IEEE SmartGridComm'16 logo

IEEE

Technical Program

Time	Great Hall, University Of Sydney	Maritime 4 Theatre	Maritime Pre-Function	Restaurant	Sussex 1	Wharf	Wharf 1	Wharf 2	Wharf 3	Wharf 4	Session
Sunday, November 6											
09:00-09:40								W2-1: *Opening Remarks*	W3-1: *Keynote Speech*		
09:15-10:15							W1-1: *Keynote 1*	W2-2: *Keynote Speech*			
09:40-10:40									W3-2: *Communication*		
10:00-10:45								W2-3: *Fast and Reliable Power-Flow Service for Cooperative Building Microgrids*			
10:30-12:30											
11:00-12:30							W1-2: *Paper session*	W2-4: *Building as smart consumers*			
11:10-12:30									W3-3: *Demand Response and Supply Control*		
12:30-14:00											*Lunch on your own*
14:00-15:30							W1-3: *Keynote 2*	W2-5: *Building as smart partners*	W3-4: *Data Analysis and Consumer Application*		
15:00-16:45							W1-4: *Invited Talks*				
15:40-16:20								W2-6: *A Remote Condition Monitoring and Health Prognosis System for a Stand Alone Micro-Grid with Photovoltaics and Battery Bank*			
16:00-16:30									W3-5: *Open Discussion*		
16:20-16:00								W2-7: *Integrating Distributed Energy System in Smart Buildings and Districts*			
16:45-16:30							W1-5: *Panel Discussion*				
18:30-20:00						*Welcome Reception*					
Monday, November 7											
08:30-09:00		*Opening Plenary*									
09:00-10:00		*Keynote Talk 1*									
10:00-10:30			*Networking Break*								
10:30-12:00							S1-1: *Smart Meters*	S2-1: *Cyber-physical security and privacy*	S3-1: *Advanced Control and Optimization in Smart Grid*	S4-1: *Power Systems*	
12:00-14:00				*Networking Lunch*							
14:00-15:30							S1-2: *Cooperative and Cognitive radio Networks*	S2-2: *Data attacks*	S3-2: *Distributed Energy Storage in Smart Grid*	S4-2: *Neural Networks*	
15:30-16:00			*Networking Break*								
16:00-17:30							S1-3: *Power Line Communications*	S2-3: *Authentication and detection*	S3-3: *Microgrid Planning and Control*		
18:00-19:00					*IEEE Steering Committee on Smart Grid Communications*						
Tuesday, November 8											
09:00-10:00		*Keynote Talk 2*									
10:00-10:30			*Networking Break*								
10:30-12:00							S1-4: *Smart Grid*	S2-4: *Fault tolerance and resilience*	S3-4: *Grid Integration of Demand Side Technologies*	S4-3: *Energy Management 1*	
12:00-14:00				*Networking Lunch*	*IEEE ComSoc Technical Subcommittee on Smart Grid Communications*						
13:20-16:15											*Site Visit: Ausgrid Learning Centre*
18:30-21:30	*Banquet Dinner*										
Wednesday, November 9											

09:00-10:00		*Keynote Talk 3*									
10:00-10:30			*Networking Break*								
10:30-12:00							S1-5: *IoT and Heterogeneous networks*	S2-5: *SCADA*	S3-5: *Enabling Technologies for Microgrid*	S4-4: *Smart Grids*	
12:00-14:00				*Networking Lunch*							
14:00-15:30							S1-6: *Cyber-Physical Safety, protection and optimization*	SSMM1: *Emerging techniques for system security and market management in smart grids 1*	S3-6: *New Advances in System Monitoring and Surveillance*	S4-5: *Energy Management 2*	
15:30-16:00			*Networking Break*								
16:00-17:30								SSMM2: *Emerging techniques for system security and market management in smart grids 2*	S3-7: *Enhancing Reliability of Grid Operation*		

Sunday, November 6

Sunday, November 6, 09:00 - 09:15

W2-1: Opening Remarks TOP

Ming Jin and Ruoxi Jia

Room: Wharf 2

Sunday, November 6, 09:00 - 09:40

W3-1: Keynote Speech TOP

Integrated Communications and Control Technologies for Smart Infrastructure and Applications
Prof. Ryogo Kubo

Room: Wharf 3
Chair: Hiroaki Nishi (Keio University, Japan)

Smart infrastructure integrating currently independent systems has a great potential to improve our quality of life (QoL). Smart applications on the smart infrastructure will provide emerging services over the Internet. The smart infrastructure and applications include the concept of the Internet of Things (IoT), machine-to-machine (M2M) communications, networked control systems (NCS), and cyber-physical systems (CPS). In the development towards the smart infrastructure and applications, we must consider how to manage the quality of services (QoS) of networks, diversity, interoperability, energy efficiency, and cybersecurity as system-level requirements. The integration of communications and control technologies can play an important role in guaranteeing the various requirements. This talk introduces our ongoing research relating to integrated communications and control technologies, and discuss future Internet services provided by the smart infrastructure and applications from the viewpoints of both communications engineering and control engineering.

Sunday, November 6, 09:15 - 10:15

W1-1: Keynote 1 TOP

Datacenters as heat plants, opportunities and challenges
Dr. Jonas Gustafsson

Room: Wharf 1
Chair: Wolfgang Birk (Luleå University of Technology, Sweden)

With an ever increasing data generation, flow and storage, more and more energy is required to power the communication infrastructure and datacenters that serves us with the information that we, and the increasing amount of smart devices need. Utilizing the heat generated in data centers for heating district heating systems is seen as a major possibility to capture the otherwise often useless heat produced in the datacenters.

In this presentation I will present the some of the technical challenges with increasing data center waste heat temperature and approaches to overcome them. I will also present ideas and open up for discussion on how to reduce the temperature need for existing district heating systems, without re-designing the complete system. I will finalize my presentation with some words on our new large-scale research- and test-datacenter, SICS ICE.

