IEEE VANCOUVER CONTACT

- **Real-time pricing and stabilization in power grids**
- **Scalable parallel programming**
- **Chasing channels - limited feedback MIMO**
- **Assessing human exposure to electromagnetic fields**
- **IEEE Vehicular Technology Conference**
- **IEEE automotive workshop on EMC**
- **WIVEC 2014 6th Intl Symposium Wireless Vehicular Comm**
- **PAL Robotics: history, research activities, opportunities**

Real-time pricing and stabilization in power grids

Toru Namerikawa
Keio University

Monday 11 August

10 - 11 am

Room 2020/2030
Kaiser Bldg
UBC

Sponsored by the joint chapters of IEEE Control Systems, Robotics and Automation, and Systems, Man and Cybernetics socities

Information
CS/RA/SMC
Joint chapter vice chair
Neda Eskandari
neda.eskandari@gmail.com

The contribution of electrical power systems to global climate change has become one of the more urgent problems facing the world; accordingly, a high amount of distributed generation capacity, including photo-voltaic, wind power, biomass, and co-generated power, is being planned for installation into large-scale power network systems in order to reduce greenhouse gas emissions and fossil fuel reliance. However, it is well understood that many renewable resources pose risks to power system stability in terms of adverse effects on frequency and the creation of voltage fluctuations; hence, in embedding renewables into a grid, it is necessary to create an explicit plan for plant cooperation and generation optimization in order to ensure safety.

This talk deals with a game theoretic optimal real-time pricing method based on dual decomposition and its application to load frequency control of electrical power networks. The goal of this optimal real-time pricing methodology is to solve the constrained optimization problem consist of each players' utility and social welfare under selfish players. We can show that selfish players' decision can be expressed via a kind of a Nash equilibrium solution considering their own cost functions and it can lead selfish players' decision to social welfare maximization via real-time pricing method. Finally the proposed method is applied to a load frequency control problem of power networks and the effectiveness can be shown via some numerical simulations.

Speaker: Toru Namerikawa received the B.E., M.E and Ph. D of Engineering degrees in Electrical and Computer Engineering from Kanazawa University, Japan, in 1991, 1993 and 1997, respectively. He is currently a Professor at Department of System Design Engineering, Keio University, Yokohama, Japan. He held visiting positions at Swiss Federal Institute of Technology in Zurich in 1998, University of California, Santa Barbara in 2001, University of Stuttgart in 2008 and Lund University in 2010. His main research interests are robust control, distributed and cooperative control and their application to power network systems

IEEE Okanagan Subsection
Presents

Prof. Gaétan Hains
Laboratory for Complexity, Complexity and Logic.
University of Paris-Est Creteil, France.

Scalable parallel programming: hardware, algorithms and applications

Time & Date: (tentative) 5pm-6pm, Monday, August 25th, 2014
Location: EME 1202, UBCO, Kelowna Campus, Kelowna

Talk Abstract: We will present and explain the Bulk-Synchronous Parallel (BSP) model of parallel computation. BSP was invented in 2009 by Leslie Valiant and has been applied to almost every possible parallel algorithm, parallel hardware and parallel software application. BSP allows a clean and portable understanding of how parallel hardware can «couple» efficiently or not with big data and large-scale simulations.
We outline categories of applications where infinite scalability is either, easy, conditional and complex or mostly impossible. Measured machine parameters allow performance prediction for computations of unlimited size in many application areas.

Speaker Biography: HAINS Gaétan Joseph Daniel Robert, Computer Scientist. Education: BSc, honours, 1985; MSc, 1987, D.Phil., 1990. Appointments: Researcher, CRIM Montreal, 1989; Assistant Professor, Associate Professor, University of Montreal, 1989-95; Visiting Professor ENS Lyon, 1994; Visiting Researcher, Fujitsu-ISIS, Japan, 1994-95; Professor, 1995-, Director, 2000-05, 1st class professor 2004-, Laboratoire d'informatique fondamentale d'Orleans, University of Orleans; Programme Officer, Software research programs at Agence Nationale de la Recherche (ANR) 2005-06; Professor 2006-, Director 2007-, Laboratoire d'Algorithmique, Complexité et Logique, Université Paris 12. Honours: Commonwealth Scholar, 1986-89; IISF Visiting Scholarship, 1992. Address: LACL, Université Paris 12, 94000 Créteil, France. Website: http://hains.org.
Outstanding Scientists of the 21st Century, S. Rains ed., First edition, International Biographical Centre, Ely, Cambridgeshire UK, 2007.

