughput, delay, fairness, stability, support for multimedia and power efficiency.

In this section of the tutorial, a thorough survey of all the existing medium access control approaches is presented. The most of the complexity in MAC design for wireless ad hoc networks arises due to node mobility and link vulnerability. A series of studies on MAC design has been conducted to improve medium access performance in different aspects as identified by the different performance metrics. Tradeoffs among the different performance metrics (such as between throughput and fairness) dictate the design of a suitable MAC protocol. We compare the different proposed MAC approaches, identify their problems, and discuss the possible remedies. To this end, the interactions among the MAC and the higher layer protocols such as routing and transport layer protocols are discussed. We also shed light on some of our current research efforts in this area.

MAXIMUM NUMBER OF PARTICIPANTS

30

CONTACT PERSON

[Prof. Ekram Hossain, Ph.D.](#)
Department of Electrical & Computer Engineering
University of Manitoba
Winnipeg, MB R3T 5V6



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CONFERENCE WORKSHOPS:
OrCAD

TITLE
 Introduction to OrCAD

INSTRUCTOR
[Mr. Kalen Brunham](#)
[Embedded Solutions](#)
 162-225 Corydon Ave., Suite 306
 Winnipeg, MB R3P 0N5
 Phone: (204) 488-4795
 Fax: (204) 488-9079

DATE
 12 May 2002

TIME
 1:00 to 5:00 PM

LOCATION
 University of Manitoba
 Engineering Bldg.
 Fort Garry Campus
 Winnipeg, MB R3T 5V6

MAIN TOPICS

1. Basics of OrCAD Capture
2. Basics of OrCAD Layout

EXAMPLE STUDIES

1. Multi-layer printed circuit board design with OrCAD.
2. PCB footprint creation.
3. PCB layout of the design circuit from basics of OrCAD capture.

DESCRIPTION
 The introduction to OrCAD workshop is designed as a four-hour short course with both lecture and hands-on learning. The workshop will focus on the schematic and PCB design capabilities of OrCAD using OrCAD Capture and OrCAD Layout. The first component of the workshop discusses the basic OrCAD design flow, flat and hierarchical schematic design in OrCAD, an introduction to the OrCAD capture GUI, and part creation followed by the hands-on design of a simple circuit in OrCAD capture.

This is followed by fundamentals of layout design flow using OrCAD Layout with an overview of the OrCAD Layout GUI, multi layer board design with OrCAD, and PCB footprint creation. The hands-on design concludes this part of the workshop, with the PCB layout of the design circuit from basics of OrCAD capture.

BIOGRAPHICAL NOTE
 Kalen Brunham obtained his B.Sc. (Computer Engineering) from the University of Manitoba in May 2000. During his undergraduate studies, he spent 18 months as an electronics designer intern at Vansco Electronics, Winnipeg. He is currently working on a Master's postgraduate degree with Professor Kinsner on compression for synthetic radar imaging applications. His research interests include embedded computing systems and the design of custom computing engines using programmable logic devices (PLDs). He is also working in conjunction with the Telecommunications Research Laboratories (TRLabs) as a graduate research fellow.



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CONFERENCE WORKSHOPS:
LabView AND BIOMEDICAL SIGNALS

TITLE
 Introduction to LabView Programming
 with Application to Biological Signal Recording and Analysis

INSTRUCTOR
[Professor Zahra Moussavi](#)
[Department of Electrical & Computer Engineering](#)
 University of Manitoba
 Winnipeg, MB R3T 5V6
 Phone: (204) 474-7023
 Fax: (204) 261-4639

DATE
 12 May 2002

TIME
 1:00 to 5:00 PM

LOCATION
 University of Manitoba
 Engineering Bldg., Room 465
 Fort Garry Campus
 Winnipeg, MB R3T 5V6

MAIN TOPICS

1. Programming with LabView.
2. Data conditioning applied to biological signals.
3. Recording and analysis of either EMG/ECG or respiratory sound signal.

DESCRIPTION
 Participants will learn the concept of LabView, and basic skills of programming with LabView (handouts will be provided). In particular, they will be acquainted with designing a Labview program for an oscilloscope on line, as well as for data acquisition. Some practical problems of data conditioning in regard to biological signals will be addressed, along with remedies for those problems. Participants will also be able to record and analyze their own either EMG/ECG or respiratory sound signal.

MAXIMUM NUMBER OF PARTICIPANTS
 24

CONTACT PERSON
[Professor Zahra Moussavi](#)
 (Address as above.)

FEES
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TECHNICAL PROGRAM:
BANQUET & IEEE AWARDS
General Information

BACKGROUND

The 2002 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE02) will follow the tradition of organizing a banquet at which IEEE Canada presents awards to a few deserving IEEE members.

In the past, the banquet was opened to the full conference registrants only. This year, students registrants are also included.

The Conference Committee feels that this inclusion of students will improve networking at the conference.

IEEE AWARD CEREMONY

The IEEE Award Ceremony will take place after the banquet dinner, Monday, May 13, 2002.



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TECHNICAL PROGRAM:
TOURS:
DORSEY CONVERTER STATION

TITLE

Technical Tour to Dorsey Converter Station

ORGANIZERS

[Professor Udaya Annakkage, Ph.D., CEng](#)
 Department of Electrical & Computer Engineering
 University of Manitoba
[Dr. Hilmi Turanli, Ph.D., P.Eng.](#)
 Manitoba Hydro

DATE

14 May 2002 (Tuesday)

TIME

2:00 to 4:00 PM

LOCATION

[Near Rosser, Manitoba](#)
 26 km northwest of Winnipeg

TRANSPORTATION

Will be provided.

SUMMARY

Over 70 per cent of the electricity produced in Manitoba is transmitted through Manitoba Hydro's Dorsey Converter Station. The converter station is the southern terminus for the utility's high voltage direct current (HVDC) line. Built in 1968, Dorsey is located near the town of Rosser, Manitoba, about 26 km northwest of the City of Winnipeg.

Most of the electricity produced at Manitoba Hydro's three largest generating stations built on the Nelson River in northern Manitoba is converted from alternating current (ac) to direct current (dc) at the Radisson and Henday converter stations, which are located close to the three: Kettle, Long Spruce and Limestone.

The electrical current is transmitted south to the Dorsey Converter Station by way of two bipolar high voltage direct current transmission lines. From Gillam to Dorsey, for about 900 km, they follow a route that takes them through Manitoba's Interlake region. The term bipole refers to the two conductors or "poles" on each tower line.

The dc electricity is converted back to ac at Dorsey for distribution via Manitoba Hydro's 230 kV transmission line system. From there the ac feeds the balance of Manitoba's southern electrical system and the interconnecting electrical systems to Saskatchewan, Ontario and the U.S.A.



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TECHNICAL PROGRAM:
STUDENT PAPER COMPETITION:
General Information

BACKGROUND

The 2002 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE02) will follow the tradition of selecting outstanding papers whose prime authors are students. However, an innovation is being introduced in the CCECE02 in that single winners of the competitions will be selected in various areas, rather than in the entire conference.

In the past CCECE conferences, three winners were selected in the entire CCECE. In CCECE02, we will have single winners in more focused areas, including:

- Power Engineering;
- Communications Engineering;
- Electromagnetic & Antenna Engineering;
- Computer Engineering;
- Electronics Engineering;
- Signal Processing Engineering; and
- Biomedical Engineering.

The Conference Committee feels that this focused-area approach will lead to a fairer process of selecting the papers, as comparison will be done within a similar area.

EVALUATION

The competition results will be based on reviews of the **full paper** only.

The award decisions of the CCECE02 adjudicating body and the Conference Committee will be final.

PUBLICATION

As any other paper accepted for presentation at the CCECE02, the winning student papers will be published in the Proceedings of the CCECE02 (both the 3-volume printed and the CD-ROM versions). In addition extended versions of the winning papers may be published in the Canadian Journal of Electrical and Computer Engineering, subject to the final editorial acceptance by the Journal.

AWARD CEREMONY

The Student Paper Competition awards will be announced at the Wednesday Lunch, May 15, 2002.



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PLENARY SESSIONS

	Page
1. Neural Networks in Power Systems (Monday, May 13)	5.2
2. Space Activities at Bristol Aerospace (Tuesday, May 14)	5.4
3. Biology in Shaping Engineering Profession (Wednesday, May 15)	5.6 – 5.7



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TECHNICAL PROGRAM: PLENARY SESSIONS: Professor Mohamed E. El-Hawary

TITLE
Applications of Neural Networks in Electric Power Systems

SPEAKER
[Professor Mohamed E. El-Hawary, Ph.D., P.Eng.](#)
Associate Dean of Engineering
[Dalhousie University](#)
Halifax, NS B3J 2X4

DATE
12 May 2002 (Monday)

TIME
8:35 to 9:25 AM

LOCATION
[Fort Garry Hotel](#)
222 Broadway Avenue
Winnipeg, Manitoba R3C 0R3

SUMMARY
This presentation is devoted to a tutorial introduction to a sample set of operational planning problems of electric power systems, which have been successfully solved using artificial neural networks. The presentation begins with a brief outline of fundamental neural network concepts. A classification of electric power system problem areas where neural networks have been successful is presented. We then focus on operational planning problems that include unit commitment, economic, environmental and dynamic dispatching, generation expansion planning, and maintenance scheduling. It is learned that while some applications involved the celebrated back propagation network, the majority of reported applications involve the Hopfield-Tank neural network.

BIOGRAPHICAL NOTE
Dr. El-Hawary is Professor of Electrical and Computer Engineering and Associate Dean of Engineering at Dalhousie University. He has a B.Sc. in Electrical Engineering, Distinction and First Class Honors, University of Alexandria, Egypt, 1965, and a Ph.D. in Electrical Engineering, University of Alberta, Edmonton, 1972, where he was an Izaak Walton Killam Memorial Fellow from 1970 to 1972. He served as an Instructor in the Department of Electrical Engineering at the University of Alexandria. He was Associate Professor of Electrical Engineering at the Federal University of Rio de Janeiro for two years, and subsequently served for eight years on faculty at Memorial University of Newfoundland since 1974. He was appointed Chairman of Electrical Engineering Program in 1976. In 1981 he joined the Technical University of Nova Scotia (TUNS) as Professor of Electrical Engineering. In 1997, TUNS was amalgamated with Dalhousie University. Dr. El-Hawary has been Associate Dean of Engineering since 1995, and Chair of the Dalhousie University Senate since 2001.

Dr. El-Hawary's contributions to the electrical engineering profession cover more than thirty five years of sustained work in research, education and service to the community. On the research side, Dr. El-Hawary pioneered in computational solutions for economic operation of power systems including hydro-thermal systems. His pioneering work on the application of computational intelligence techniques to power system operational problems is frequently referred to by the users community, and is documented in research monographs

and numerous research articles. He has written ten textbooks and monographs, taught graduate and professional development courses and supervised many graduate theses. In addition, he was instrumental in developing curricula at MUN, TUNS and Dalhousie in the Electrical Engineering undergraduate programs. At DalTech, he has developed graduate and Professional Development courses in Artificial Intelligence Theory and its applications to power systems.

Dr. El-Hawary's Technical service to the community is primarily through his involvement with the Power Engineering Society's operating committees on System Operations, Life Long Learning and other committees. He promoted the introduction of new technologies to power system operations. Dr. El-Hawary is Founding Editor-in-Chief, IEEE Press "Understanding Science and Technology" Series, and is Editor of IEEE Press "Power Engineering Series". He is Founding Editor, Power Letters, Electric Power Engineering Society, and is Associate Editor for the three major Electric Machines and Power Systems' Journals. Dr. El-Hawary is a member of the IEEE Board of Directors, and is President of IEEE Canada (2002-2003). He served as Chairman, IEEE Canada Recognition and Awards Committee IEEE Canada, (1994-1998), Chairman Recognition Working Group of the Power systems Engineering Committee, IEEE, and chair of IEEE Main prize Paper Awards Committee. He is a Member: IEEE Awards Board. He was Chair of Power Engineering Education Committee's Life Long Learning Subcommittee, and the Operating Economics Subcommittee in the Power Engineering Society. He is Secretary of the Power System Operations Committee. Dr. El-Hawary was president Canadian Society for Electrical Engineering and Vice-President of Engineering Institute of Canada (1986-88). He also served as Chairman, Engineering Education Committee, and Canadian Electrical Association, 1990-96.

Dr. El-Hawary served as General Chair: 1984 IEEE International System Man and Cybernetics Conference, Halifax, Nova Scotia, Technical Program Chair: Canadian Conference on Electrical and Computer Engineering, 1994, Halifax Nova Scotia, and General Chair: Large Engineering Systems Conference on Power Engineering, 1998-2000. Dr. El-Hawary is author of over 100 referred Journal articles. He is a distinguished lecturer for the IEEE Industry Applications and Power Engineering Societies, and is a Fellow of IEEE and EIC.

Dr. El-Hawary is the 1999 recipient of the IEEE Power Engineering Educator Award, the IEEE Canada McNaughton Medal, IEEE Educational Activities Board Meritorious Achievement Award in Continuing Education, and the Millennium Medal. The Engineering Institute of Canada recognized Dr. El-Hawary's contributions by awarding him the Canadian Pacific Medal in 2000, and the J. B. Stirling Medal for 2001.