Sunday, November 6, 09:15 - 10:00

W2-2: Keynote Speech TOP

Costas Spanos

Room: Wharf 2

Sunday, November 6, 09:40 - 10:40

W3-2: Communication TOP

Room: Wharf 3
Chair: Ryogo Kubo (Keio University, Japan)

W3-2.1 ***Analysis and Implementation of WSN with Route Selection Considering Energy Consumption***
Tadanori Matsui and Hiroaki Nishi (Keio University, Japan)

W3-2.2 ***A Study on Efficiency Improvement by Using Multi-Terminal Power Flow Controller for DC Power Network***
Yoshinori Takahashi, Toru Tanaka, Kenji Natori and Yukihiko Sato (Chiba University, Japan)

W3-2.3 ***Influence of Noise-based Perturbation on Recommendation Application***
Yuichi Nakamura, Takahiro Hosoe and Hiroaki Nishi (Keio University, Japan)

Sunday, November 6, 10:00 - 10:45

W2-3: Fast and Reliable Power-Flow Service for Cooperative Building Microgrids TOP

Sanjib Kumar Panda

Room: Wharf 2

Sunday, November 6, 10:30 - 12:30

W1-2: Paper session

Room: Wharf 1
Chair: Wolfgang Birk (Luleå University of Technology, Sweden)

An Hybrid-Energy Generation Management System
Nicolas Perez-Mora (University of Balearic Islands & Sampol Ingeniería y Obras, Spain); Paolo Lazzeroni (Istituto Superiore sui Sistemi Territoriali per L'innovazione, Italy); Mourizio Repetto (Politecnico di Torino, Italy)

Set-point Optimization Frameworks for Leveraging Passive Thermal Storage in Buildings
Kumar Saurav (IBM Research, India); Arun Vishwanath (IBM Research, Australia); Vikas Chandan (IBM Research India, India)

Fairness based Demand Response in DHC Networks using Real Time Parameter Identification
Saptarshi Bhattacharya (Rensselaer Polytechnic Institute, USA); Vikas Chandan (IBM Research India, India); Vijay Arya (IBM Research, India); Koushik Kar (Rensselaer Polytechnic Institute, USA)

Towards Autonomous Synthesis of Building Substation Control Loops
Wolfgang Birk and Khalid Atta (Luleå University of Technology, Sweden)

Sunday, November 6, 11:00 - 12:30

W2-4: Building as smart consumers

Therese Peffer, and accepted paper authors

Room: Wharf 2
Chair: Therese Peffer (California Institute for Energy and Environment, USA)

Human Thermal Comfort Estimation in Indoor Space by Crowd Sensing
Masao Chiguchi, Hirozumi Yamaguchi, Teruo Higashino and Yoshiyuki Shimoda (Osaka University, Japan)

Sunday, November 6, 11:10 - 12:30

W3-3: Demand Response and Supply Control

Room: Wharf 3
Chair: Hiroaki Nishi (Keio University, Japan)

Incentive-based Demand Response Approach for Aggregated Demand Side Participation
Mengmeng Yu, Seung Ho Hong and Jong Beom Kim (Hanyang University, Korea)

Optimal Energy Management via MPC considering Photovoltaic Power Uncertainty
Toru Namerikawa and Shunsuke Igari (Keio University, Japan)

Design of Multi-Dimensional Search Queries for Efficient Discovery of Suppliers in the Smart Grid
Akira Yamashita, Ryo Kutsuzawa and Naoya Takemura (Keio University, Japan); Jun Matsumoto (Nanyang Technological University & KEIO University, Singapore); Naoaki Yamanaka (Keio University, Japan)

Demand Response Minimizing the Impact on the Consumers' Utility Towards Renewable Energy
Ryo Kutsuzawa, Akira Yamashita and Naoya Takemura (Keio University, Japan); Jun Matsumoto (Nanyang Technological University & KEIO University, Singapore); Naoaki Yamanaka (Keio University, Japan)

Sunday, November 6, 12:30 - 14:00

Lunch on your own

Sunday, November 6, 14:00 - 15:00

W1-3: Keynote 2

Geothermal Energy: Overview and Challenges of Introducing an Emerging Technology
Dr. Guillermo Narsilio

Room: Wharf 1
Chair: Arne Gylling (LTU, Sweden)

Ground-source heat pump (GSHP) systems efficiently heat and cool buildings using sustainable geothermal energy accessed via ground heat exchangers (GHEs). In closed loop systems, GHEs comprise pipes embedded in specifically drilled boreholes or trenches or even built into foundations, all within a few tens of metres from the surface. Given that GSHP systems operate at a coefficient of performance of about 4, the substitution of commonly used electrical heating and cooling systems with geothermal systems could significantly reduce energy consumption and greenhouse gas emissions, even more so when planned for district heating and/or cooling. This keynote presents an overview of the principles of the technology and the various factors that affect GHE performance and consequently the capital and operating costs of these systems.