Refreshments will be provided. For further information please contact:
Youry Khmelevsky (email: youry@ieee.org)

IEEE Vancouver new Senior Members named at the recent meeting of the A&A committee:

Nimesh Shah
Herbert Tsang

Chasing channels - adaptive codebooks for limited feedback MIMO

Pawel A. Dmochowski
Victoria University of
Wellington, New Zealand

Monday 11 August

1030 - 1130

EME 1121
UBC Okanagan campus

Information
IEEE Okanagan Chair
Youry Khmelevsky
youry@ieee.org

AND

*This event is also
sponsored by the
IEEE Vancouver Joint
Communications
chapter*

Thursday 07 August

11 am

Rm 418 Macleod Bldg
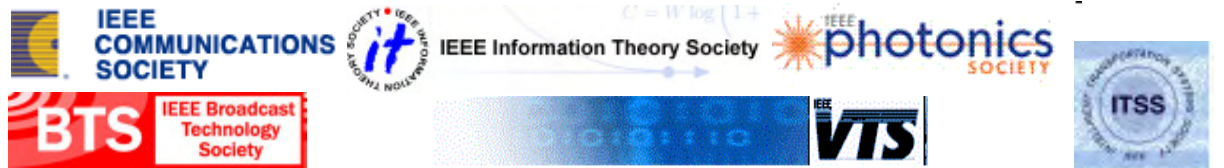2356 Main MallUBC

Information
Joint Communications
Chair Vincent Wong
vincentw@ece.ubc.ca

Multiple-input multiple-output (MIMO) systems have received considerable attention over the last two decades owing to the improvements in link throughput and/or the reliability of signal reception. In order to achieve the full capacity gains, channel state information is required at the transmitter, thus necessitating feedback of this information from the receiver to the base station. Given the multi-carrier nature of 4G systems, this feedback overhead is restricted to a few bits per subcarrier. Consequently, the performance of limited feedback closed-loop MIMO systems is very sensitive to the codebooks used to achieve such channel quantization. Codebooks in current standards, such as LTE, were optimized for iid Rayleigh fading channels, whereas realistic propagation environments exhibit both temporal and spatial channel correlations.

In this talk we will demonstrate the inefficiency and performance loss of standard codebooks in realistic channel models (such as WINNER II), thus motivating adaptive codebook techniques. We will present methods for perturbing the standard codebooks, specifically focusing them around the channel and following the channel trajectory throughout transmission - thus significantly reducing the quantization errors. Blind adaptation methods, ie. without introducing additional feedback requirements, will be presented.

Speaker: Pawel A. Dmochowski (S'02, M'07, SM'11) was born in Gdansk, Poland. He received a BASc (Engineering Physics) from the University of British Columbia in 1998, and MSc and PhD degrees from Queen's University at Kingston in 2001 and 2006, respectively. He is currently a Senior Lecturer in the School of Engineering and Computer Science at Victoria University of Wellington, New Zealand. Prior to joining Victoria University of Wellington, he was a Natural Sciences and Engineering Research Council (NSERC) Visiting Fellow at the Communications Research Centre Canada as well as a Sessional Instructor at Carleton University in Ottawa. He is a Senior Member of the IEEE and is actively involved in the IEEE New Zealand Central Section Committee. His research interests include Cognitive Radio, limited feedback and Massive MIMO systems. Homepage: http://homepages.ecs.vuw.ac.nz/~dmochopa/

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OKANAGAN CAMPUS

IEEE COMMUNICATIONS SOCIETY

it IEEE Information Theory Society

photonics SOCIETY

BTS IEEE Broadcast Technology Society

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VTS

ITSS

Jt. Chapter BT-02/COM-19/IT-12/ITS-38/PHO-36/VT-06

Assessing human exposure to electromagnetic fields from wireless power transmission systems