He has been a registered P. Eng. in the Association of Professional Engineers of Newfoundland and Labrador since 1974, and in Nova Scotia since 1982, and is a member of the National Society of Professional Engineers.

CONTACT PERSON
[Prof. W. Kinsner, Ph.D., P.Eng.](#)
Department of Electrical & Computer Engineering
University of Manitoba
Winnipeg, MB R3T 5V6

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TECHNICAL PROGRAM: PLENARY SESSIONS: Ian Walkty

TITLE

Space Activities at Bristol Aerospace - Past, Present and Future

SPEAKER

[Ian Walkty, B.Sc., M.Sc., P.Eng.](#)
Manager, Satellite Products
[Bristol Aerospace Limited](#)
Winnipeg, MB R3C 2S4

DATE

14 May 2002 (Tuesday)

TIME

8:35 to 9:25 AM

LOCATION

[Fort Garry Hotel](#)
222 Broadway Avenue
Winnipeg, Manitoba R3C 0R3

SUMMARY

Bristol Aerospace has been involved in the space community for over 40 years. This work has principally been undertaken with the Canadian Space Agency and with NASA. Bristol initially entered this business area with solid propellant rocket technology that was acquired from the Canadian Government. This technology spawned a family of suborbital rockets (the Black Brant family) that have been launched from ranges worldwide. To date, over 600 rockets have been launched. This initial propulsion activity naturally led into the design and development of rocket payloads, which have been flown on Black Brant vehicles to support upper atmospheric research. Over 125 rocket payloads have been developed for Canadian researchers. With the introduction of the U.S. Space Shuttle, payload work evolved to shuttle payload development and operations support. Recently, Bristol has also started work on Space Station payload hardware.

For the last 15 years, Bristol has been a strong proponent of microsatellites and small satellites in Canada, and has worked with the Canadian Space Agency in the introduction of their SCISAT small satellite program. Bristol is presently developing SCISAT-1 for launch on 20 December 2002.

Bristol's future focus will be on space products (GyroWheel and MIM) and on new satellite missions for the Canadian Space Agency, the Department of National Defence, and for commercial customers. Further out in the future are opportunities for missions to Mars, which is a focus of the new Canadian Space Agency's president.

BIOGRAPHICAL NOTE

Mr. Ian Walkty is the Manager of Satellite Products at Bristol Aerospace Limited in Winnipeg. Has been involved in their space program for many years, with a formidable experience in rockets, payloads, space electronics, and management. He is responsible for all small satellite programs at Bristol, and particularly for the management of pre-SCISAT-1 spacecraft technology development projects, including the SCISAT Control and Data Handling System, as well as the design and development of the spacecraft bus for the Canadian Space Agency's (CSA) SCISAT-1 / ACE Mission that will be launched in December 2002.

He was involved in various programs, including the SPP Microsats (1997-8), DND Smallsats (1994-6), VCF Shuttle payload (flight 1998), CFZF VCU Shuttle payload (flight 1998), OEDIPUS-C rocket payload (flight 1995), CSAR-2 rocket payload (flight 1994), GEMINI rocket payload (flight 1994), QUESTS 1 Shuttle payload (flight 1992), CSAR-1 rocket payload (flight 1992), OEDIPUS-A rocket payload (flight 1989), and many other related projects.

He was also involved in the design of the Automatic Weather Stations and Data Collection Platforms, the Atmospheric Environment Service's READAC Automatic Weather Station and the Lighthouse Automation Program, and the Defence Research Establishment's Sunshine Weather Data Acquisition System. Furthermore, he was involved in the design, development and implementation in the areas of real-time multisensor data acquisition systems, special-purpose hardware for digital filters, real-time signal analysis, beamforming, and conventional as well as adaptive spectral analysis.

Mr. Walkty obtained his B.Sc. and M.Sc. degrees from the Department of Electrical and Computer Engineering, University of Manitoba, in 1972 and 1973, respectively.

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CCECE'02

CANADIAN CONFERENCE ON ELECTRICAL & COMPUTER ENGINEERING

May 12 to 15, 2002
Hotel Fort Garry, Winnipeg, Manitoba, Canada

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TECHNICAL PROGRAM: PLENARY SESSIONS: Professor Digvir Jayas

TITLE

The Role of Biology in Shaping Engineering Profession

SPEAKER

[Professor Digvir S. Jayas, Ph.D., P.Eng.](#)

Associate Vice-President (Research)

[University of Manitoba](#)

Winnipeg, MB R3T 5V6

DATE

15 May 2002 (Wednesday)

TIME

8:30 to 9:25 AM

LOCATION

[Fort Garry Hotel](#)

222 Broadway Avenue

Winnipeg, Manitoba R3C 0R3

SUMMARY

It has been said by many that this century will be the century of biology as the last century was the century of Physics and Chemistry. Engineers play a major role in applications of basic sciences to produce products and processes for benefit of the mankind. As a profession, we have not yet paid much attention to biology. The talk will summarize the opportunities for electrical and computer engineers in the emerging field of bio-engineering.

BIOGRAPHICAL NOTE

Dr. Digvir S. Jayas, is Associate Vice-President (Research), at the University of Manitoba. Prior to assuming this position, he was Associate Dean (Research) in the Faculty of Agricultural and Food Sciences and Department Head of Biosystems Engineering. He is a Registered Professional Engineer, and a Registered Professional Agrologist.

Dr. Jayas provides gifted leadership in conducting interdisciplinary research and is world renowned for his research in grain storage. His team has integrated the work of entomologists, agricultural engineers, and mathematicians into the development of new methods of measuring, analysing, and modelling (mathematically) the properties of grains and heat and mass transfer in grain during storage. The modelling of heat and mass transfer in stored grain has also provided a basis for use of non-chemical methods for the control of insects. His team is applying digital image processing for automation of processing operations in grain handling facilities. Dr. Jayas has successfully completed a variety of research projects in the food engineering area. His team has recently developed a liquid nitrogen- refrigerated container for the storage, transportation, and distribution of retail-ready fresh chilled meat.

He served for six years as Associate Editor of two international journals (Transactions of the ASAE and Applied Engineering in Agriculture) for the Food Process Engineering Institute of ASAE. He also served for six years as Associate Editor for Food Engineering and Processing divisions of Canadian Agricultural Engineering. He has served as the President of the Canadian Institute of Food Science and Technology and Chair of the Strategic Grant Selection Panel of NSERC. Currently, he is serving on the Editorial Boards of two international journals

(Agricultural Engineering Journal and Journal of Stored Products Research), Chair of Canadian Engineering Qualifications Board, and Executive Committee Member of Genome Prairie.

His research is funded by the Natural Sciences and Engineering Research Council of Canada (NSERC) through Operating and Strategic Grants and by the Agri-food industry through Operating Grants and Contracts and covers a broad spectrum between basic and applied research. Recently, he led a successful proposal to obtain funds from Canada Foundation for Innovation, Province of Manitoba and Industry to construct, a 4.6 million dollar worth, 14000 sq ft facility for research on stored-grain ecosystems.

He has authored or co-authored over 200 technical articles in scientific journals, conference proceedings and books. He is co-editor of a book entitled "Stored-Grain Ecosystems" and co-author of a book entitled "Grain Drying: Theory and Practice".

He has received professional awards from Canadian Society of Agricultural Engineering, American Society of Agricultural Engineers, and Association of Professional Engineers and Geoscientists of Manitoba.

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Oral Session MM1: Materials & Instrumentation

TIME: 09:30 – 10:30
ROOM: LA VERENDRYE

CHAIRS: G. Bridges,
A. Cuhadar

MONDAY, MAY 13

- MM1.1 (314) 09:30-09:50
Probe position control for enhanced resolution electrostatic force microscopy
Weng, Z., Bridges, G., and Thomson, D.
Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 378-382
- MM1.2 (433) 09:50-10:30
Empirical model for the distribution of electronic states associated with hydrogenated amorphous silicon
Malik, S. and O'Leary, S.
Faculty of Engineering, University of Regina, Regina, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 383-388
- MM1.3 (209) 10:10-10:30
Dynamic heterodyned polarization imaging: An electrostatic scanning probe technique for studying polarization dynamics in materials
Oliver, D., Pu, A., Thomson, D., and Bridges, G.
Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 389-392

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session MM2: Nanotechnology & Micromachining 1

TIME: 09:30 – 10:30
ROOM: SALON AB

CHAIRS: S. O'Leary
D. Oliver

MONDAY, MAY 13

MM2.1 (300) 09:30-09:50

DNA concentration on a microfabricated biochip intended for greenhouse-crop pathogen identification

*Syrzycka, M., Sjoerdsma, M., Wicks, D. *, Koch, C. **, Uthkede, R. **, Syrzycki, M., Li, P. * and Parameswaran, M.*

Institute of Micromachine and Microfabrication Research, School of Engineering Science,

*Department of Chemistry, Simon Fraser University, Burnaby, Canada, **Agriculture and Agri-Foods Canada, Pacific Agri-Food Research Centre, Agassiz, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 433-438

MM2.2 (290) 09:50-10:10

Magnetic force microscopy measurement of current on integrated circuits

Pu, A., Rahman, A., Thomson, D., and Bridges, G.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 439-444

MM2.3 (264) 10:10-10:30

Corrugated micromachined membrane structures

Chrusch, D. and Shafai, C.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 445-449

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session MM3: Pattern Recognition and Image Analysis 1

TIME: 09:30 – 10:30
ROOM: TACHE

CHAIRS: D. McNeill
C. Shafai

MONDAY, MAY 13

MM3.1 (340) 09:30-09:50

A study of quantization range in wavelet transform coding by zero value tree structure and vector quantization

Aoki, A. and Okamoto, N.

Graduate School of Engineering, Kanto Gakuin University, Yokohama, Japan

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 841-846

MM3.2 (106) 09:50-10:10

Image colour quantization using competitive learning

McNeill, D.

Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 847-850

MM3.3 (180) 10:10-10:30

Scalable parallel wavelet transforms for image processing

*Chadha, N., Cuhadar, A. *, and Card, H.*

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg,

Canada, *Systems and Computer Engineering Department, Carleton University, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 851-856

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session MM4: Computer Networks 1: Cellular

TIME: 09:30 – 10:30
ROOM: GATEWAY

CHAIRS: S.Pierre
J. Salt

MONDAY, MAY 13

MM4.1 (120) 09:30-09:50

Affectation de cellules à des commutateurs dans les réseaux cellulaires mobiles par programmation par contraintes

Andre, M., Pesant, G., and Pierre, S.

Département de génie informatique, École Polytechnique de Montréal, Montreal, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1311-1316

MM4.2 (189) 09:50-10:10

An analysis of denial of service attacks (DoS) in the wireless application protocol (WAP) environment

Sharafat, A. and Kosari, S.

Department of Electrical Engineering, Tarbiat Modarres University, Tehran, Iran
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1317-1320

MM4.3 (294) 10:10-10:30

Optimal radioport placement in cellular networks

Abolhassani, B., Salt, J., and Dodds, D.

Department of Electrical Engineering, University of Saskatchewan, Saskatoon, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1321-1324

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session MM5: Power System Reliability

TIME: 10:50 – 12:30
ROOM: LA VERENDRYE

CHAIRS: R. Billinton
S. Faried

MONDAY, MAY 13

MM5.1 (142) 10:50-11:10

Reliability evaluation of composite electric power systems incorporating facts

Billinton, R. and Cui, Y.

Power System Reseach Group, University of Saskatchewan, Saskatoon, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 1-6

MM5.2 (108) 11:10-11:30

Distance protection for six-phase transmission lines based on fault induced high frequency transients and wavelets

Hajjar, A., Mansour, M., Talaat, H.**, and Faried, S.****

Tishreen University, Latakia, Syria, *Ain Shams University, Cairo, Eqypt, **King Saud University, Riyadh, Saudi Arabia, ***University of Saskatchewan, Saskatoon, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 7-11

MM5.3 (140) 11:30-11:50

Incorporating reliability index probability distributions in performance based regulation

Billinton, R. and Pan, Z.

Power System Reseach Group, University of Saskatchewan, Saskatoon, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 12-17

MM5.4 (385) 11:50-12:10

Transmission congestion relief solutions by load management

Niu, Y., Cong, Y., and Niimura, T.

Department of Electrical and Computer Engineering, University of British Columbia, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 18-23

MM5.5 (137) 12:10-12:30

Adequacy evaluation of generation systems including wind energy

Billinton, R. and Bai, G.