Sunday, November 6, 14:00 - 15:30

W2-5: Building as smart partners

Johanna Mathieu and accepted paper authors

Room: Wharf 2

Automated Generation Method of Recommendation for Effective Energy Utilization as a HEMS Service
Takahiro Hosoe, Tadanori Matsui and Hiroaki Nishi (Keio University, Japan)

Dynamic data center load response to electricity grid pricing variability
Nathaniel Horner (Carnegie Mellon University, USA); Ines Azevedo (CMU, USA); Doug Sicker and Yuvraj Agarwal (Carnegie Mellon University, USA)

Sunday, November 6, 14:00 - 15:20

W3-4: Data Analysis and Consumer Application

Room: Wharf 3

Chair: Toru Namerikawa (Keio University, Japan)

HVAC Control System as a Home Energy Management System Function to Prevent Heat Shock in Households
Kanae Matsui (Tokyo Denki University, Japan)

Feature extraction and classification using power demand information
Tomoya Imanishi (Keio University & Graduate School of Science and Technology, Japan); Rajitha Tennekoon and Hiroaki Nishi (Keio University, Japan)

Hardware Accelerator for Data Anonymization using Dynamic Partial Reconfiguration
Sota Sawaguchi and Hiroaki Nishi (Keio University, Japan)

Threshold Calculation Scheme with Filter Bank in Signal Detection
Hiroyuki Odani and Yukitoshi Sanada (Keio University, Japan)

Sunday, November 6, 15:00 - 16:45

W1-4: Invited Talks

TOP

A total of 3 invited talks
Room: Wharf 1
Chairs: Nicolas Perez-Mora (University of Balearic Islands & Sampol Ingeniería y Obras, Spain), Arun Vishwanath (IBM Research, Australia)

Invited talk 1 Speaker: Wolfgang Birk*, Yvonne Ritter, Nicklas Linder, Ulrich Odefey, Peter Lingman, Vikas Chandan Title: OPTI-Sim: Co-simulation based virtualization of large scale DHC-networks Abstract: The basis for the simulative design and verification of new control concepts and optimisation methodologies for DHC systems is a virtual representation of the real system. The main requirements for the virtual DHC system are (i) adaptable level of detail, (ii) integration of different models into one system representation for simulation and (iii) realistic reproduction of system dynamics with sufficiently high simulation performance. This talk will present a co-simulation based approach, named OPTi-Sim, which is developed for DHC networks. It is discussed how different modelling concepts are applied depending on the use case under investigation. This tailoring of models based on use cases is of special interest in DHC systems, which usually consist of several thousands of consumers, requiring simplification in order to maintain sufficient simulation performance. Moreover, by structuring the models into different layers, an efficient "plug and play" architecture is obtained. Together with automatic model generation and simplification, this approach ensures usability, scalability and reusability for other DHC networks.

OPTi-Sim integrates different models for production, distribution and consumption in a co-simulation approach which is the standard approach for multi-domain simulation of large scale complex systems. The co-simulation framework is an FMI-compliant backbone for the synchronization and communication between different simulation models running in heterogeneous simulation tools (e.g. Modelica/Dymola or Matlab/Simulink). Models are either connected as functional mock-up units (FMUs) or with one of several other methods available for connecting simulation tools. By providing the option for parallel and distributed computing, the co-simulation approach ensures an adequate simulation performance.

OPTi-Sim has been developed within the Horizon 2020 OPTi project, funded by the European Commission under grant number 649796, which targets the optimization of district heating and cooling systems. OPTi-Sim is currently being validated using pilot tests at Luleå Energi AB, Sweden.

Invited talk 2 Speaker: Andrew Hannay, Townsville City Council, Australia Title: Action into INSIGHT: A learning journey to integrate smart technology and people into the sustainability and resilience of a city. Abstract:Townsville City Council's Integrated Sustainability Services' model not only turns data into insight, Council staff are learning by doing whilst transforming action into wisdom. This involves collaboration as a means of tackling multifaceted problems in energy and demand-side management. Engaging with stakeholders, especially the business community, in ways that make a difference (based on neuroscience and behavioural psychology) means our city-partners have installed much thermal storage infrastructure in buildings and facilities.

Local governments typically manage a diverse array of dispersed energy consuming assets. They can also be one of the major drivers of community and cultural change. Local government also carry a great risk by failing to learn to mitigate and adapt to the impacts of climate change. Staff from the Townsville City Council's Integrated Sustainability Services, have been on a journey of uncovering how to integrate smart technology and business collaboration into the sustainability and resilience of the council and the broader city. In 2011 Townsville was the first recipient of the first IBM Smarter City grant in Australia. Since then we have partnered with IBM in a number of ways, including developing an enterprise-wide energy and resource framework and conducting a smart building data analytics trial with that has just recently entered its second phase. Council has subsequently developed our own business case for linking two of our administration buildings in the CBD. The process includes upgrading HVAC systems in one building to achieve primary secondary chilled water configuration. The vision is to catalyse district cooling and smart infrastructure throughout the entire C.B.D.

Invited talk 3 Speaker: Alan Davis, WSP | Parsons Brinckerhoff, Australia Title: Current trends and future challenges of decentralised utility solutions in Australia Abstract: Technology advances and emerging utility models are driving a step change in the way energy and water services are being provided to the Australian consumer-base. There's a whole new way of doing things: embedded / private wire networks, smart grids, thermal energy and recycled water reticulation networks, etc. And in some instances (e.g. new towns, and edge-of-grid, greenfield development), we're seeing off-grid solutions and catalyst infrastructure applications because, simply, development can't wait for the conventional grid infrastructure to roll into town. This disruptive utility approach is fast driving real and considered alternatives to conventional grid infrastructure. We'll take you through a few examples of where we've applied a decentralised utility approach, the challenges faced and how to get this type of model to stack up.

Sunday, November 6, 15:40 - 16:20

W2-6: A Remote Condition Monitoring and Health Prognosis System for a Stand Alone Micro-Grid with Photovoltaics and Battery Bank

TOP

King Jet/Wei Feng (NTU)

Room: Wharf 2

Sunday, November 6, 16:00 - 16:30

W3-5: Open Discussion

TOP

Possible collaborations and future directions
Room: Wharf 3
Chairs: Yonghui Li (University of Sydney, Australia), Hiroaki Nishi (Keio University, Japan)

This session is open for the discussion on the possible collaborations and future directions regarding to smart city infrastructure and its applications.