Mark Douglas
Information Technology
in Society

Monday 28 July
3 pm

Rm 202, Macleod Building
2356 Main Mall, UBC

Electromagnetic wireless power systems (WPS) have undergone significant technological innovations in the recent years. Inductive coupling has become a popular alternative to wired power, particularly for implantable medical devices and household appliances. The application of WPS to electric vehicles is the focus of recent research work. Traditional direct inductive coupling systems operate over distances within a few millimeters. A second type of WPS transfers power over several centimeters to meters using adaptive and tightly coupled resonant coils to achieve high efficiency. The strong reactive near-field of WPS induces electric fields in the body tissue of persons in their close vicinity. This may pose potential direct health hazards or indirect risks via interference with medical implants.

In this presentation, the safety guidelines and the fundamental coupling mechanisms of the human body with the electromagnetic near-fields of WPS are reviewed as well as the methodology and the instrumentation for the demonstration of the safety of such systems operating between 100 kHz and 50 MHz. Based on this review, the advantages and shortcomings of state-of-the-art numerical and experimental techniques are discussed and applied to a generic WPS operating at 8 MHz. Finally, current research needs are identified which include 1) the extension of safety guidelines for coverage of persons with implants, 2) more computationally-efficient full-wave solvers, 3) higher quality human models which cover different population groups and include improved models of nerve tissue, 4) experimental dosimetric methods for the WPS frequency range, and 5) product standards to demonstrate safety of specific WPS.

Speaker: Mark Douglas received the B.Eng degree from the University of Victoria, Victoria, British Columbia, Canada in 1990, the M.Sc. degree from the University of Calgary, Calgary, Alberta, Canada in 1993, and the Ph.D. degree from the University of Victoria in 1998, all in electrical engineering. His research work in electromagnetic dosimetry has resulted in 5 patents and over 80 papers for scientific conferences and peer-reviewed journals. He serves as the co-chair of IEEE International Committee for Electromagnetic Safety (ICES) Technical Committee 34 and the co-chair of ICES Technical Committee 95 Subcommittee 1.

Since 2009, Dr. Douglas has been a Project Leader at the Foundation for Research on Information Technology in Society in Zurich, Switzerland. His work includes the development of instrumentation and procedures to assess exposure from electromagnetic sources. These sources include mobile phones, wireless power transmitters, induction cooking stoves, electric motors and industrial induction heaters. From 2002 to 2009, Dr. Douglas was an engineering manager in the Corporate Electromagnetic Energy Research Laboratory at Motorola in Ft. Lauderdale, Florida, where he led advancements in radiofrequency dosimetry research and testing. Before joining Motorola, he was a Senior Technical Leader with the Antenna Development Group at Ericsson in Raleigh, North Carolina, and a member of the Ericsson EMF Research Group in Stockholm, Sweden.

Jt. Chapter BT-02/COM-19/IT-12/ITS-38/PHO-36/VT-06

Information
Joint Communications
Chair Vincent Wong
vincentw@ece.ubc.ca
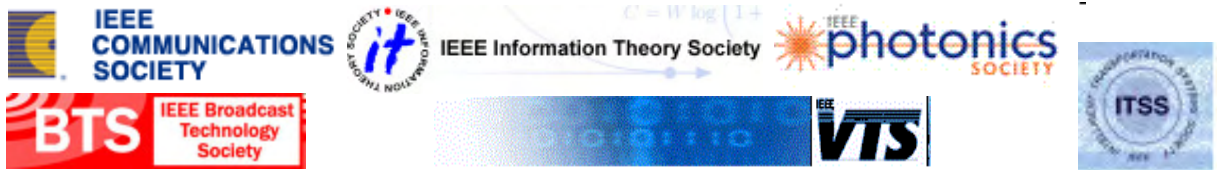
Engineers, engineering managers and strategic development and planning managers: Attend all IEEE VTC 2014 Fall and WiVeC plenaries, panels, workshops and technical sessions over 14-17 Sep 2014 for a Special Delegate registration rate of $100 USD! For details, please click http://www.cvent.com/d/44qxz0/4W