Power System Reseach Group, University of Saskatchewan, Saskatoon, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 24-29

LUNCH

TIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session MM6: Software Engineering

TIME: 10:50 – 12:30 CHAIRS: L. Benedicenti
ROOM: SALON AB N. Pizzi

MONDAY, MAY 13

MM6.1 (293) 10:50-11:10
A quality assessment model for Java code
Benedicenti, L., Wang, V., and Paranjape, R.
Faculty of Engineering, University of Regina, Regina, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 687-690

MM6.2 (152) 11:10-11:30
Computational performance of Java and C++ in processing large biomedical datasets
Vivanco, R. and Pizzi, N.
Institute for Biodiagnostics, National Research Council of Canada, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 691-696

MM6.3 (167) 11:30-11:50
Formal approaches to software testing
Dasiewicz, P.
Department of Electrical and Computer Engineering, University of Waterloo, Waterloo, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 697-702

MM6.4 (155) 11:50-12:10
Evaluation of several Efron bootstrap methods to estimate error measures for software metrics
Lei, S. and Smith, M.
Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 703-708

MM6.5 (370) 12:10-12:30
A technique for specifying interface modules for real-time systems
Wang, Y. and Peters, D.
Electrical and Computer Engineering, Faculty of Engineering and Applied Science, Memorial University of Newfoundland, St. John's, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 709-714

LUNCH

TIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session MM7: Filter Design

TIME: 10:50 – 12:30 CHAIRS: W. Badawy
ROOM: TACHE G. Martens

MONDAY, MAY 13

MM7.1 (392) 10:50-11:10
Maximally flat delay pulse shaping network
Mneina, S. and Martens, G.
Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1026-1030

MM7.2 (284) 11:10-11:30
VLSI architecture prototyping of pipelined IIR digital filter
Alam, M. and Badawy, W.
Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1031-1035

MM7.3 (119) 11:30-11:50
Variable magnitude characteristics of 1-D IIR discrete filters by a generalized bilinear transformation
*Gargour, C., Ramachandran, V. *, Ramachandran, R. **, and Awad, F.*
Department of Electrical Engineering, École Technologie Supérieure, Montreal, Canada,
*Department of Electrical and Computer Engineering, Concordia University, Montreal, Canada,
** Department of Electrical and Computer Engineering, Rowan, Glassboro, NJ, USA
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1036-1039

MM7.4 (172) 11:50-12:10
An approach to implement FIR filters for Delta-Sigma inputs
Babaii, N. and Nabavi, A.
Department of Electrical Engineering, Tarbiat Modares University, Tehran, Iran
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1040-1044

MM7.5 (431) 12:10-12:30
Rapid development of a real-time speech coder on a TMS320C54x DSP
Langi, A.
DSP Research and Technology Group, Laboratory for Signals and Systems, Department of Electrical Engineering and IC Design Laboratory IURC Microelectronics, Bandung Institute of Technology, Jawa Barat, Indonesia
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1045-1048

LUNCH

TIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session MM8: Computer Networks 2: WirelessTIME: 10:50 – 12:30
ROOM: GATEWAYCHAIRS: M. Khedr
M. Soleymani

MONDAY, MAY 13

MM8.1 (207) 10:50-11:10

Dynamic support of service differentiation in wireless networks*Zhang, Y., Makrakis, D., Primak, S.*, and Huang, Y.*Broadband Wireless and Internetworking Research Laboratory, School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada, *Department of Electrical and Computer Engineering, University of Western Ontario, London, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1325-1330

MM8.2 (333) 11:10-11:30

COFDM with orthogonal transmit diversity and power control for broadband wireless communications*Torabi, M. and Soleymani, M.*Electrical and Computer Engineering Department, Concordia University, Montreal, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1337-1346

MM8.3 (361) 11:30-11:50

Performance comparison between the use of group signatures and robust error correction codes in wireless multiuser communication systems*Tran, T. and Sesay, A.**Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada, *also with TRILabs, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1337-1341

MM8.4 (395) 11:50-12:10

ACAN: Ad hoc context aware active networks*Khedr, M. and Karmouch, A.*Multimedia and Mobile Agent Research Lab, School of Information Technology and Engineering(SITE), University of Ottawa, Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1342-1346

MM8.5 (190) 12:10-12:30

Performance improvement of prioritized handoff schemes in multi-service mobile cellular systems*Chen, J. and Cao, D.*School of Electronic Engineering, Tianjin University, Tianjin, P.R. China
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1347-1351**LUNCH**TIME: 12:30 – 14:00
ROOM: 7th FLOOR

Poster Session: Monday MorningTIME: 10:30 – 12:30
ROOM: PROVENCHER

CHAIR: C. Shafai

MONDAY, MAY 13

MMP.01 (110)

Are global methods appropriate for fMRI data analysis? An in vivo fMRI study of the spatio-temporal heterogeneity of fMRI data*Baumgartner, R., Somorjai, R., and Ryner, L.*Institute for Biodiagnostics, NRCC, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 894-897

MMP.02 (134)

A new wavelet-based image coding using embedded vector quantizer*Abdelwahab, A., Saad, E., and Gaber, S.*Department of Electronics and Communications Engineering, Helwan University, Cario, Egypt
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 898-901

MMP.03 (175)

X-ray image analysis to detect infestation due to *Cryptolestes Ferrugineus* in stored wheat*Karunakaran, C., Jayas, D., and White, N.**Department of Biosystems Engineering, University of Manitoba, Winnipeg, Canada, *Agriculture and Agri-Food Canada, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 902-907

MMP.04 (188)

Gegenbauer moment-based applications for Chinese character recognition*Chiang, A., Liao, S., Lu, Q.*, and Pawlak, M.***University of Winnipeg, Winnipeg, Canada, *Hong Kong Polytechnic University, Hong Kong, **Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 908-911

MMP.05 (216)

Cones: A new approach towards corner detection*Elias, R. and Laganière, R.*VIVA Research Lab, School of Information Technology and Engineering, University of Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 912-916

MMP.07 (233)

A robust personal identification through faces based on isodensity maps*Hirano, T., Muraguchi, T., and Nakamura, O.*Department of Computer Science and Communication Engineering, Kogakuin University, Japan
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 917-925

MMP.08 (234)

On the isolation of spectacles from faces for the recognition of facial expressions and personal identification

Muraguchi, T., Ebine, H., Ikeda, M., and Nakamura, O.

Department of Computer Science and Communication Engineering, Kogakuin University, Japan
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 926-933

MMP.09 (341)

A study on analysis of road image including a pedestrian crossing

Nishimura, Y. and Okamoto, N.

Graduate School of Engineering, Kanto Gakuin University, Yokohama, Japan
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 934-939

MMP.10 (352)

Hierarchical adaptive control protocol for video streaming

Cai, L., Liu, X., and Badawy, W.

Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 940-944

MMP.11 (366)

On effectiveness of phase shifters for pseudo-random test pattern generators

Chen, D. and Sun, X.

Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 541-546

MMP.12 (422)

Circuit simulation: Unified simulator

Raahemifar, K. and Sidhu, S.

Electrical and Computer Engineering Department, Ryerson University, Toronto, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 547-553

MMP.13 (221)

State decision diagrams as the dual graphs of binary decision diagrams and their applications

Ghaznavi-Ghoushchi, M. and Nabavi, A.

School of Engineering, Tarbiat Modares University, Tehran, Iran
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 620-625

MMP.14 (126)

An analysis of shear horizontal surface acoustic wave propagation under mechanical losses

Zerdali, M. and Hamzaoui, S.

Laboratoire de Microscopie Electronique & des Sciences des materiaux, Universite des Secces et de Technologies d'Oran (USTO), Algeria
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1646-1651

MMP.15 (301)

A surface micromachined bistable switch

Foulds, I., Trinh, M., Hu, S., Liao, S., Johnstone, R., and Parameswaran, M.

Institute of Micromachine and Microfabrication Research, School of Engineering Science, Simon Fraser University, Burnaby, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 465-469

MMP.16 (350)

Required minimum feature spacing for commercial viability of raised surface micromachined optical systems

Johnstone, R.

Simon Fraser University, Burnaby, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 470-473

MMP.17 (354)

A Markov random fields model for hybrid edge- and region-based color image segmentation

Wesolkowski, S. and Fieguth, P.

Systems Design Engineering, University of Waterloo, Waterloo, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 945-949

MMP.18 (199)

Merger of knowledge management and information technology in healthcare: opportunities and challenges

*Dwivedi, A., Bali, R. *, James, A., Naguib, R. *, and Johnston, D. ***

Data and Knowledge Engineering Research Group (DKERG), *BIOCORE, School of Mathematical and Information Sciences, Coventry University, UK, **Applied Network Solutions Ltd., Slough, UK
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1194-1199

MMP.19 (270)

A simulated comparison of turnstile and Poisson photons for X-ray imaging

*Melvin, C., Abdel-Hadi, K., Cenzano, S. *, and Gordon, R. ***

Department of Electrical and Computer Engineering, *Department of Radiology, **Department of Electrical and Computer Engineering and the Department of Radiology, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1165-1170

MMP.20 (274)

Quantitative MR cerebral blood flow using ARMA-based deconvolution: Preliminary results

*Lu, H., Smith, M., and Frayne, R. **

Department of Electrical and Computer Engineering, *Departments of Radiology and Clinical Neurosciences, ECE, University of Calgary, Seaman Family MR Centre, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1171-1176

MMP.21 (297)

Automated diagnosis for segmentation of colonoscopic images using chromatic features

*Tjoa, M.P., Krishnan, S., and Doraiswami, R.**

BMERC, School of EEE, Nanyang Technological University, Singapore, * Department of Electrical and Computer Engineering, University of New Brunswick, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1177-1180

MMP.22 (400)

Establishing historical data patterns within a dynamic dental epidemiological relational database

*Taylor, D., Naguib, R., Amin, S., James, A., and Boulton, S.**

BIOCORE, School of Mathematical and Information Sciences, Coventry University, Coventry, UK, *Dental Public Health, Coventry Health Authority, Coventry, UK

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1200-1204

MMP.23 (412)

Relationship between airflow and normal lung sounds

Hossain, I. and Moussavi, Z.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1120-1122

MMP.24 (416)

Skin temperature response during cycle ergometry

Malkinson, T.J.

GE Capital Information Technology Solutions Inc., Calgary, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1123-1128

MMP.25 (442)

A fast algorithm for mining association rules in medical image data

Olukunle, A. and Ehikioya, S.

Department of Computer Science, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1181-1187

MMP.26 (362)

On the question of desired sensitivity assurance when testing linear systems by small number of test patterns

Geurkov, V.

Department of Electrical and Computer Engineering, Ryerson University, Toronto, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 538-540

MMP.27 (419)

Bit-rate reduction of MPEG compressed video

*Fatemi, O., Mahdi Ghandi, M., Emad Modizadeh, M., and Ghandi, M.**

Department of Electrical and Computer Engineering, University of Tehran, Tehran, Iran,

*Department of Electrical Engineering, Sharif University of Technology, Tehran, Iran

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1049-1054

MMP.28 (437)

Determination of chip rate and center frequency for a spread spectrum acoustic ranging system

Farroki, H. and Palmer, R.

Electronic System Engineering, University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 364-368

MMP.29 (438)

Determining wind velocity and the speed of sound with redundant transponders for a spread spectrum acoustic ranging system

Drysdale, G. and Palmer, R.

Electronic System Engineering, University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 369-372

MMP.30 (439)

The relationship between bandwidth and performance for a spread spectrum acoustic ranging system

Xie, J. and Palmer, R.

Electronic System Engineering, University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 373-377

LUNCH

TIME: 12:30 – 14:00

ROOM: 7th FLOOR

Oral Session MA1: Analog MicroelectronicsTIME: 14:00 – 15:20
ROOM: LA VERENDRYECHAIRS: G. Khan
B. Maundy

MONDAY, MAY 13

MA1.1 (124) 14:00-14:20

A low voltage linearly tuned fully differential CMOS OTA and its applications in filter design*Salmeh, R. and Maundy, B.*Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 393-398

MA1.2 (116) 14:20-14:40

Maximizing heat-dissipation for burn-in testing*Sagahyoon, A.*

California State University, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 399-402

MA1.3 (250) 14:40-15:00

Mixed fluid-heat transfer approach for VLSI steady state thermal analysis*Bougataya, M., Lakhsasi, A., Savaria, Y.*, and Massicotte, D.***Department of Computer Science, Universite du Quebec a Hull, Hull, Canada, * Department of Electrical and Computer Science, Ecole Polytechnique de Montreal, Montreal, Canada,
**Laboratory of Signals and Integrated Systems, Universite du Quebec a Trois-Riveres, Quebec, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 403-407

MA1.4 (289) 15:00-15:20

Modeling and performance of spiral inductors in SOI CMOS technology*Zencir, E., Dogan, N., and Arvas, E.**Department of Electrical Engineering, North Carolina A&T State University, Greensboro, USA,
* Department of EECS, Syracuse University, Syracuse, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 408-411

COFFEE/REFRESHMENT BREAKTIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session MA2: Computer Hardware 1TIME: 14:00 – 15:20
ROOM: SALON ABCHAIRS: A. Sagahyoon
S. Dueck

MONDAY, MAY 13

MA2.1 (387) 14:00-14:20

Netlist partitioning for FPGA-based run-time reconfiguration*Dueck, S. and Kinsner, W.*Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory,
University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 584-590

MA2.2 (357) 14:20-14:40

Towards language emptiness model checking for MDGs*Wang, F. and Tahar, S.*

Department of Electrical and Computer Engineering, Concordia University, Montreal, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 590-595

MA2.3 (150) 14:40-15:00

A 54x54-bit multiplier with a new redundant binary Booth's encoding*Besli, N. and Deshmukh, R.*Department of Electrical and Computer Engineering, Florida Institute of Technology,
Melbourne, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 597-602

MA2.4 (282) 15:00-15:20

Distributed recovery block based fault-tolerant routing in hypercube networks*Khan, G., Hura, G.*, and Wei, G.***Electrical and Computer Engineering, Ryerson University, Toronto, Canada, *Computer Science
and Computer Engineering, University of Idaho, Idaho Falls, USA, **Advanced Ion Beam
Technology Inc., Sunnyvale, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 603-608

COFFEE/REFRESHMENT BREAKTIME: 15:20 – 15:40
ROOM: PROVENCHER

Organized Oral Session MA3: Communications Systems 1: Future Trends

TIME: 14:00 – 15:20
ROOM: TACHE

CHAIRS: G. Kramer
H. Nguyen

MONDAY, MAY 13

MA3.1 (441) 14:00-14:20

Communicating over white Gaussian interference networks with feedback

Kramer, G.