Sunday, November 6, 16:20 - 16:00

W2-7: Integrating Distributed Energy System in Smart Buildings and Districts

TOP

Wei Feng

Room: Wharf 2

Sunday, November 6, 16:45 - 16:30

W1-5: Panel Discussion

TOP

Challenges and opportunities of the integrated DHC
Dr. Guillermo Narsilio, Dr. Jonas Gustafsson, Andrew Hannay, Alan Davis

Room: Wharf 1
Chair: Arne Gylling (LTU, Sweden)

Sunday, November 6, 18:30 - 20:00

Welcome Reception

TOP

Room: Wharf

Monday, November 7

Monday, November 7, 08:30 - 09:00

Opening Plenary

Room: Maritime 4 Theatre

Monday, November 7, 09:00 - 10:00

Keynote Talk 1

Professor Branka Vucetic, University of Sydney

Room: Maritime 4 Theatre

Monday, November 7, 10:00 - 10:30

Networking Break

Room: Maritime Pre-Function

Monday, November 7, 10:30 - 12:00

S1-1: Smart Meters

Room: Wharf 1
Chair: Ren Ping Liu (University of Technology Sydney, Australia)

Time Slotted Channel Hopping for Smart Metering: Measurements and Analysis of Medium Access
Mikhail Vilgelm (Technical University of Munich, Germany); Murat Gürsu, Samuele Zoppi and Wolfgang Kellerer (Technical University of Munich)

Secure Compressive Random Access for Meter Reading in Smart Grid using Multi-Antenna Access Point
Jinho Choi, KyungJun Lee, Yong-Gu Lee and Nam Yul Yu (Gwangju Institute of Science and Technology (GIST), Korea)

A Novel Communication Mechanism for Smart Meter Packet Transmission on LTE Networks
Chalakorn Karupongsiri (The University of Sydney, Australia); Kumudu S Munasinghe (University of Canberra, Australia); Abbas Jamalipour (University of Sydney, Australia)

Relay Aided Smart Meter to Smart Meter Communication in a Microgrid
Shama N. Islam, Md Apel Mahmud and Amanullah Than Oo (Deakin University, Australia)

SMOME:A Framework for Evaluating the Costs and Benefits of Instrumentation in Smart Home Systems
Seema Nagar (IBM Research, India); Sandhya Aneja (Universiti Brunei Darussalam, Brunei Darussalam); Harshad Khadilkar (Tata Consultancy Services, India); Sampath Dechu (IBM Research, India); Zainul Charbiwala (Independent, India)

S2-1: Cyber-physical security and privacy

Room: Wharf 2

Cyber-Physical Models for Power Grid Security Analysis: 8-Substation Case
Gabriel Weaver (University of Illinois, USA); Edmond Rogers (IT TECHNICAL ASSOCIATE, USA); Robin Berthier and Peter Sauer (University of Illinois at Urbana-Champaign, USA); David Nicol (University of Illinois, Champaign-Urbana, USA); Charles Davis and Katherine Davis (PowerWorld Corporation, USA); Saman Zonouz (Rutgers University, USA); Rakesh B. Bobba (Oregon State University, USA)

An Active Command Mediation Approach for Securing Remote Control Interface of Substations
Daisuke Mashima (Advanced Digital Sciences Center, Singapore); Prageeth Gunathilaka (Advanced Digital Sciences Center & Illinois at Singapore Pvt. Ltd., Singapore); Binbin Chen (Advanced Digital Sciences Center, Singapore)

Non-Cooperative Game Based Defense Against Broadband Jammer in Time-Critical Wireless Applications
Saptarshi Ghosh (Indian Institute of Technology, Delhi, India); Manav Bhatnagar (Indian Institute of Technology Delhi, India); Bijaya Ketan Panigrahi (IIT Delhi, India)

EV-assisted Battery Load Hiding: A Markov Decision Process Approach
Yanan Sun, Lutz Lampe and Vincent W.S. Wong (University of British Columbia, Canada)

S3-1: Advanced Control and Optimization in Smart Grid

Room: Wharf 3
Chair: Yan Xu (Nanyang Technological University, Hong Kong)

An Autonomous Energy Management Platform for Resilient Operation of MicroGrids
Kiyoshi Nakayama (NEC Laboratories Amarica, USA); Ratnesh Sharma (NEC Laboratories America Inc, USA)

Distributed Algorithms for Peak Ramp Minimization Problem in Smart Grid
Hung Khanh Nguyen (University of Houston, USA); Amin Khodaei (University of Denver, USA); Zhu Han (University of Houston, USA)

Submodular Optimization for Control of Prosumer Networks
Nicolas Gensollen (Telecom SudParis/Institut Mines Telecom & CNRS SAMOVAR UMR 5157, France); Vincent Gauthier (Institut TELECOM; Telecom SudParis; SAMOVAR UMR, France); Michel Marot (Institut TELECOM Telecom SudParis, France); Monique Becker (Institut TELECOM; Telecom SudParis, France)

Natural Aggregation Algorithm: A New Efficient Metaheuristic Tool for Power System Optimizations
Fengji Luo (University of Sydney, Australia); Z Y Dong (The University of Sydney, Australia); Yingying Chen (School of Electrical and Information Engineering, The University of Sydney, Australia); Junhua Zhao (Chinese University of Hong Kong (Shenzhen), P.R. China)

Fully Distributed Voltage Control in Subtransmission Networks via Virtual Power Plants
Zhiyuan Tang, David J. Hill and Tao Liu (The University of Hong Kong, Hong Kong)

S4-1: Power Systems

Room: Wharf 4
Chair: Albert Y.S. Lam (The University of Hong Kong, Hong Kong)

Sensitivity Study of Key Factors Influencing Emission Market Based on Hybrid Simulations
Yusheng Xue and Jie Huang (State Grid Electric Power Research Institute, P.R. China); Chao Jiang (Nanjing University of Science & Technology, P.R. China); Kang Li (Queen's University Belfast, United Kingdom); Feng Qian and Xiaohao Wei (State Grid Electric Power Research Institute, P.R. China)