VTC2014-Fall
VANCOUVER
Connecting the Mobile World

IEEE-Vehicular Technology Conference – Vancouver, Canada
Sept. 14-17, 2014 at the Westin Bayshore Hotel

Event Highlights
Industry Tracks

Major Industry & Technology Segments:

- *5G Technology Evolution*
- *Propagation & Channel Modeling*
- *Wireless Network Design*
- *Wireless Freight Security and Efficiency*
- *mmWave Access Networks*
- *Autonomous Vehicles*
- *Connected Vehicles*
- *Electric Vehicles and Vehicular Electronics*
- *Developments in EV Recharging Infrastructure*
- *Automotive EMC Workshop*

Sessions:

There are hundreds of advanced wireless-technology presentations based on very recent research and development results by presenters representing organizations around the world.

An elite panel of speakers with expertise ranging from public policy, research and strategic development of products and services provide insight into this nexus of transportation's future. These leaders ask and answer the tough questions and invite you to open your mind and join the discussion and Q&A

Ibrahim Gedeon
VTC Conf. Co-Chair
CTO - TELUS

Dave Atnikov
CEO
Novax Industries

Barrie Kirk
Executive Director
CAVCOE

Todd Hubing
Director- CVEL
Clemson Univ.

Dave Michelson
VTC Conf. Co-Chair
University of BC

Wen Tong
Wireless CTO
Huawei Technologies

Barry Einsig
Global Transp. Exec.
Cisco Systems

Andrew Poliak
Global Director
QNX

IEEE VTC 2014 Fall features an Industry Program consisting of invited presentations by industry and university experts that will run in parallel to the regular Technical Program of peer reviewed papers. See highlights of the Industry Program at right!

For Exhibition/Sponsorship Opportunities Contact: VTC@ICTSGroup.com

TELUS
HUAWEI
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IEEE VTS

Day 1: Sunday Sept. 14, 2014 8am to 6pm
Wireless Vehicular Electronic Communication Conference (WiVeC)

- Multiple In-Depth Tutorials.
- Wireless Vehicular Communications Workshop
- Presentations on current research results and demonstrations

Day 2: Monday Sept. 15, 2014 8am to 6pm - Welcome to 5G

Keynote Addresses - 5G Wireless Technologies
- Ibrahim Gedeon – CTO, TELUS
- Dr. Wen Tong – Wireless CTO, Huawei

Industry Session: Future Challenges – Mobile Radio Network Design and Optimization
- Dr. Yann Le Helloco – SVP & CTO, InfoVista, Canada,
- Dr. Pascal Chambreuil – Head Software Team, Orange Labs, France,
- Faris Alfarhan – Wireless Systems Eng., InfoVista, Canada

Industry Session: Millimetre Wave Access Technologies for 5G
- Prof. David G Michelson – University of BC, Canada
- David Wessel – RF Designer, Huawei Technologies, Canada
- Rapeepat Ratasuk – Wireless Research Engineer, Nokia Solutions and Networks, USA

Industry Session: The Challenge of Defining 5G
- Dean Brenner – Senior Vice President, Government Affairs, Qualcomm, USA
- Prof. Tony Bailetti – Carleton University, Canada
- Dr. Anthony Soong – Huawei Standards, USA
- Juan Ranuarez – TELUS, Canada

Day 3: Tuesday Sept. 16, 2014 8am to 6pm –
Automated and Connected Vehicle Day

Keynote Addresses – Automated and Connected Vehicles
- Barrie Kirk - Exec. Dir. Canadian Automated Vehicles Center of Excellence (CAVCOE)
- Barry Einsig - Global Transportation Executive, Cisco Systems, USA

Session: Autonomous Vehicles (AV):
- Paul Godsmark- CTO CAVCOE
- Corey Clothier- President & COO, Induct Technologies
- Mohammad Ali- Sr. Researcher, Volvo, Sweden.
- Andrew Poliak- Global Director, QNX