Lucent Technologies, Bell Labs, Murray Hill, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1261-1264

MA3.2 (447) 14:20-14:40

Modulation study for beam steerable reflectarray antennas

*Xiong, F., Ma, Y., Pinchak, S., and Romanofsky, R.**

Department of Electrical and Computer Engineering, Cleveland State University, Cleveland, USA, *NASA Glenn Research Center, Cleveland, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1265-1270

MA3.3 (257) 14:40-15:00

A study of band-limited chirp waveforms for asynchronous DS-CDMA systems

Nguyen, H.

Department of Electrical Engineering, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1271-1275

MA3.4 (232) 15:00-15:20

Consideration and research issues for the future generation of mobile communication

Li, Z., Zhou, W., Song, J., and Hou, C.

Beijing University of Posts and Telecommunications PCN&CAD Center

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1276-1281

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session MA4: Computer Networks 3: Miscellaneous

TIME: 14:00 – 15:20
ROOM: GATEWAY

CHAIRS: G. Kramer
H. Nguyen

MONDAY, MAY 13

MA4.1 (405) 14:00-14:20

Evolving and managing trust in grid computing systems

Azzedin, F. and Maheswaran, M.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, TRILabs, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1424-1429

MA4.2 (323) 14:20-14:40

Proxy-based connection-splitting architectures for improving TCP performance over satellite channels

*Philopoulos, S. and Ferens, K.**

Novra Technologies Inc., Winnipeg, Canada, *Norsat International, Inc., Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1430-1435

MA4.3 (169) 14:40-15:00

A middleware based approach for designing routing protocols

Dadarlat, V., Ivan, C. and Coffey, T.*

ECE Department, *CSIS Department, University of Limerick, Ireland

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1436-1441

MA4.4 (245) 15:00-15:20

Agent-based routing algorithms on a LAN

Yang, Y., Zincir-Heywood, A., Heywood, M., and Srinivas, S.

Faculty of Computer Science, Dalhousie University, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1442-1447

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session MA5: Electrical Machines 1

TIME: 15:40 – 17:00

CHAIRS: A. El-Serafi

ROOM: LA VERENDRYE

R. Menzies

MONDAY, MAY 13

MA5.1 (310) 15:40-16:00

Application of a domain decomposition algorithm in the 3D finite-element analysis of a transverse flux machine*Schmidt, E.*Institute of Electrical Drives and Machines, Vienna University of Technology, Vienna, Austria
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 156-161

MA5.2 (443) 16:00-16:20

Theory investigation of written pole motors*Menzies, R. and Li, G.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 162-165

MA5.3 (248) 16:20-16:40

A field plot of a turbo generator with a massive rotor on the basis of the actual current distributions during a sudden short circuit*Bacher, J., Grabner, C., and Schmidt, E.**

Institute of Electrical Machines and Drive Technology, University of Technology Graz, Graz, Austria, *Institute of Electrical Drives and Machines, Vienna University of Technology, Vienna, Austria

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 166-171

MA5.4 (179) 16:40-17:00

A new model for the saturated synchronous machines using the intermediate-axis saturation characteristics*Kar, N. and El-Serafi, A.*

Power Systems Research Group, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 172-177

Oral Session MA6: VLSI Systems

TIME: 15:40 – 17:00

CHAIRS: W. Badawy

ROOM: SALON AB

P. Khademsamen

MONDAY, MAY 13

MA6.1 (285) 15:40-16:00

VLSI prototyping of low-complexity wavelet transform on FPGAs*Alam, M., Onen, D.*, Badawy, W., and Jullien, G.***Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada,
*SiWorks Inc., Calgary, Canada, **ATIPS Laboratory, University of Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 412-415

MA6.2 (214) 16:00-16:20

A tool for automated analog CMOS layout module generation and placement*Khademsamen, P. and Syrzycki, M.*

School of Engineering Science, Simon Fraser University, Burnaby, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 416-421

MA6.3 (182) 16:20-16:40

A novel high-speed trellis-coded modulation codec*Hu, X. and Dinh, A.*

Department of Electrical Engineering, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 422-426

MA6.4 (367) 16:40-17:00

Minimal test configurations for FPGA local interconnects*Sun, X., Xu, J., Alimohammad, A., and Trouborst, P.**

Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada,

*Hardware Design Solutions, Nortel Networks, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 427-432

Organized Oral Session MA7: Communication Systems 2: Novel Applications

TIME: 15:40 – 17:00
ROOM: TACHE

CHAIRS: R. Palmer
E. Shwedyk

MONDAY, MAY 13

MA7.1 (440) 15:40-16:00

A spread spectrum acoustic system : An overview

Palmer, R.

Electronic System Engineering, University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1242-1245

MA7.2 (315) 16:00-16:20

A simple approach for bit error rate evaluation of parallel interference canceller CDMA detector

Haghighat, A. and Reza Soleymani, M.

Department of Electrical Engineering, Concordia University, Montreal, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1246-1249

MA7.3 (403) 16:20-16:40

Vehicle-to-vehicle communication and ranging system using code-hopping spread spectrum technique with code collision avoidance algorithm

Ueda, A. and Mizui, K.

Department of Electrical and Electronic Engineering, Kanto-Gakuin University, Japan

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1250-1254

MA7.4 (423) 16:40-17:00

Communication receivers based on Markov models of the fading channel

Riediger, M. and Shwedyk, E.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1255-1260

Oral Session MA8: Computer Networks 4: QoS

TIME: 15:40 – 17:00
ROOM: GATEWAY

CHAIRS: S. Chamberland
J. Zhigang

MONDAY, MAY 13

MA8.1 (132) 15:40-16:00

Designing and implementing a mobile ad hoc network testbed

*Zhigang, J., Bing, L., Yantai, S., and Yang, O.W.W. **

School of Electronic Information Engineering, Tianjin University, Tianjin, China, *School of

Electronic Information Engineering, University of Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1559-1564

MA8.2 (208) 16:00-16:20

Real-time video applications over ABR using Fastrac: A rate control algorithm

Fan, J. and Orozco-Barbosa, L.

School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1565-1570

MA8.3 (109) 16:20-16:40

On the IP network design problem with QoS constraints

Chamberland, S.

CRT and Computer Engineering Department, École Polytechnique de Montréal, Montreal, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1571-1576

MA8.4 (247) 16:40-17:00

Testing a cognitive packet concept on a LAN

Hu, X., Zincir-Heywood, A., and Heywood, M.

Faculty of Computer Science, Dalhousie University, Halifax, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1577-1582

Poster Session: Monday Afternoon

TIME: 14:00 – 16:00 CHAIR: E. Hossain
ROOM: PROVENCHER

MONDAY, MAY 13

MAP.01 (171)

Hospital financial electronic reporting

Mowat, J., Zhang, G., and Wieler, J.

Information Service, St. Boniface General Hospital, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1205-1210

MAP.02 (275)

Expanding agent-based service to the Internet

Zhou, M., Benedicenti, L., and Paranjape, R.

Electronic Systems Engineering, University of Regina, Regina, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 755-760

MAP.03 (291)

Mobile agents for economic market simulation

*Puttha, J., Benedicenti, L. *, and Paranjape, R. **

King Mongkut's University of Technology at Thonburi, Radburana, Bangkok, Thailand,
*Faculty of Engineering, University of Regina, Regina, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 761-765

MAP.04 (292)

The design of a secure agent platform

Saenchai, K., Benedicenti, L., and Paranjape, R.

Faculty of Engineering, University of Regina, Regina, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 766-769

MAP.05 (360)

Preparing dependable, dynamic real-time application systems for an adaptive resource management environment using a resource management middleware

*Govindaswamy, V., Welch, L. *, and Shirazi, B.*

University of Texas at Arlington, *Ohio University, Athens, USA
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 749-754

MAP.06 (424)

The Software Engineering Body of Knowledge for professional engineering in Canada

*Dony, R., Botman, P. *, Briggs, W. **, Haggart, R. ***, and Taylor, P. *****

School of Engineering, University of Guelph, Guelph, Canada, *True North Systems Consulting, Vancouver, Canada, **Department of Electrical and Computer Engineering, University of New Brunswick, Fredericton, Canada, ***Olorin Enterprises Inc., Ottawa, Canada, ****Department of Computing and Software, McMaster University, Hamilton, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 743-748

MAP.07 (444)

The role of reconciliation in retrieving historical objects in a multi-version object-based system

Hadaegh, A. and Ehikioya, S

Applied Art, Science and Technology, Red River College, Winnipeg, Canada, * Department of Computer Science, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1482-1486

MAP.08 (330)

Enhancing the particle swarm optimizer via proper parameters selection

*El-Gallad, A., El-Hawary, M., Sallam, A. *, and Kalas, A. **

Department of Electrical and Computer Engineering, Dalhousie University, Halifax, Canada,
*Department of Electrical Engineering, Suez Canal University, Port Said, Egypt
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 792-797

MAP.09 (427)

Network architectures for content-based routing

Jayaraman, S., Ehikioya, S., and Rueda, J.A.

Department of Computer Science, University of Manitoba, Winnipeg, Canada, TRILabs, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1487-1492

MAP.10 (242)

Link adaptation of wideband OFDM systems in multi-path fading channel

Li, Z., Song, J., Song, M., and Zhou, W.

Beijing University of Posts and Telecommunications PCN&CAD Center, P.R. China
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1295-1299

MAP.11 (308)

Evaluating RED performance in wireless base-station under self-similar traffic

*Gao, D., Shu, Y., Qi, L. and Yang, O. **

Department of Computer Science, Tianjin University, Tianjin, China, *School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1545-1549

MAP.12 (316)

Providing traffic engineering capabilities in data networks

AhleHagh, H., Pedram, H., Sabaee, M., and Falahati, A.

Iran Telecommunication Research Center, Iran University of Science and Technology, Iran
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1550-1554

MAP.13 (353)

Bit allocation algorithm for multi-user adaptive OFDM system with adaptive trellis coded MQAM

Song, S., Hou, C., and Cao, D.

School of Electronic Information Engineering, Tianjin University, Tianjin, P.R. China
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1300-1304

MAP.14 (373)

A novel method with adaptive multi-service transmission algorithms based on OFDM

Hou, C. and Zhang, H.

School of Electronic Information Engineering, Tianjin University, Tianjin, P.R. China
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1305-1310

MAP.15 (378)

Unequal power assignment strategy for 3G system and the application in AMR

Fei, Z., Wan, L., and Kuang, J.

Department of Electronics Engineering, Beijing Institute of Technology, Beijing, China
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1493-1498

MAP. 16 (133)

Analysis of the E-plane metal strip on a dielectric slab in rectangular waveguides

Oraizi, H. and Pakizeh, T.

Department of Electrical Engineering, Iran University of Science and Technology, Iran
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 317-322

MAP.17 (415)

Automating NEC2 with Matlab for antenna analysis and design

Dietrich, J. and Sebak, A.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 342-346

MAP.18 (384)

Multifractal modelling of arbitrary object boundaries in image segmentation

Siddiqui, S. and Kinsner, W.

Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory,
University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 950-956

MAP.19 (399)

Effects of using superresolution techniques in ISAR imagery

*Corral, E., Thomas, G., and Flores, B. **

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg,
Canada, *Electrical and Computer Engineering Department, The University of Texas at El Paso,
El Paso, USA
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 353-357

MAP.20 (166)

A marine engine torsion vibration measuring method and its implementation based on FPGA

*Fu, Y. and Kinsner, W. **

College of Information and Communication Engineering, Harbin Engineering University,
Heilongjiang, China, *Department of Electrical and Computer Engineering, University of
Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 488-493

MAP.21 (407)

An intelligent turbidity and temperature sensing unit for water quality assesment

*Postolache, O., Dias Pereira, J. *, and Silva Girão, P.*

Instituto de Telecomunicacoes, Lisboa, Portugal, *Instituto Politecnico de Setubal, EST
Setubal, Portugal
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 494-499

MAP.22 (408)

A temperature compensated power measurement system based on a hall effect sensor

*Dias Pereira, J., Postolache, O. *, and Silva Girão, P. **

Instituto Politecnico de Setubal, EST Setubal, Portugal, *Instituto de Telecomunicacoes,
Lisboa, Portugal
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 500-503

MAP. 23 (457)

Fault detection and isolation in fluid power systems using a parametric estimation method

Song, R. and Sepehri, N.

Department of Mechanical and Industrial Engineering, University of Manitoba, Winnipeg,
Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 144-149

MAP.24 (197)

Application of wellbeing concepts in short term generating unit preventive maintenance scheduling

Abdulwhab, A. and Billinton, R.

Power Systems Research Group, University of Saskatchewan, Saskatoon, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 150-155

MAP.25 (135)

Multilayer perceptron discrimination of software quality in a biomedical data analysis system

Alexiuk, M. and Pizzi, N.