Learning Topology of Distribution Grids using only Terminal Node Measurements
Deepjyoti Deka (Los Alamos National Lab, USA); Scott Backhaus and Michael Chertkov (Los Alamos National Laboratory, USA)

PV Power Predictors for Condition Monitoring
Nikhil Hooda (IIT Bombay, India); Amar Prakash Azad (IBM India Research Lab, Bangalore, India); Pratyush Kumar, Kumar Saurav and Vijay Arya (IBM Research, India); Iskandar Petra (University of Brunei Darussalam, Brunei Darussalam)

On the Measurement of Power Grid Robustness Under Load Uncertainties

Jie Wu (University of Notre Dame, USA); Ulf Schlichtmann (Technische Universität München, Germany); Yiyu Shi (University of Notre Dame, USA)

Data-driven Pricing of Demand Response
Kia Khezeli and Eilyan Bitar (Cornell University, USA)

Monday, November 7, 12:00 - 14:00

Networking Lunch TOP

Restaurant available 12-1pm
Room: Restaurant

Monday, November 7, 14:00 - 15:30

S1-2: Cooperative and Cognitive radio Networks TOP

Room: Wharf 1
Chair: Zongming Fei (University of Kentucky, USA)

Advanced Metering Infrastructure Backhaul Reliability Improvement with Cognitive Radio
Rémi Bonnefoi (CentraleSupélec & IETR, France); Christophe Moy (CentraleSupelec/IETR, France); Jacques Palicot (CentraleSupélec/IETR, France)

Improving the Quality of Service for Critical Flows in Smart Grid Using Software-Defined Networking
Faisal Alharbi and Zongming Fei (University of Kentucky, USA)

On-Demand Cognitive Radio Communications for Smart Grid
Tigang Jiang (University of Electronic Science and Technology of China (UESTC), P.R. China)

Cooperative Wireless Transmission for Smart Metering
Inass Zahiri and Jihane Hamedoun (Mohammadia School of Engineers - Mohammed V University of Rabat); Hicham Bouserki (MAScIR, Morocco); Ghassane Aniba (Mohammadia School of Engineers - Mohammed V University of Rabat, Morocco)

Intertwined: Software-Defined Communication Networks for Multi-Agent System-based Smart Grid Control
Nils Dorsch, Fabian Kurtz and Stefan Dalhues (TU Dortmund University, Germany); Lena Robitzky (TU Dortmund University & Institute for Energy Systems, Energy Efficiency and Energy Economics, Germany); Ulf Haeger (TU Dortmund University, Germany); Christian Wietfeld (TU Dortmund University & Communication Networks Institute, Germany)

S2-2: Data attacks TOP

Room: Wharf 2
Chair: Daisuke Mashima (Advanced Digital Sciences Center, Singapore)

Evaluating Power System Vulnerability to False Data Injection Attacks via Scalable Optimization
Zhigang Chu, Jiazi Zhang, Oliver Kosut and Lalitha Sankar (Arizona State University, USA)

Novel Weaknesses in IEC 62351 Protected Smart Grid Control Systems
Maximilian Strobel (Technische Universität München, Germany); Norbert Wiedermann (Fraunhofer Institute for Applied and Integrated Security, Germany); Claudia Eckert (Technische Universität München, Germany)

Combined Data Integrity and Availability Attacks on State Estimation in Cyber-Physical Power Grids
Kaikai Pan, André Teixeira, Milos Cvetkovic and Peter Palensky (Delft University of Technology, The Netherlands)

S3-2: Distributed Energy Storage in Smart Grid TOP

Room: Wharf 3
Chair: Zhao Xu (Hong Kong Polytechnic University & Technical University of Denmark, Hong Kong)

Energy Storage Scheduling for Imbalance Reduction of Strategically Formed Balancing Groups
Shantanu Chakraborty and Toshiya Okabe (NEC Corporation, Japan)

Coordinated Autonomous Vehicle Parking for Vehicle-to-Grid Services
Albert Y.S. Lam and James Yu (The University of Hong Kong, Hong Kong); Yunhe Hou and Victor O. K. Li (University of Hong Kong, P.R. China)

Energy Management for Demand Responsive Users with Shared Energy Storage System
Katayoun Rahbar (Solar Energy Research Institute of Singapore (SERIS), Singapore); Mohammad Reza Vedady Moghadam and Sanjib Panda (National University of Singapore, Singapore); Thomas Reindl (Solar Energy Research Institute of Singapore (SERIS), Singapore)

Decentralized Control of Distributed Energy Resources in Radial Distribution Systems
Weixuan Lin and Eilyan Bitar (Cornell University, USA)

Towards an Optimal EV Charging Scheduling Scheme with V2G and V2V Energy Transfer
Alexandros-Michail Koufakis, Emmanouil S. Rigas and Nick Bassiliades (Aristotle University of Thessaloniki, Greece); Sarvapali Ramchurn (University of Southampton, United Kingdom)

S4-2: Neural Networks TOP

Room: Wharf 4
Chair: Hamed Mohsenian-Rad (University of California, Riverside, USA)

Deep Neural Network Based Demand Side Short Term Load Forecasting
Seunghyoung Ryu (Sogang University, Korea); Jaekoo Noh (Korea Electric Power Corporation, Korea); Hongseok Kim (Sogang University, Korea)

Parallel Multi-Step Ahead Power Demand Forecasting through NAR Neural Networks
Riccardo Bonetto and Michele Rossi (University of Padova, Italy)

Load Forecasting using Deep Neural Networks
Stefan Hosein and Patrick Hosein (The University of the West Indies, Trinidad and Tobago)

Monday, November 7, 15:30 - 16:00

Networking Break TOP

Room: Maritime Pre-Function

Monday, November 7, 16:00 - 17:30

S1-3: Power Line Communications TOP

Room: Wharf 1
Chair: Andrew Zhang (International Information and Engineering Technology Association, Canada)