Session: Connected Vehicles (CV):
- Dave Atnikov – CEO, Novax Industries, Canada
- Geoff Cross – Senior Manager, Policy and Analytics, Translink, Canada
- Prof. Garland Chow – UBC Sauder School of Business

Panel: Exploring the AV/CV - issues raised by previous speakers
- Moderator: John Niles – President, Global Telematics, USA
- Steve Marshall – Exec. Dir., Center. for Adv. Transportation and Energy Solutions
- Charlie Howard – Director, Integrated Planning, Puget Sound Regional Council, USA
- Plus Previous Session Speakers – Corey Clothier, Mohammad Ali, Geoff Cross

Day 4: Wednesday Sept. 17, 2014 8am to 6pm
Electric Vehicle and Vehicular Electronics

Keynote Addresses – Electric Vehicles and Vehicular Electronics
- Teaque Lenahan – Executive Director, Innovation Strategy, frog, USA
- Lee Stogner – President, Vincula Group & Chair, IEEE TEI

Industry Session: Electric Vehicle Charging Infrastructure
- Teaque Lenahan – Executive Director, Innovation Strategy, frog, USA
- Alec Tsang – Senior Technology Strategist BC Hydro, Canada
- Ian Neville – Project Manager, City of Vancouver, Canada
- Moutie Wali – Director, Technology Strategy and Operations, TELUS, Canada

Industry Workshop: Automotive EMC
- Todd Hubing – Director - Clemson University Vehicular Electronic Systems Lab., USA
- Joungho Kim – Prof. KAIST and Dir., Smart Automotive Electronics Research Ctr., S Korea
- Garth D'Abreu – Director of RF Engineering, ETS-Lindgren, USA

IEEE WORKSHOP ON AUTOMOTIVE EMC
Wed, 17 Sep 2014   1:00 – 5:00 pm

in conjunction with

Electric Vehicles & Vehicular Electronics Day at
IEEE Vehicular Technology Conference - Vancouver, Canada
Sept. 14-17, 2014 at the Westin Bayshore Hotel

Chairs:
- Todd Hubing, *Clemson University, USA*
- David Michelson, *University of British Columbia, Canada*
- Janet O'Neil, *ETS-Lindgren, USA*

Feature Topics:
- Design for Automotive EMC
- Test for Automotive EMC

Invited Speakers:
- Garth D'Abreu, *ETS-Lindgren, USA*
- Joungho Kim*, KAIST, South Korea*
- Todd Hubing, *Clemson University, USA*

Engineers, engineering managers and strategic development and planning managers: Join professionals from a global pool of industry, government and academia to exchange "state of the art" results from new R&D in the fields of vehicular wireless and electronic technology.   Attend all IEEE VTC 2014 Fall plenaries, panels, workshops and technical sessions over 14-17 Sep 2014 for a Special Delegate registration rate of $100 USD! For details, please click http://www.cvent.com/d/44qxz0/4W

New!

In addition to the regular technical program, we will host special industry sessions that will feature invited presentations by noted experts. The sessions will align along three major theme days: Mobile Radio, Autonomous and Connected Vehicles and Electric Vehicles and Vehicular Electronics.

New!

IEEE VTC 2014 Fall will feature a mobile app called **CrowdCompass** that will help you navigate the conference and find the papers, sessions and activities of greatest interest to you.

Mon, 15 Sep 2014 – Mobile Radio Day
Program Chairs: Peiying Zhu, *Huawei*
                            Ibrahim J. Gedeon, *TELUS*

AM: Keynote Session * Wireless System Planning Tools
PM: Millimetre Wave Access * 5G Wireless Technology

Tue, 16 Sep 2014 – Autonomous and Connected Vehicles Day
Program Chairs: Barrie Kirk, *CAVCOE*, and
                            David Atnikov, *Novax Industries*

AM: Keynote Session * Autonomous Vehicles
PM: Connected Vehicles * Panel Session on AV/CVs

Wed, 17 Sep 2014 – Electric Vehicles and Vehicular Electronics Day
Program Chairs: Lee Stogner, *IEEE TEI*, and
                            David G. Michelson, *UBC*