Institute for Biodiagnostics, National Research Council, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 770-775

Oral Session TM1: Reliability Engineering

TIME: 09:30 – 10:30
ROOM: LA VERENDRYE

CHAIRS: R. Gordon
S. Ramanna

TUESDAY, MAY 14

TM1.1 (206) 09:30-09:50

Approximation methods in a software quality measurement framework

Ramanna, S.

Department of Business Computing, University of Winnipeg, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 566-571

TM1.2 (344) 09:50-10:10

A novel approach to fault detection and isolation based on wavelet analysis and neural network

Xu, Z. and Zhao, Q.

Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 572-577

TM1.3 (356) 10:10-10:30

On the model checking of the RCMP-800 input FIFO

Lu, J. and Tahar, S.

Department of Electrical and Computer Engineering, Concordia University, Montreal, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 578-583

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session TM2: Nanotechnology & Micromachining 2

TIME: 09:30 – 10:30
ROOM: SALON AB

CHAIRS: D. Oliver
K. Stanley

TUESDAY, MAY 14

TM2.1 (358) 09:30-09:50

Fabrication of a micromachined direct Methanol fuel cell

Stanley, K., Wu, Q., Vanderhock, T., Nikumb, S., Walker, Z., Parameswaran, M.***

National Research Council of Canada, *University of New Brunswick, **Simon Fraser
University

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 450-454

TM2.2 (210) 09:50-10:10

Sub-zeptofarad sensitivity scanning capacitance microscopy

Tran, T., Oliver, D., Thomson, D., and Bridges, G.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 455-459

TM2.3 (262) 10:10-10:30

Deep etching of silicon with XeF2 gas

Bahreyni, B. and Shafai, C.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 460-464

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session TM3: Pattern Recognition & Image Analysis 2TIME: 09:30 – 10:30
ROOM: TACHECHAIRS: H. El Boustani
E. Hossain

TUESDAY, MAY 14

TM3.1 (379) 09:30-09:50

Wavelet transform based compression techniques for raw SAR data*El Boustani, A., Turiel, A.*, Huot, E.*, Brunham, K., and Kinsner, W.*

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, TRILabs, Winnipeg, Canada, *Air Project, INRIA (Institut National de Recherche en Informatique et en Automatique), Cedex, France

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 857-862

TM3.2 (368) 09:50-10:10

A fast moving object edge detection approach*Wei, Y., Du, S., and Badawy, W.*

Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 863-866

TM3.3 (259) 10:10-10:30

Comparison of square-pixel and hexagonal-pixel resolution in image processing*Tirunelveli, G., Gordon, R.*, and Pistorius, S.***

Department of Electrical and Computer Engineering, University of Manitoba, *Department of Radiology, University of Manitoba, **Medical Physics, CancerCare, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 867-872

COFFEE/REFRESHMENT BREAKTIME: 10:30 – 10:50
ROOM: PROVENCHER

- S.29 -

Oral Session TM4: Computer Networks 5: MulticastTIME: 09:30 – 10:30
ROOM: GATEWAYCHAIRS: D. Dodds
M. Maamoun

TUESDAY, MAY 14

TM4.1 (212) 09:30-09:50

Interfaçage dans les systèmes à microprocesseur avec un adressage physique accéléré*Maamoun, M., Benbelkacem, A., and Berkani, P.*

Laboratoire du Signal and Communications, École Nationale Polytechniques, Alger, Algérie

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1406-1411

TM4.2 (261) 09:50-10:10

AM-SRL: Adaptive multicast operation of the supernode-based reverse labeling algorithm*Dong, Y., Yang, T., Makrakis, D., and Lambadaris, I.**

Broadband Wireless and Internetworking Research Laboratory, School of Information Technology and Engineering, University of Ottawa, *Department of Systems and Computer Engineering, Carleton University

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1412-1417

TM4.3 (266) 10:10-10:30

In-building data-over-voice Internet access*Lynch, D. and Dodds, D.**

University of Saskatchewan, *University of Saskatchewan and TRILabs, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1418-1423

COFFEE/REFRESHMENT BREAKTIME: 10:30 – 10:50
ROOM: PROVENCHER

- S.30 -

Oral Session TM5: Power System ProtectionTIME: 10:50 – 12:30
ROOM: LA VERENDRYECHAIRS: S. Faried
M. Raghuv eer

TUESDAY, MAY 14

TM5.1 (196) 10:50-11:10

Rough set methods in power system fault classification*Xu, X. and Peters, J.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 100-105

TM5.2 (420) 11:10-11:30

Complete assessment of impact of lightning strikes on buried cables*Song, Z., Raghuv eer, M., and He, J.**Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, *Department of Electrical Engineering, Wuhan University, Hubei, P.R. China
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 30-36

TM5.3 (432) 11:30-11:50

Software model for inverse time overcurrent relays incorporating IEC and IEEE standard curves*Tan, J.C., McLaren, P.*, Jayasinghe, R.**, and Wilson, P.***Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, *Center for Advanced Power Systems, Florida State University, Tallahassee, USA, **Manitoba HVDC Research Centre, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 37-41

TM5.4 (121) 11:50-12:10

Composite system reliability evaluation incorporating an HVDC link and a static synchronous series compensator*Billinton, R., Fotuhi-Firuzabad, M., Faried, S.O., and Aboreshaid, S.**Power Systems Research Group, University of Saskatchewan, Saskatoon, Canada, *General Organization for Technical Education and Vocational Training, Riyadh, Saudi Arabia
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 42-47

TM5.5 (211) 12:10-12:30

Investigation of a hybrid travelling wave/impedance relay principle*Pathirana, V., McLaren, P.*, and Dirks, E.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, *Center for Advanced Power Systems, Florida State University, Tallahassee, USA
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 48-53

LUNCHTIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session TM6: User Interface and Adaptive SystemsTIME: 10:50 – 12:30
ROOM: SALON ABCHAIRS: V. Dadarlat
R. Paranjape

TUESDAY, MAY 14

TM6.1 (193) 10:50-11:10

Designing real-time vision based augmented reality environments for 3D collaborative applications*Liu, P., Georganas, D., and Boulanger, P.**Multimedia Communication Research Laboratory, University of Ottawa, Ottawa, Canada, *University of Alberta, Edmonton, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 715-720

TM6.2 (271) 11:10-11:30

Environment-based agent behavior modelling*Martens, R. and Paranjape, R.*Electronic Systems Engineering, TRILabs Regina, University of Regina, Regina, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 721-725

TM6.3 (203) 11:30-11:50

Final exam timetabling: A practical approach*Wong, T., Cote, P., and Gely, P.**Department of Automated Production Engineering, *Dean of Resource Management, École de technologie supérieure, Université du Québec, Montréal, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 726-731

TM6.4 (170) 11:50-12:10

A personalized approach for teaching Web-based curriculum in communications and computer networks*Dadarlat, V., Coffey, T., and Ivan, C.*ECE Department, *CSIS Department, University of Limerick, Ireland
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 732-737

TM6.5 (186) 12:10-12:30

Release date prediction for telecommunications software using Bayesian belief networks*Wang, Y. and Smith M.*Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 738-742

LUNCHTIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session TM7: Signal Processing 1TIME: 10:50 – 12:30
ROOM: TACHECHAIRS: D. McNeill
J. Peters

TUESDAY, MAY 14

TM7.1 (327) 10:50-11:10

Speech signal recovery in colored noise using an adaptive Kalman filtering*Gabrea, M.*Electrical Engineering Department, Ecole de Technologie Superieure, Quebec, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 974-979

TM7.2 (195) 11:10-11:30

Approximating sensor signals: A rough set approach*Borkowski, M. and Peters, J.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 980-985

TM7.3 (107) 11:30-11:50

Processing noisy analog signals from microsensor arrays and VLSI imagers using stochastic binary computations*McNeill, D., Zhao, D., Shafiq, C., Chadha, N., Cuhadar, A., and Card, H.*Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 986-990

TM7.4 (168) 11:50-12:10

A method for the synthesis of intermediate views in image-based rendering using image rectification*Sun, X. and Dubois, E.*School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 991-994

TM7.5 (217) 12:10-12:30

Parallel filtering and thresholding of images on the SIMD DSP-RAM architecture*Dillen, S. and Cockburn, B.F.*Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 995-1000

LUNCHTIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session TM8: Computer Networks 6: MobileTIME: 10:50 – 12:30
ROOM: GATEWAYCHAIRS: R. McLeod
A. Sesay

TUESDAY, MAY 14

TM8.1 (254) 10:50-11:10

Iterative semi-blind multiuser detection using subspace approach for MC-CDMA uplink*Kafle, P. and Sesay, A.*Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1374-1379

TM8.2 (304) 11:10-11:30

Admission control algorithm for wireless communications networks considering adjustable channel separation*Lin, C. and Lin, F.*Department of Information Management, National Taiwan University, Taipei, R.O.C.
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1380-1385

TM8.3 (345) 11:30-11:50

TSMLE-based MT-CDMA system in Rician fading channel*Rahman, Q. and Sesay, A.*Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1386-1391

TM8.4 (337) 11:50-12:10

A fast CPU conserving algorithm for optimal broadcast scheduling in networks of pervasive devices*Vlajic, N., Charalambous, C.D.*, and Makrakis, D.*

Broadband Wireless and Internetworking Research Laboratory, School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada, *Department of Electrical and Computer Engineering, Centre for Intelligent Machines, McGill University, Montreal, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1392-1399

TM8.5 (346) 12:10-12:30

Data sequence detection for MT-CDMA signals*Rahman, Q. and Sesay, A.*Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1400-1405

LUNCHTIME: 12:30 – 14:00
ROOM: 7th FLOOR

Poster Session: Tuesday Morning

TIME: 10:30 – 12:30 CHAIR: D. Oliver
ROOM: PROVENCHER

TUESDAY, MAY 13

TMP.01 (117)

A scheme for implementing address translation storage buffers

*Mohamed, A. and Sagahyroon, A.**

Microsoft Corporation, * California State University, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 626-633

TMP.02 (220)

Isomorphic structured synthesis of half adder and full adder

Ghaznavi-Ghoushchi, M. and Nabavi, A.

School of Engineering, Tarbiat Modares University, Tehran, Iran

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 634-639

TMP.03 (258)

Performance analysis of a dual processor workstation

Trybus, D., Kucerovsky, Z., Ieta, A., Doyle, T., and Flatley, M.

Department of Electrical and Computer Engineering, University of Western Ontario, London, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 640-645

TMP.04 (417)

A bridge for a multiprocessor graphics system

Balatsos, A. and Aleksic, M.

ATI Technologies Inc., Toronto, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 646-650

TMP.05 (418)

Wavelet transform architectures for video applications

Fatemi, O. and Bolouki, S.

Department of Electronics and Computer Engineering, University of Tehran, Iran

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 651-656

TMP.06 (165)

A spin tracing algorithm applied to mini-type magnetic bearing meter and its SoC implementation

Fu, Y., Zhang, L., and Kinsner, W.***

College of Information and Communication Engineering, *College of Underwater Acoustic Engineering, Harbin Engineering University, Heilongjiang, China, **Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 504-509

TMP.07 (194)

Hardware software codesign of a safety-critical embedded computer system for an automatic endoscope

Khan, G. and Jin, M.

Electrical and Computer Engineering, Ryerson University, Toronto, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 657-662

TMP.08 (176)

Prediction of oil well production using multi-neural networks

Nguyen, H., Chan, C., and Wilson, M.***

Department of Computer Science, Department of Computer Science / Energy Informatics Laboratory, Faculty of Engineering, University of Saskatchewan, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 798-802

TMP.09 (191)

Modelling the thrust developed by a sector motor via artificial neural networks

Leite, L., Souza, C.R., Serni, P., Nunes, I., and Geromel, L.

Electrical Engineering Department, University of Campinas, Sao Paulo, Brazil

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 803-808

TMP.10 (298)

Exploring content-based image indexing techniques in the compressed domain

McIntyre, A. and Heywood, M.

Faculty of Computer Science, Dalhousie University, Halifax, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 957-962

TMP.11 (320)

An artificial neural network based feature evaluation index for the assessment of clinical factors in breast cancer survival analysis

Seker, H., Odetayo, M., Petrovic, D., Naguib, R., Bartoli, C., Alasio, L.*, Lakshmi, M.**,*

*Sherbet, G.***, and Hinton, O.*****

BIOCORE, School of Mathematical and Information Sciences, Coventry University, Coventry, UK, *Istituto Nazionale per lo Studio e La Cura dei Tumori, Milan, Italy, **Cancer Research Unit, The Medical School, University of Newcastle upon Tyne, UK, ***The Institute for Molecular Medicine (IMM), Huntington Beach, USA, ****Department of Electrical and Electronic Engineering, University of Newcastle upon Tyne, UK

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1211-1215

TMP.12 (326)

The application of intelligent systems in power transformer design

*Geromel, L. ad Souza, C.**

CEFET/PR, SP, Brazil, *UNICAMP-FEEC-DSCE, SP, Brazil

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 285-290

TMP.13 (338)

Algorithm development for grain kernel identification

Visen, N., Paliwal, J., and Jayas, D.

Department of Biosystems Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 963-967

TMP.14 (101)

A hierarchical genetic algorithm for path planning in a static environment with obstacles

Wang, C., Soh, Y., Wang, H., and Wang, H.