A Diagnostic Method for Power Line Networks by Channel Estimation of PLC Devices
Andreas M. Lehmann and Katrin Raab (Friedrich-Alexander University Erlangen-Nürnberg, Germany); Florian Gruber (University of Erlangen, Germany); Erik Fischer (Coburg University of Applied Sciences and Arts, Germany); Ralf R. Müller (FAU Erlangen-Nürnberg, Germany); Johannes Huber (University of Erlangen-Nuremberg, Germany)

Simultaneous Cancellation of Narrow Band Interference and Impulsive Noise in PLC Systems
Deep Shrestha (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain); Andrea M Tonello (University of Klagenfurt & WiTiKee srl, Austria); Xavier Mestre and Miquel Payaró (CTTC, Spain)

Application-layer Performance Analysis of PRIME in Smart Metering Networks
Julio Corchado López (University of Malaga, Spain); Eduardo Manero (Atmel Spain, Spain); José Antonio Cortés (Universidad de Málaga, Spain); Alfredo Sanz (University of Zaragoza & Atmel Spain SAU, Spain); Luis Díez (University of Málaga, Spain)

PPLC-PV: A Pulse Power Line Communication for Series-Connected PV Monitoring
Hideya Ochiai (The University of Tokyo, Japan); Hiroyuki Ikegami (the University of Tokyo, Japan)

Immunity of Smart Meters against Communication Signals
Margarethe Malek (University of Duisburg-Essen, Germany); Daniel Ketel (Universität Duisburg-Essen, Germany); Holger Hirsch (University of Duisburg-Essen, Germany); Mike Trautmann (University Duisburg-Essen, Germany)

S2-3: Authentication and detection TOP

Room: Wharf 2
Chair: Adnan Anwar (University of New South Wales, Australia)

Revocable Anonymity based Authentication for Vehicle to Grid (V2G) Communications
Vishnu Teja Kilari (Arizona State University, USA); Satyajayant Misra (New Mexico State University, USA); Guoliang Xue (Arizona State University, USA)

SwapGuard: A Software-Only Solution for Attesting Hot-Swappable Devices in Power Grids
Xinshu Dong, Sumeet Jauhar and Binbin Chen (Advanced Digital Sciences Center, Singapore)

Multiple Line Outage Detection for Smart Grid: A Block-Wise Compressive Sensing Perspective
Jingbo Tan, Fang Yang, Changyong Pan and Jian Song (Tsinghua University, P.R. China); Zhu Han (University of Houston, USA)

S3-3: Microgrid Planning and Control TOP

Room: Wharf 3
Chair: Yan Xu (Nanyang Technological University, Hong Kong)

A Distributed Gossip-based Voltage Control Algorithm for Peer-to-Peer Microgrids
Jonas Engels (KU Leuven & EnergyVille, Belgium); Hamada Almasalma and Geert Deconinck (KU Leuven, Belgium)

Optimal Solar Panel Placement in Microgrids
Chaorui Zhang and Ying Jun (Angela) Zhang (The Chinese University of Hong Kong, Hong Kong)

Improving Voltage Control in MV Smart Grids
Jun Xiao (University of Amsterdam, The Netherlands); Silvano Chiaradonna (ISTI-CNR, Italy); Felicita Di Giandomenico (Italian National Research Council, ISTI, Italy); Andy Pimentel (University of Amsterdam, The Netherlands)

A Game-Theoretic Model for Energy Trading of Privacy-Preserving Microgrid Social Networks
Youbiao He and Jin Wei (The University of Akron, USA)

Optimal Dispatch of Air Conditioning Load in Micro-Grid Considering the Consumers' Comfort
Yunqing Bai and Jiajie Wu (Chongqing Electric Power College, P.R. China); Tonglin Xiong (Changsha University of Science and Technology, P.R. China); Jingjie Huang (The University of Sydney, Australia); Jiangping Xu (Changsha University of Science and Technology, P.R. China)

Monday, November 7, 18:00 - 19:00

IEEE Steering Committee on Smart Grid Communications TOP

Room: Sussex 1

Tuesday, November 8

Tuesday, November 8, 09:00 - 10:00

Keynote Talk 2 TOP

Professor David Hill, University of Sydney

Room: Maritime 4 Theatre

Tuesday, November 8, 10:00 - 10:30

Networking Break TOP

Room: Maritime Pre-Function

Tuesday, November 8, 10:30 - 12:00

S1-4: Smart Grid TOP

Room: Wharf 1
Chair: Tomoaki Ohtsuki (Keio University, Japan)

Handling Mission-Critical Communication in Smart Grid Distribution Automation Services through LTE
Charalampos Kalalas (CTTC, Spain); Francisco Vázquez-Gallego (Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain); Jesus Alonso-Zarate (Centre Tecnologic de Telecomunicacions de Catalunya - CTTC, Spain)

Modeling and Simulating Communications of Multiagent Systems in Smart Grid
Chong Shum, Wing-Hong Lau, Tsz Yuk Wong, Tian Mao, Shu-hung Chung, Norman Tse and Kim Fung Tsang (City University of Hong Kong, Hong Kong); Loi Lei Lai (City University. London, United Kingdom)

Towards Cross-Layer Design of Communication Network for Smart Grid with Real-Time Pricing
Vladimir Marbukh (National Institute of Standards and Technology, USA)

iCenS: An Information-Centric Smart Grid Network Architecture
Reza Tourani, Satyajayant Misra, Travis Mick, Sukumar Brahma, Milan Biswal and Dan Ameme (New Mexico State University, USA)

Optimized Resource Allocation in LTE Networks Incorporating Delay-Sensitive Smart Grid Traffic
Robert Webster (University of Sydney, Australia); Kumudu S Munasinghe (University of Canberra, Australia); Abbas Jamalipour (University of Sydney, Australia)