AM: Keynote Session * Electric Vehicle Charging Initiatives in BC
PM: Workshop on Automotive EMC: Design for EMC * Test for EMC

6th International Symposium on
Wireless Vehicular Communications: WIVEC2014
14–15 September 2014, Vancouver, Canada
in conjunction with
IEEE Vehicular Technology Conference- Vancouver, Canada, Sept. 14-17, 2014 at the Westin Bayshore Hotel
http://www.ieeevtc.org/wivec2014/

General Chairs:
- Azzedine Boukerche,
  -- University of Ottawa, Canada
- Soumaya Cherkaoui,
  -- Université de Sherbrooke, Canada
- Victor C.M. Leung,
  -- University of British Columbia, Canada

Wireless vehicular communications has been identified as a key technology for increasing road safety and transport efficiency, and providing Internet access on the move to ensure wireless ubiquitous connectivity. The potential of this technology has been acknowledged with the establishment of ambitious research programs worldwide in Europe, US and Asia.

The IEEE Vehicular Technology Society (VTS) currently covers through its areas of interest (mobile radio, transportation systems and automotive electronics) all technical aspects needed to make wireless vehicular communications a reality. As a result, IEEE VTS decided to co-locate a technical symposium on wireless vehicular communications with some of the flagship IEEE Vehicular Technology Conferences (VTC).

The IEEE International Symposium on Wireless Vehicular Communications (WiVeC) covers all aspects of vehicular wireless communications such as Vehicle-to-Vehicle (V2V), Vehicle-to-Infrastructure (V2I) and Vehicle-to-Person (V2P) communications, including implications on transport efficiency and safety, implications on automotive electronics, liability issues, standardizations efforts and spectrum assignment.

After the successful 2007 (Baltimore), 2008 (Calgary), 2010 (Taipei), 2011 (San Francisco) and 2013 (Dresden) editions, the sixth IEEE WiVEC symposium will be co-located with the 80th IEEE VTC 2014 Fall conference. Combined registration packages are available for WiVeC and VTC.

In addition to the regular technical paper presentations, WIVEC2014 will feature a **Keynote Presentation**, a **Panel Session**, and a **Demonstrations** session for researchers and practitioners to showcase their latest industrial applications, prototypes with media, models or live demonstrations.

Sponsors:

PAL Robotics: history, research activities and collaboration opportunities

Francesco Ferro
PAL Robotics

Distinguished Lecturer

Tuesday 26 August

11am-noon
Kaiser 2020/2030
UBC

Sponsored by the joint chapters of IEEE Control Systems, Robotics and Automation, and Systems, Man and Cybernetics socities

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Neda Eskandari
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PAL Robotics is a robotics R & D company with a multi-national team from across the world, working specially in the humanoid robotics field. PAL Robotics has developed several humanoid robots: the biped REEM-A, REEM-B and the last creation REEM-C, and other with a mobile base, REEM-H1 and REEM. Its diverse team consists of people from various countries, mostly mechanic, electronic and software engineers with many years of experience in the robotics industry. The presentation consists of three main topics that will be explained in the following lines. Firstly, the history of the company and the several robots already developed will be introduced. The goals of the company, the strong relationship with the investors and the different humanoid robotics platforms and their characteristics will be also presented. Secondly, a selection of research lines will be showed. Navigation, walking, grasping, human robot interaction as well as hardware features will

be presented. Finally, the different ways of collaboration with the company will be dealt: internships, co-advising master/PhD thesis, PhD programs, FP7 projects, etc. At the end some performance about REEMs events will be shown.

Speaker: Francesco Ferro obtained a BSc degree in Telecommunications Engineering in 2002 at the Politecnico di Torino. He began a PhD in Computer Vision but left it in 2004 to attend a robotics humanoid project, where he still works on. He started the development of stereo vision algorithms and later he joined the autonomous robot navigation team to implement various SLAM algorithms. In 2008 he became the manager of the software department of PAL. He obtained an MBA at the UB University in Barcelona in the 2011. From the beginning of the 2011 he is the CEO of PAL Robotics, in charge of REEM's humanoids robots development.