Division of Control & Instrumentation, School of EEE, Nanyang Technological University, Singapore

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1652-1657

TMP. 15 (410)

Measurement based traffic prediction using fuzzy logic

*Jiang, Q., Srinivasan, R. *, and Slonowsky, D. ***

Manifold Data Mining Incorporated, Toronto, Canada, *Department of Mathematics and Statistics, University of Saskatchewan, Saskatoon, Canada, **Department of Statistics and Institute of Industrial Mathematical Sciences, University of Manitoba, Winnipeg, Canada,

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 834-840

TMP.16 (145)

Investigation of data transmission logs using the BestFit package

Wang, A. and Pochee, P.

Faculty of Computer Science, University of New Brunswick, Fredericton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1555-1558

TMP.17 (178)

Mobile agent network management system performance study in frame relay networks

Hu, W., Benedicenti, L., and Paranjape, R.

Faculty of Engineering, University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1499-1504

TMP.18 (205)

Efficient integration of voice and data for transmission over digital subscriber lines (DSL)

Orozco-Barbosa, L., Siddiqui, S., and Yongacoglu, A.

School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1505-1510

TMP.19 (222)

Managing end-to-end QoS

Chang, Q., Song, J. and Song, M.

Beijing University of Posts and Telecommunications

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1600-1604

TMP.20 (224)

Study of QoS in Utran

Chang, Q., Song, J., and Hou, C.

Beijing University of Posts and Telecommunications

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1605-1609

TMP.22 (253)

Minimal cost design of virtual private networks

Liang, H., Kabranov, O., Makrakis, D., and Orozco-Barbosa, L.

Broadband Wireless and Internetworking Research Laboratory, School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1610-1615

TMP.23 (303)

Enhancement of the on-demand multicast routing protocol in the AD hoc network

Chen, L., Lu, K., Jin, Z., and Liang, B.

School of Electronic Engineering, Tianjin University, Tianjin, P.R. China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1511-1515

TMP.24 (411)

Fuzzy connection admission control for self-managed networks

*Srinivasan, R., and Talim, J. **

University of Saskatchewan, *Carleton University, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1516-1521

TMP.25 (184)

Dynamic stability analysis and control for the mobile manipulator

Li, Y.

Faculty of Science and Technology, University of Macau, Macao, P.R. China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 554-559

TMP.26 (371)

Joint parameters identification for redundant manipulator based on fuzzy theory and genetic algorithm

Li, Y., Liu, X, Peng, Z. *, and Liu, Y. **

Faculty of Science and Technology, University of Macau, Macao SAR, P.R. China, *Automation School, Beijing University of Posts and Telecommunications, Beijing, P.R. China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 560-565

TMP.27 (376)

Cytobots: Intracellular robotic micromanipulators

*Chrusch, D. *, Podaima, B., and Gordon, R. ***

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, *Telecommunication Research Laboratories, TRILabs, Winnipeg, Canada, **

Department of Radiology, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1640-1645

Oral Session TA1: Image Processing 1

TIME: 14:00 – 15:20 CHAIRS: M. Alexander
ROOM: LA VERENDRYE R. Naguib

TUESDAY, MAY 14

TA1.1 (192) 14:00-14:20

Colour texture analysis using co-occurrence matrices for classification of colon cancer images

*Shuttleworth, J., Todman, A., Naguib, R., Newman, B., and Bennett, M.**

Biocore, MIS, Coventry University, Coventry, UK, *Royal Victoria Infirmary, Newcastle upon Tyne, UK

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1134-1139

TA1.2 (281) 14:20-14:40

Automated analysis of gene micro-array images

*Bowman, C., Baumgartner, R., and Booth, S.**

Institute for Biodiagnostics, NRCC, Winnipeg, Canada, * Canadian Centre for Human and Animal Health, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1140-1144

TA1.3 (386) 14:40-15:00

Detection of internal displacement of tissues in ultrasound images using image registration technique

*Dizaji, M. and Dizaji, R.**

Department of Medical Physics, Tarbiat Modares University, Tehran, Iran, * Electrical and Computer Engineering Department, University of Victoria, Victoria, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1145-1148

TA1.4 (201) 15:00-15:20

The robust, hierarchical registration of multimodal medical images

Alexander, M.

Institute for Biodiagnostics, NRCC, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1149-1153

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session TA2: Computer Hardware 2

TIME: 14:00 – 15:20 CHAIRS: B. Cockburn
ROOM: SALON AB H. El Boustani

TUESDAY, MAY 14

TA2.1 (389) 14:00-14:20

A study of bit planes for the compression of raw synthetic aperture radar data

Brunham, K., El Boustani, H., and Kinsner, W.

Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory, University of Manitoba, Winnipeg, Canada, TRILabs, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 347-352

TA2.2 (273) 14:20-14:40

Performance evaluation of VBR traffic in infiniband

Alfaro, F., Sanchez, J., Orozco, L., and Duato, J.***

Department de Informatica, Escuela Politecnica Superior, Uni. de Castilla-La Mancha, Albacete, Spain, *School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada, **Department de Informatica de Sistemas y Computadores, Uni. Politecnica de Valencia, Valencia, Spain

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1532-1537

TA2.3 (398) 14:40-15:00

Efficient parallel implementation of motion estimation on the computational RAM architecture

Ai, H., Li, N., Li, T., Mandal, M., and Cockburn, B.

Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 609-613

TA2.4 (355) 15:00-15:20

Formal modelling of the ADSP-2100 processor using HOL

*Habibi, A., Tahar, S., and Ghazel, A.**

Department of Electrical and Computer Engineering, Concordia University, Montreal, Canada, *Ecole Supérieure des Communications de Tunis, Ariana, Tunisia

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 614-619

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Organized Oral Session TA3: Communications Systems 3: CDMA

TIME: 14:00 – 15:20
ROOM: TACHE

CHAIRS: H. Nguyen
E. Shwedyk

TUESDAY, MAY 14

TA3.1 (115) 14:00-14:20

On carrier spacing in multicarrier CDMA systems

*Nguyen, H. and Shwedyk, E.**

Department of Electrical Engineering, University of Saskatchewan, Saskatoon, Canada,

*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1216-1220

TA3.2 (426) 14:20-14:40

Iterative packet combining scheme for broadband packet transmission

*Sureshkumar, S. and Rajatheva, R.**

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg,

Canada,*Telecommunications Program, Asian Institute of Technologies, Thailand

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1221-1225

TA3.3 (436) 14:40-15:00

Augmenting the capacity of CDMA systems

Song, T. and Shwedyk, E.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1226-1230

TA3.4 (251) 15:00-15:20

Capacity analysis of WCDMA-based packet data mobile cellular network with rate adaptation

Zhou, W., Song, J., Song, M., and Li, Z.

Beijing University of Posts and Telecommunications PCN&CAD Center

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1231-1235

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session TA4: Computer Networks 7: Wireless

TIME: 14:00 – 15:20
ROOM: GATEWAY

CHAIRS: J. Rueda
M. Soleymani

TUESDAY, MAY 14

TA4.1 (204) 14:00-14:20

Profile-based mobile MPLS protocol

Yang, T., Dong, Y., Zhou, B., and Makrakis, D.

Broadband Wireless and Internetworking Research Laboratory, School of Information

Technology and Engineering, University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1352-1356

TA4.2 (425) 14:20-14:40

Queueing model for Bluetooth multipoint communications

Kibria, S., Rueda, A., and Rueda, J.

TRLabs, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1357-1362

TA4.3 (332) 14:40-15:00

Turbo coded OFDM for wireless local area networks

Torabi, M. and Soleymani, M.

Electrical and Computer Engineering Department, Concordia University, Montreal, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1363-1367

TA4.4 (260) 15:00-15:20

Supernode-based reverse labeling algorithm: QoS support in mobile AD hoc wireless networks

*Dong, Y., Yang, T., Makrakis, D., and Lambadaris, I.**

Broadband Wireless and Internetworking Research Laboratory, School of Information

Technology and Engineering, University of Ottawa, *Department of Systems and Computer

Engineering, Carleton University

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1368-1373

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session TA5: Power Electronics

TIME: 15:40 – 17:00 CHAIRS: U. Annakkage
ROOM: LA VERENDRYE V. Sood

TUESDAY, MAY 14

TA5.1 (237) 15:40-16:00

Application of a superconducting magnetic energy storage unit to improve the stability performance of power systems

Abu Siada, A., Keerthipala, W., and Lawrance, W.

School of Electrical and Computer Engineering, Curtin University of Technology, Australia
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 201-206

TA5.2 (113) 16:00-16:20

Static synchronous series compensator model in EMTP

Sood, V.

Concordia University, Montreal, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 207-211

TA5.3 (279) 16:20-16:40

A novel gate driver circuit for snubberless, low-noise operation of high power IGBT

Sachdeva, R. and Nowicki, E.

Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 212-217

TA5.4 (283) 16:40-17:00

A PWM current amplifier for testing protective relay

*Ling, K., Gole, A., McLaren, P. *, and Wachal, R. ***

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, *Center for Advanced Power Systems, Florida State University, Tallahassee, USA, **Manitoba HVDC Research Centre, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 218-223

Organized Oral Session TA6: Real -Time Systems

TIME: 15:40 – 17:00 CHAIRS: F. Ngolah
ROOM: SALON AB Y. Wang

TUESDAY, MAY 14

TA6.1 (309) 15:40-16:00

RTPA: A new approach to real-time system specification

Wang, Y.

The Theoretical and Empirical Software Engineering Research Centre (TESERC), Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 663-668

TA6.2 (451) 16:00-16:20

Formal specification of a real-time lift dispatching system

*Wang, Y. and Ngolah, F. **

The Theoretical and Empirical Software Engineering Research Centre (TESERC), Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada, *Department of Computer Science, University of Buea, Republic of Cameroon
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 669-674.

TA6.3 (452) 16:20-16:40

Case studies on translation of RTPA specification into Java programs

*Wang, Y. and Wu, W. **

The Theoretical and Empirical Software Engineering Research Centre (TESERC), Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada, *Alta Vista Search Company, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 675-680

TA6.4 (453) 16:40-17:00

Design and implementation of an Web-based distributed control system

Chen, L. and Wang, Y.

The Theoretical and Empirical Software Engineering Research Centre (TESERC), Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 681-686

Oral Session TA7: Biomedical Signals 1: AnalysisTIME: 15:40 – 17:00
ROOM: TACHECHAIRS: R. Baumgartner
Z. Moussavi

TUESDAY, MAY 14

TA7.1 (369) 15:40-16:00

Acoustic airflow estimation from tracheal sound power*Yap, Y. and Moussavi, Z.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1073-1076

TA7.2 (280) 16:00-16:20

Dimensionality reduction for bio-medical spectra*Bowman, C., Baumgartner, R., and Somorjai, R.*Institute for Biodiagnostics, NRCC, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1077-1082

TA7.3 (213) 16:20-16:40

Crameré-Rao bounds for circadian rhythm parameter estimation*Zarowski, C. and Kropyvnytskyy, I.*Department of Electrical and Computer Engineering, Queen's University, Kingston, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1083-1086

TA7.4 (218) 16:40-17:00

A posture monitoring system using accelerometers*Nevins, R., Durdle, N., and Raso, V.**Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada,
Glenrose Rehabilitation Site, Capital Health Authority, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1087-1092

Oral Session TA8: Computer Networks 8: MPLSTIME: 15:40 – 17:00
ROOM: GATEWAYCHAIRS: O. Kabranov
D. Makrakis

TUESDAY, MAY 14

TA8.1 (277) 15:40-16:00

Dynamic resource allocation in QoS-enabled / MPLS supported virtual private networks and its Linux based implementation*Jia, Y., Guerrero, M., Kabranov, O., Makrakis, D., and Barbosa, L.*Broadband Wireless and Internetworking Research Laboratory, School of Information
Technology and Engineering, University of Ottawa, Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1448-1454

TA8.2 (374) 16:00-16:20

Performance evaluation for real-time traffic in differentiated services capable IP network*Zhou, Q., Yu, H.*, Makrakis, D., Kabranov, O., and Barbosa, L.*Broadband Wireless and Internetworking Research Laboratory, School of Information
Technology and Engineering, University of Ottawa, Ottawa, Canada, *Software Department of
"Research in Motion" (RIM), Waterloo, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1522-1526

TA8.3 (359) 16:20-16:40

Inter-domain adaptive traffic engineering for IP differentiated services MPLS-based networks*Saad, T., Yang, T., Makrakis, D., and Groza, V.*Broadband Wireless and Internetworking Research Laboratory, School of Information
Technology and Engineering, University of Ottawa, Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1527-1531

TA8.4 (246) 16:40-17:00

Comparing IPv6 end-to-end QoS capabilities with QoS techniques using RSVP and MPLS*Fgee, E., Phillips, W., Sivakumar, S.*, and Robertson, W.*Department of Engineering Mathematics, Dalhousie University, *Faculty of Commerce, St.
Mary's University, Halifax, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1455-1460

Poster Session: Tuesday Afternoon

TIME: 14:00 – 16:00
ROOM: PROVENCHER

CHAIR: D. McNeill

TUESDAY, MAY 13

TAP.01 (104)

Application of signal processing tools for power quality analysis

Jurado, F., Acero, N., and Ogayar, B.

University of Jaén

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 82-87

TAP.02 (139)

Reliability assessment of transmission and distribution systems considering repair in adverse weather conditions

Billinton, R. and Singh, G.