S2-4: Fault tolerance and resilience

TOP

Room: Wharf 2
Chair: Yanan Sun (University of British Columbia, Canada)

Cascading Link Failure Analysis in Interdependent Networks for Maximal Outages in Smart Grid
Parisa Akaber and Bassam Moussa (Concordia University, Canada); Mourad Debbabi (Concordia University, Montreal, Canada); Chadi Assi (Concordia University, Canada)

Cyber-Air-Gapped Detection of Controller Attacks through Physical Interdependencies
Sriharsha Etigowni (Rutgers University, USA); Mehmet Cintuglu (Florida International University, USA); Maryam Kazerooni (University of Illinois at Urbana-Champaign, USA); Shamina Hossain (University of Illinois, USA); Pengfei Sun (Rutgers University, USA); Katherine Davis (PowerWorld Corporation, USA); Osama Mohammed (Florida International University, USA); Saman Zonouz (Rutgers University, USA)

Towards Secure and Resilient Networked Power Distribution Grids: Process and Tool Adoption
Mislav Findrik, Jawad Haider Kazmi, Mario Faschang and Paul Smith (AIT Austrian Institute of Technology GmbH, Austria); Friederich Kupzog (AIT - Austrian Institute of Technology, Austria)

Validating Resiliency in Software Defined Networks for Smart Grids
Rakesh Kumar (University of Illinois, Urbana-Champaign, USA); David Nicol (University of Illinois, Champaign-Urbana, USA)

S3-4: Grid Integration of Demand Side Technologies

TOP

Room: Wharf 3
Chair: Guangya Yang (Technical University of Denmark, Denmark)

Demand Response in Commercial Buildings with an Assessable Impact on Occupant Comfort
Mikkel Kjaergaard, Krzysztof Arendt, Anders Clausen, Aslak Johansen, Muhyiddine Jradi, Bo Jørgensen, Peter Nelleman and Fisayo Sangogboye (University of Southern Denmark, Denmark); Christian Veje (University of Southern Denmark & Center for Energy Informatics, Denmark); Morten G Wollsen (University of Southern Denmark, Denmark)

Efficient Indirect Real-Time EV Charging Method Based on Imperfect Competition Market
Poria Hasanpor Divshali (The State University of New York (SUNY) Korea, Korea & Stony Brook University, USA); Bong Jun David Choi (The State University of New York (SUNY) Korea & Stony Brook University, Korea)

Volt-VAR Optimization by using electric vehicle, renewable energy and residential load-shifting
Mosaddek Hossain Kamal Tushar (Concordia University & University of Dhaka, Canada); Chadi Assi (Concordia University, Canada)

Kendall's Tau of Frequency Hurst Exponent as Blackout Proximity Margin
Laith Shalalfeh and Paul Bogdan (University of Southern California, USA); Edmond Jonckheere (USC, USA)

Distribution Grid Reliability Analysis Considering Regulation Down Load Resources via Micro-PMU Data
Alireza Shahsavari and Ashkan Sadeghi-Mobarakeh (University of California, Riverside, USA); Emma Stewart (Lawrence Berkeley National Laboratory, USA); Hamed Mohsenian-Rad (University of California at Riverside, USA)

S4-3: Energy Management 1

TOP

Room: Wharf 4
Chair: Chenye Wu (UC Berkeley, USA)

ARTA: An Economic Middleware to Exchange Pervasive Energy and Computing Resources
Leila Sharifi (Instituto Superior Técnico, Portugal); Felix Freitag (Technical University of Catalonia, Spain); Luís Veiga (INESC-ID Lisboa / Instituto Superior Técnico, Universidade de Lisboa, Portugal)

Aggregating Energy Flexibilities under Constraints
Emmanouil Valsomatzis and Torben B Pedersen (Aalborg University, Denmark); Alberto Abelló (Universitat Politècnica de Catalunya, Spain); Katja Hose (Aalborg University, Denmark)

Distributed Machine Learning based Smart-grid Energy Management with Behavior Cognition
Hang Xu, Hantao Huang, Suleman Khalid Rai and Hao Yu (Nanyang Technological University, Singapore)

Maximizing Aggregator Profit through Energy Trading by Coordinated Electric Vehicle Charging
James Yu, Junhao Lin and Albert Y.S. Lam (The University of Hong Kong, Hong Kong); Victor O. K. Li (University of Hong Kong, P.R. China)

Stochastic collaborative planning model for electric vehicle charging stations
Shu Wang (The University of Sydney, Australia); Fengji Luo (University of Sydney, Australia); Z Y Dong and Ke Meng (The University of Sydney, Australia); Zhao Xu (The Hong Kong Polytechnic University, Hong Kong); Yu Zheng (China Southern Power Grid Company, P.R. China)

Tuesday, November 8, 12:00 - 13:00

IEEE ComSoc Technical Subcommittee on Smart Grid Communications

TOP

Room: Sussex 1

Tuesday, November 8, 12:00 - 14:00

Networking Lunch

TOP

Restaurant available 12-1pm
Room: Restaurant

Tuesday, November 8, 13:20 - 16:15

Site Visit: Ausgrid Learning Centre

TOP

Limited space - Check with onsite registration desk

Tuesday, November 8, 18:30 - 21:30

Banquet Dinner

TOP

Room: Great Hall, University of Sydney

Wednesday, November 9

Wednesday, November 9, 09:00 - 10:00

Keynote Talk 3

Room: Maritime 4 Theatre

Wednesday, November 9, 10:00 - 10:30

Networking Break

Room: Maritime Pre-Function

Wednesday, November 9, 10:30 - 12:00

S1-5: IoT and Heterogeneous networks

Room: Wharf 1
Chair: Daisuke Mashima (Advanced Digital Sciences Center, Singapore)

Improving Latency and Reliability in 5G Internet-of-Things Networks
Hengzhao Tang (The University of Sydney & School of Electrical and Information Engineering, Australia); Wenhao Zhang and Wibowo Hardjawana (The University of Sydney, Australia); Branka Vucetic (University of Sydney, Australia)