Power System Reseach Group, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 88-93

TAP.03 (141)

Customer outage cost evaluation of an actual failure event

Billinton, R. and Wangdee, W.

Power System Reseach Group, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 94-99

TAP.05 (325)

Application of finite element method in design of a 50 KW direct drive synchronous generator for variable speed wind turbines

Chang, L. and Wang, Q.

Department of Electrical and Computer Engineering, University of New Brunswick, Fredericton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 106-111

TAP.06 (331)

Fuzzy and heuristic techniques for reactive power compensation of radial distribution feeders: A comparative study

*Mekhameer, S., El-Hawary, M., Mansour, M. *, Moustafa, M. *, and Soliman, S. ***

Department of Electrical and Computer Engineering, DalTech @ Dalhousie University, Halifax, Canada, *Department of Electrical Power and Machines, Ain Shams University, Cairo, Egypt,

**Department of Electrical Engineering, University of Qatar, Doha, Qatar

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 112-121

TAP.07 (364)

Simulation of eddy current effects in transformers

*Chandrasena, W., McLaren, P. *, Annakkage, U., Jayasinghe, R. **, and Dirks, E.*

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, *Centre for Advanced Power Systems, Florida State University, Tallahassee, USA,

**Manitoba HVDC Research Centre, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 122-126

TAP.08 (450)

A multistage DFT - FFT - CZT approach for accurate efficient analysis of sparsely distributed spectra

*Runtz, K. and Hack, D. **

Electronic Systems Engineering, University of Regina, Regina, Canada, *LV Controls, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 127-132

TAP.09 (454)

Simulation of transformer hysteresis loop using fractal theory

*Zheng, T., Liu, J., Liu, W., and Li, G. **

North China Electric Power University, Beijing, P.R. China, *Beijing Hollysy Ltd., Beijing, P.R. China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 133-137

TAP.10 (455)

The study of real-time transient stability emergency control in power system

Li, Y., Tenglin, Liu, W., and Liu, J.

SiFang Institute of North China Electric Power University, Beijing, China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 138-143

TAP.11 (103)

Influence of pollution on the performance of metal oxide surge arresters

Singh, R. and Singh, T.

Department of Electrical Engineering, NERIST Itanagar, India

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 224-229

TAP.12 (127)

Dynamic compensation using switched/modulated power filters

Sharaf, A. and Kreidi, P.

Electrical and Computer Engineering Department, The University of New Brunswick,
Fredericton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 230-235

TAP. 13 (130)

Contactless circuit breaker protection for AC line commutated thyristor convertor

Al-Dhalaan, S.

General Organization for Technical Education and Vocational Training, Riyadh, Saudi Arabia

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 236-239

TAP.14 (147)

Development of iterative learning control strategy for active power filter

Zha, X., Tao, Q., Sun, J., and Yunping, C.

The School of Electrical Engineering, Wuhan University, Hubei, P.R. China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 240-245

TAP.15 (151)

A novel combined control for switched reluctance motor drive

*Chen, H. and Ahn, J.**

Department of Automation, China University of Mining and Technology, Xuzhou, China,

*Department of Electrical and Computer Engineering, Kyungshung University, Pusan, Korea

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 246-250

TAP.16 (200)

A low speed flywheel system for wind energy conversion

Boutot, T., Chang, L., and Luke, D.

Department of Electrical and Computer Engineering, University of New Brunswick, Fredericton,
Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 251-256

TAP. 17 (223)

A photovoltaic simulator based on DC chopper

Zeng, Q., Song, P. and Chang, L.*

Department of Electrical and Computer Engineering, University of New Brunswick, Fredericton,

Canada, * Department of Electrical and Computer Engineering, East china Jiaotong University,

Nanchang, P.R. China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 257-261

TAP.18 (267)

Rugged control circuit for efficient operation of a wind turbine

Peters, G. and Knight, A.

Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 262-267

TAP.19 (311)

Space vector model of an induction machine with two independently controllable shafts based on the DUOMOTOR® principle

Schmidt, E., Lechner, R. and Schrödl, M.

Institute of Electrical Drives and Machines, Vienna University of Technology, Vienna, Austria

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 268-273

TAP.20 (321)

A comparison between three modeling approaches for computer implementation of high-fixed-switching-frequency power converters operating in a continuous mode

*Kanaan, H. and Al-Haddad, K.**

Campus des Sciences, ESIB – St. Joseph University, Beirut, Lebanon, *Canada Research Chair

in Energy Conversion and Power Electronics, Ecole de Technologie Supérieure, Montreal,

Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 274-279

TAP.21 (363)

Interline power flow controller (IPFC) steady state operation

*Diez, V., Annakkage, U., Gole, A., Demchenko, P., and Jacobson, D.**

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg,

Canada, *Manitoba Hydro, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 280-284

TAP.22 (187)

A multifeature speech/music discrimination system

Saad, E., El-Adawy, M., Abu-Elwafa, M., and Wahba, A.

Electronics and Communication Department, Faculty of Engineering, Helwan University, Cairo,

Egypt

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1055-1058

TAP.23 (215)

Accurate bit allocation and rate control for DCT domain video transcoding

Lei, Z. and Georganas, N.

Multimedia Communications Research Laboratory, University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 968-973

TAP.24 (347)

Underground ultrasound probing for monitoring carbon dioxide flooding in oil producing reservoirs

Liu, N., Paranjape, R., and Asghari, K.

Faculty of Engineering, University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 510-514

TAP.25 (394)

Analysis of timing sensitivity and Nyquist pulse design

Mneina, S. and Martens, G.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1059-1063

TAP.26 (429)

A multimedia communication terminal for telephone channels based on H.324

Langi, A.

DSP Research and Technology Group, Laboratory for Signals and Systems, Department of Electrical Engineering and IC Design Laboratory IURC Microelectronics, Bandung Institute of Technology, Jawa Barat, Indonesia

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1064-1067

TAP.27 (445)

Distributed vector processing of the S-transform for medical applications

Brown, R., Zhu, H., and Mitchell, J.**

Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada,

*Department of Radiology and Clinical Neurosciences, Foothills Medical Centre, Seaman

Family MR Centre

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1129-1133

TAP.28 (448)

Pulse shaping and signal modulation techniques to improve the multipath and noise performance of narrowband precision RF ranging

Runtz, K. and Yang, F.

Electronic Systems Engineering, University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 358-363

TAP.29 (459)

Design of fractional delay filters using least square error and Fourier series

Babaii, N. and Nabavi, A.

Department of Electrical Engineering, Tarbiat Modares University, Tehran, Iran

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1068-1072

Oral Session WM1: Instrumentation & Sensors

TIME: 09:30 – 10:30

CHAIRS: B. Daku

WEDNESDAY, MAY 15

ROOM: LA VERENDRYE

D. Thomson

WM1.1 (296) 09:30-09:50

A path loss measurement system for mines

*Hawkins, W., Daku, B., and Prugger, A.**

Department of Electrical Engineering, University of Saskatchewan, Saskatoon, Canada, *Potash

Corporation of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 474-478

WM1.2 (312) 09:50-10:10

Structural health monitoring of composite poles using fiber optic sensors

Rivera, E., Thomson, D., and Polyzois, D.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 479-482

WM1.3 (295) 10:10-10:30

A microseismic piezofilm sensor

*Daku, B. and Prugger, A.**

Department of Electrical Engineering, University of Saskatchewan, Saskatoon, Canada, *Potash

Corporation of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 483-487

LUNCH

TIME: 12:30 – 14:00

ROOM: 7th FLOOR

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50

ROOM: PROVENCHER

Oral Session WM2: Computational Intelligence

TIME: 09:30 – 10:30
ROOM: SALON AB

CHAIRS: R. Abielmona
J. Peters

WEDNESDAY, MAY 15

WM2.1 (143) 09:30-09:50

Heuristic method in searching for global minima relative to high voltage AC error

Han, L. and Peters, J.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 776-781

WM2.2 (406) 09:50-10:10

A micro-economic model for resource allocation in grid computing systems

Subramoniam, K., Maheswaran, M., and Toulouse, M.

Department of Computer Science, University of Manitoba, Winnipeg, Canada, TRILabs,
Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 782-785

WM2.3 (348) 10:10-10:30

Intelligence in architectures: Reconfigurable learning techniques in autonomous agents

Abielmona, R. and Groza, V.

School of Information Technology Engineering, University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 786-791

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session WM3: Pattern Recognition & Image Analysis 3

TIME: 09:30 – 10:30
ROOM: TACHE

CHAIRS: M. Pawlak
G. Thomas

WEDNESDAY, MAY 15

WM3.1 (319) 09:30-09:50

Multi-resolution image watermarking scheme in the spectrum domain

Guo, H. and Georganas, N.

Multimedia Communications Research Lab, School of Information Technology and Engineering,
University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 873-878

WM3.2 (299) 09:50-10:10

Wavelet-based digital watermarking for image authentication

Paquet, A. and Ward, R.

Department of Electrical and Computer Engineering, University of British Columbia,
Vancouver, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 879-884

WM3.3 (435) 10:10-10:30

Robust image watermarking: An invariant domain approach

Pawlak, M. and Xin, Y.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 885-888

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session WM4: Computer Networks 9: QoS

TIME: 09:30 – 10:30
ROOM: GATEWAY

CHAIRS: R. Elliott
D. Makrakis

WEDNESDAY, MAY 15

WM4.1 (288) 09:30-09:50

A measure of fairness for scheduling algorithms in multiuser systems

Elliott, R.

University of Alberta, TRILabs, Edmonton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1583-1588

WM4.2 (365) 09:50-10:10

Applying OFDM in the next generation mobile communications

Zhou, W., Li, Z., Song, J., and Wang, D.

Beijing University of Post and Telecommunications, CAD&PCN Center, Beijing, China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1589-1593

WM4.3 (391) 10:10-10:30

Performance analysis of multimedia applications in differentiated services networks

Chen, Z., Yang, T., and Makrakis, D.

Broadband Wireless and Internetworking Research Laboratory, School of Information
Technology and Engineering, University of Ottawa, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1594-1599

COFFEE/REFRESHMENT BREAK

TIME: 10:30 – 10:50
ROOM: PROVENCHER

Oral Session WM5: Power System Dynamics and Operation

TIME: 10:50 – 12:30
ROOM: LA VERENDRYE

CHAIRS: B. Archer
P. McLaren

WEDNESDAY, MAY 15

WM5.1 (226) 10:50-11:10

Detailed modelling, simulation and benchmarking of the voltage error detector circuit in the static excitation system of Manitoba Hydro's Long Spruce GS using PSCAD/EMTDC

Schuhmann, W. and Archer, B.

Manitoba Hydro, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 54-59

WM5.2 (177) 11:10-11:30

System islanding considerations for improving power system restoration at Manitoba Hydro

Archer, B. and Davies, J.

Manitoba Hydro, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 60-65

WM5.3 (138) 11:30-11:50

A comparison of north american generating unit outage parameters and unavailability indices

Billinton, R. and Ge, J.

Power System Reseach Group, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 66-71

WM5.4 (136) 11:50-12:10

A sequential simulation method for the generating capacity adequacy evaluation of small stand-alone wind energy conversion systems

Billinton, R. and Bagen

Power System Research Group, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 72-77

WM5.5 (329) 12:10-12:30

Particle swarm optimizer for constrained economic dispatch with prohibited operating zones

El-Gallad, A., El-Hawary, M., Sallam, A., and Kalas, A.**

Department of Electrical and Computer Engineering, Dalhousie University, Halifax, Canada,

*Department of Electrical Engineering, Suez Canal University, Port Said, Egypt

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 78-81

LUNCH

TIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session WM6: Electromagnetics & OpticsTIME: 10:50 – 12:30
ROOM: SALON ABCHAIRS: I. Ciric
J. LoVetri

WEDNESDAY, MAY 15

WM6.1 (305) 10:50-11:10

Design, implementation and testing of a prototype 1.1-2.1 GHz SFCW GPR for use in landmine detection*Gilmore, C., Collins, D., Jeffrey, I., Peters, S., and LoVetri, J.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 291-296

WM6.2 (401) 11:10-11:30

Analysis of wave scattering by a lossy dielectric using single source surface integral equations*Curciac, R. and Ciric, I.R.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 297-300

WM6.3 (105) 11:30-11:50

Routing and wavelength assignment for permanent and reliable wavelength paths in WDM networks*Chamberland, S., Khyda, D., and Pierre, S.*Computer Engineering Department, École Polytechnique de Montréal, Montreal, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 301-306

WM6.4 (414) 11:50-12:10

Numerical analysis of field coupling to microstrip circuits*Badawi, A. and Sebak, A.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 307-310

WM6.5 (185) 12:10-12:30

Calculation of electromagnetic fields established by power transmission line using finite difference techniques*Elhirbawy, M., Jennings, L. *, Nguyen, T., and Keerthipala, W. ***

Department of Electrical & Electronic Engineering, *Department of Math. and Statistics, The University of Western Australia, Australia, **Electrical and Computer Engineering, Curtin University of Tech., Australia

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 311-316

LUNCHTIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session WM7: Signal Processing 2TIME: 10:50 – 12:30
ROOM: TACHECHAIRS: R. Danserau
A. Langi

WEDNESDAY, MAY 15

WM7.1 (430) 10:50-11:10

A wavelet-based measurement of signal fractal dimensions*Langi, A. and Nugraha, H.*

DSP Research and Technology Group, Laboratory for Signals and Systems, Department of Electrical Engineering and IC Design Laboratory IURC Microelectronics, Bandung Institute of Technology, Jawa Barat, Indonesia

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1001-1004

WM7.2 (458) 11:10-11:30

Wavelet packet best basis search using generalized Rényi entropy*Danserau, R., Kinsner, W. *, and Cevher, V. ***

Carleton University, Canada* Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, **Georgia Tech, USA

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1005-1008

WM7.3 (183) 11:30-11:50

Automatic segmentation of pavement condition data using wavelet transform*Cuhadar, A., Shalaby, A. *, and Tasdoken, S.*

Systems and Computer Engineering, Carleton University, Ottawa, Canada, Civil Engineering, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1009-1014

WM7.4 (381) 11:50-12:10

ECG compression with block encoding*Huang, B. and Kinsner, W.*

Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1015-1019

WM7.5 (396) 12:10-12:30

Novel architectures for lifting-based discrete wavelet transform*Liao, H., Mandal, M., and Cockburn, B.*

Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1020-1025

LUNCHTIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session WM8: Computer Networks 10: CodingTIME: 10:50 – 12:30
ROOM: GATEWAYCHAIRS: W. Badawy
A. Sesay

WEDNESDAY, MAY 15

WM8.1 (393) 10:50-11:10

Multifractal characterization for classification of telecommunications traffic*Barry, R. and Kinsner, W.*Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory,
University of Manitoba, Winnipeg, Canada, TRILabs, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1538-1544

WM8.2 (255) 11:10-11:30

An iterative multiuser receiver using groupwise MLSE and interference cancellation in a MC-CDMA system*Kafle, P. and Sesay, A.*Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1236-1241

WM8.3 (449) 11:30-11:50

A nonlinear quantization decision approach for digital communication in channels with impulse noise*Runtz, K. and Mkrtychyan, G.**Electronic Systems Engineering, University of Regina, Regina, Canada, *KSV Communications,
Moscow, Russia
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1282-1287

WM8.4 (334) 11:50-12:10

Low power embedded memory architecture for video object decoding in MPEG-4 simple profile*Sayed, M. and Badawy, W.*Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 889-893

WM8.5 (382) 12:10-12:30

Hadamard-Craigen error correcting codes*Craigen, R., Gadshok, N.*, Silverman, S.*, and Kinsner, W.**Department of Mathematics, * Department of Electrical and Computer Engineering, Signal and
Data Compression Laboratory, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1288-1294

LUNCHTIME: 12:30 – 14:00
ROOM: 7th FLOOR

Oral Session WA1: Antenna Theory, Design & ApplicationsTIME: 14:00 – 15:20
ROOM: LA VERENDRYECHAIRS: M. Chaharmir
J. LoVetri

WEDNESDAY, MAY 15

WA1.1 (129) 14:00-14:20

Broadband array design in a broad sense*Zeng, Q. and O'Shaughnessy, D.**Communications Research Centre Canada, Ottawa, Canada, *INRS-Telecommunications,
Montreal, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 323-326

WA1.2 (122) 14:20-14:40

Ultraviolet laser pulse amplification in Ce:LLF*Buhr, M., and Fedosejevs, R.*Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 327-332

WA1.3 (202) 14:40-15:00

Analysis of plasma profile in a semiconductor under quasi-CW laser illumination for application in millimeter wave band antennas*Chaharmir, M., Shaker, J.*, Cuhaci, M.*, and Sebak, A.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg,
Canada, *Communication Research Centre Canada, Ottawa, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 333-335

WA1.4 (318) 15:00-15:20

Near field analysis of a wide band log-spiral antenna for 1-2 GHz GPR*Phelan, M., Su, H., and LoVetri, J.*Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 336-341

COFFEE/REFRESHMENT BREAKTIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session WA2: Genetic Algorithms & Fuzzy Logic

TIME: 14:00 – 15:20
ROOM: SALON AB

CHAIRS: M. El-Hawary
D. Slonowsky

WEDNESDAY, MAY 15

WA2.1 (256) 14:00-14:20

Crossover context in page-based linear genetic programming

Wilson, G. and Heywood, M.

Faculty of Computer Science, Dalhousie University, Halifax, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 809-814

WA2.2 (409) 14:20-14:40

A fuzzy dynamic bandwidth re-allocator

Slonowsky, D., Jiang, Q., and Srinivasan, R.***

Department of Statistics and Institute of Industrial Mathematical Sciences, University of Manitoba, Winnipeg, Canada, *Manifold Data Mining Incorporated, Toronto, Canada,

**Department of Mathematics and Statistics, University of Saskatchewan, Saskatoon, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 815-824

WA2.3 (335) 14:40-15:00

Hopfield-genetic approach for solving the routing problem in computer networks

Hamdan, M. and El-Hawary, M.

Electrical and Computer Engineering Department, Dalhousie University, Halifax, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 823-827

WA2.4 (328) 15:00-15:20

Autonomous genetic machine

Karnik, G., Reformat, M. and Pedrycz, W.

Electrical and Computer Engineering, University of Alberta, Edmonton, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 828-833

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session WA3: Image Processing 2

TIME: 14:00 – 15:20
ROOM: TACHE

CHAIRS: R. Doraiswami
R. Naguib

WEDNESDAY, MAY 15

WA3.1 (198) 14:00-14:20

The efficacy of using object oriented technologies to build collaborative applications in healthcare and medical information systems

Dwivedi, A., Bali, R., James, A., and Naguib, R.**

Data and Knowledge Engineering Research Group (DKERG), School of Mathematical and Information Sciences, * BIOCORE, School of Mathematical and Information Sciences, Coventry University, UK

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1188-1193

WA3.2 (243) 14:20-14:40

Data fusion application for computer-assisted clinical endoscopy

*Zhen, M., Krishnan, S., and Doraiswami, R.**

BMERC, Nanyang, Technological University, Singapore, *Department of Electrical and Computer Engineering, University of New Brunswick, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1116-1119

WA3.3 (351) 14:40-15:00

Biological cell motion tracking in dielectrophoresis (DEP) levitation feedback control system

Du, S., Badawy, W., and Kaler, K.

Department of Electrical and Computer Engineering, University of Calgary, Calgary, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1154-1158

WA3.4 (269) 15:00-15:20

A new strategy for imaging blood vessels in the legs using magnetic resonance (MR) imaging

*Sabati, M. and Frayne, R.**

Department of Electrical and Computer Engineering, University of Calgary; and Seaman Family MR Centre, Foothills Medical Centre, *Departments of Radiology, Clinical Neurosciences, and Electrical and Computer Engineering, University of Calgary; and and Seaman Family MR Centre, Foothills Medical Centre

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1159-1164

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session WA4: Computer Networks 11: Optical

TIME: 14:00 – 15:20
ROOM: GATEWAY

CHAIRS: O. Kabranov
R. McLeod

WEDNESDAY, MAY 15

WA4.1 (276) 14:00-14:20

Performance evaluation of optimal wavelength allocation and flow assignment for optical networks using profit maximization under demands uncertainty

Karbranov, O. and Makrakis, D.

Broadband Wireless and Internetworking Research Laboratory, School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1461-1466

WA4.2 (163) 14:20-14:40

Architecture and development of distributed WWW caching proxy

Zou, J., Lu, K., Ge, Y., Jin, Z., and Ma, J.

School of Electronic Information Engineering, Tianjin University, Tianjin, China
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1467-1471

WA4.3 (287) 14:40-15:00

Application layer routing options for efficient data transport over the Internet

Zhang, J. and McLeod, R.

Department of Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1472-1476

WA4.4 (286) 15:00-15:20

Performance analysis of the Petaweb optical network architecture

Huang, A., Kabranov, O., and Makrakis, D.

Broadband Wireless and Internetworking Research Laboratory, School of Information Technology and Engineering, University of Ottawa, Ottawa, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1477-1481

COFFEE/REFRESHMENT BREAK

TIME: 15:20 – 15:40
ROOM: PROVENCHER

Oral Session WA5: Electrical Machines 2: High Voltage

TIME: 15:40 – 17:00
ROOM: LA VERENDRYE

CHAIRS: C. de Souza
E. Schmidt

WEDNESDAY, MAY 15

WA5.1 (249) 15:40-16:00

About the material dependent transmission of mechanical quantities through subconductors, insulation and envelope of a Roebel bar

*Grabner, C., Bacher, J., and Schmidt, E.**

Institute of Electrical Machines and Drive Technology, University of Technology Graz, Graz, Austria, Institute of Electrical Drives and Machines, Vienna University of Technology, Vienna, Austria

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 178-183

WA5.2 (383) 16:00-16:20

Power system transient modelling and classification

Chen, J., Kinsner, W., and Huang, B.

Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory, University of Manitoba, Winnipeg, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 184-189

WA5.3 (112) 16:20-16:40

Application des methodes d'analyse spectrale parametriques a la detection des defauts d'engrenage dans les machines tournantes

Haloui, N., Chikouche, D., and Benidir, M.*

Laboratoire des Signaux et Systèmes, Ecole Supérieure d'Electricité, Université Paris-Sud, Cedex, France, *Département d'Electronique Université F.A, SÉTIF, Algérie

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 190-194

WA5.4 (244) 16:40-17:00

Reluctance synchronous motor asynchronous operation

*Ferraz, C. and de Souza, C.**

School of Electrical Engineering, Salesian Center of Americana, Brazil, *Faculty of Electrical and Computer Engineering, Unicamp - University of Campinas, Brazil

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 195-200

Oral Session WA6: Circuits & Systems

TIME: 15:40 – 17:00
ROOM: SALON AB

CHAIRS: A. Dinh
K. Raahemifar

WEDNESDAY, MAY 15

WA6.1 (174) 15:40-16:00

High-speed forward error correction IP blocks for system-on-chip

Dinh, A. and Bolton, R.

Department of Electrical Engineering, University of Saskatchewan, Saskatoon, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 515-520

WA6.2 (268) 16:00-16:20

Highly linear, tunable, pseudo differential transconductor circuit for the design of GM-C filters

Ghabiya, A. and Syrzycki, M.

School of Engineering Science, Simon Fraser University, Burnaby, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 521-526

WA6.3 (123) 16:20-16:40

A simplified decision-directed threshold scheme for EPR4 channel detection

Omole, I., Maundy, B., and Sesay, A.

Electrical and Computer Engineering Department, University of Calgary, Calgary, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 527-532

WA6.4 (421) 16:40-17:00

Unified simulation: A new approach to computer aided circuit analysis

Gaston, J. and Raahemifar, K.

Electrical and Computer Engineering Department, Ryerson University, Toronto, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 1, pp. 533-537

Oral Session WA7: Biomedical Signals 2: Classification & Estimation

TIME: 15:40 – 17:00
ROOM: TACHE

CHAIRS: Z. Moussavi
N. Pizzi

WEDNESDAY, MAY 15

WA7.1 (154) 15:40-16:00

Scopira: A system for the analysis of biomedical data

Demko, A., Pizzi, N., and Somorjai, R.

Institute for Biomediagnostics, National Research Council of Canada, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1093-1098

WA7.2 (388) 16:00-16:20

Separation performance of ICA on simulated EEG and ECG signals contaminated by noise

Potter, M., Gadhok, N., and Kinsner, W.

Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory,
University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1099-1104

WA7.3 (380) 16:20-16:40

ECG frame classification using dynamic time warping

Huang, B. and Kinsner, W.

Department of Electrical and Computer Engineering, Signal and Data Compression Laboratory,
University of Manitoba, Winnipeg, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1105-1110

WA7.4 (272) 16:40-17:00

Directing crossover for reduction of bloat in GP

Terrio, M. and Heywood, M.

Faculty of Computer Science, Dalhousie University, Halifax, Canada
IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 2, pp. 1111-1115

Oral Session WA8: Industrial ApplicationsTIME: 15:40 – 17:00
ROOM: GATEWAYCHAIRS: C. Chan
N. Sepehri

WEDNESDAY, MAY 15

WA8.1 (227) 15:40-16:00

Fuzzy predictive control for in-situ bioremediation processes*Hu, Z., Chan, C.*, and Huang, G.*Faculty of Engineering, *Department of Computer Science / Energy Informatics Laboratory,
University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1616-1621

WA8.2 (162) 16:00-16:20

Support vector machines based approach for fault diagnosis of valves in reciprocating pumps*Gao, J., Shi, W., Tan, J., and Zhong, Fengjin*

Harbin Institute of Technology, Harbin, China

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1622-1627

WA8.3 (456) 16:20-16:40

Fault detection in electro-hydraulic servo-positioning systems using sequential test of wald*Khan, H., Abou, S., and Sepehri, N.*Department of Mechanical and Industrial Engineering, University of Manitoba, Winnipeg,
Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1628-1633

WA8.4 (229) 16:40-17:00

A computer-aided model for design of a simulation system for the natural gas pipeline network system*Nimmanonda, P., Uraikul, V., Chan, C.*, and Tontiwachwuthikul, P.*Faculty of Engineering, *Department of Computer Science / Energy Informatics Laboratory,
University of Regina, Regina, Canada

IEEE CCECE02 Proceedings; ISBN: 0-7803-7514-9; vol. 3, pp. 1634-1639

**THANK YOU
FOR ATTENDING THE****CCECE02****See you in
Montreal at the****CCECE03**