Residential Demand Response System Framework Leveraging IoT Devices
Daisuke Mashima (Advanced Digital Sciences Center, Singapore); Wei-Peng Chen (Fujitsu Laboratories of America, USA)

An Optimization Framework for Planning of WAMS with a Heterogeneous Communication Network
Halil Alper Tokel and Gholamreza Alirezaei (RWTH Aachen University, Germany); Sumera Baig (King Mongkut's University of Technology North Bangkok, Thailand); Rudolf Mathar (RWTH Aachen University, Germany)

Support for Hybrid Network in RPL
François Lemercier (Telecom Bretagne & Itron, France); Nicolas Montavont (Institut Mines Telecom / Telecom Bretagne, France); Laurent Toutain (Telecom Bretagne, France); Kumaran Vijayasankar (Texas Instruments, USA); Ramanuja Vedantham (Texas Instruments Inc., USA); Philippe Chiummiento (ITRON, France)

Experimental Validation of the Usability of Wi-Fi over Redundant Paths for Streaming Phasor Data
Maaz Mohiuddin (EPFL, Switzerland); Miroslav Popovic (EPFL, Lausanne, Switzerland); Athanasios Giannakopoulos and Jean-Yves Le Boudec (EPFL, Switzerland)

S2-5: SCADA

Room: Wharf 2
Chair: Binbin Chen (Advanced Digital Sciences Center, Singapore)

Estimation of Smart Grid Topology using SCADA Measurements
Adnan Anwar and Abdun Mahmood (University of New South Wales, Australia); Mark R Pickering (UNSW Canberra, Australia)

Detecting Data Integrity Attacks on SCADA Systems Using Limited PMUs
Seemita Pal (Rensselaer Polytechnic Institute, USA); Biplab Sikdar (National University of Singapore, Singapore); Joe H. Chow (Rensselaer Polytechnic Institute, USA)

OLAF: Operation-Level Traffic Analyzer Framework for Smart Grid
Wenyu Ren (University of Illinois at Urbana-Champaign, USA); Steve J Granda (University of Illinois Urbana-Champaign, USA); Timothy Yardley (University of Illinois at Urbana-Champaign, USA); King-Shan Lui (The University of Hong Kong, Hong Kong); Klara Nahrstedt (University of Illinois, USA)

Grammar-based Adaptive Fuzzing: Evaluation on SCADA Modbus Protocol
Hyunguk Yoo (Ajou University, Korea); Taeshik Shon (Ajou University & Ajou University, Korea)

S3-5: Enabling Technologies for Microgrid

Room: Wharf 3
Chair: Youwei Jia (The Hong Kong Polytechnic University, Hong Kong)

A Run-off Algorithm Based Approach for Optimal Operation of a DCCHP System
Jingjie Huang, Ke Meng and Z Y Dong (The University of Sydney, Australia); Renjun Zhou (Changsha University of Science and Technology, P.R. China); Yu Zheng and Xiyuan Ma (China Southern Power Grid Company, P.R. China)

Community Storage for Firming
Chenye Wu (UC Berkeley, USA); Jared Porter (University of California, Berkeley, USA); Kameshwar Poolla (University of California at Berkeley, USA)

An ABC Algorithm for Optimization of Restoration Path in a Power Grid with HVDC Connection
Ke Xu and Bin Xie (Jiangsu Electric Power Research Institute, P.R. China); Wang Chenggen (Jiangsu Electric Power Company Research Institute, P.R. China); Qian Zhou (Jiangsu Electric Power Research Institute, P.R. China); Yunyun Xie and Xi Chen (Nanjing University of Science and Technology, P.R. China)

Modeling and Co-simulation of IEC61850-Based Microgrid Protection
Tsz Yuk Wong, Chong Shum, Wing-Hong Lau, Shu-hung Chung, Kim Fung Tsang and Norman Tse (City University of Hong Kong, Hong Kong)

Design and Control of a Boost Inverter Based Multi-Input Converter
Neng Zhang, Danny Sutanto and Kashem Muttaqi (University of Wollongong, Australia)

S4-4: Smart Grids

Room: Wharf 4

Presenting User Behavior from Main Meter Data
Emad Ebeid and Rune Heick (Aarhus University, Denmark); Rune Hylsberg Jacobsen (Aarhus University & Electrical and Computer Engineering, Denmark)

Quantifying flexibility in EV charging as DR potential: Analysis of two real-world data sets
Chris Develder and Nasrin Sadeghianpourhamami (Ghent University - iMinds, Belgium); Matthias Strobbe (University of Ghent, Belgium); Nazir Refa (ElaadNL, The Netherlands)

Time-Series Clustering for Data Analysis in Smart Grid
Akanksha Maurya (University of California-San Diego, USA); Alper Sinan Akyurek (University of California - San Diego, USA); Baris Aksanli (San Diego State University, USA); Tajana Simunic Rosing (University of California, San Diego, USA)

Spatial-Temporal Load Forecasting Using AMI Data
Jin Xu (Stony Brook University, USA); Meng Yue (Brookhaven National Lab, USA); Dimitrios Katramatos (Brookhaven National Laboratory, USA); Shinjae Yoo (Brookhaven National Lab, USA)

Wednesday, November 9, 12:00 - 14:00

Networking Lunch

Restaurant available 12-1pm
Room: Restaurant

Wednesday, November 9, 14:00 - 15:30

S1-6: Cyber-Physical Safety, protection and optimization

Room: Wharf 1
Chair: Steven Blair (University of Strathclyde, United Kingdom)

Power Grid Safety Control via Fine-Grained Multi-Persona Programmable Logic Controllers
Gabriel Salles-Loustau, Luis Garcia and Pengfei Sun (Rutgers University, USA); Maryam Dehnavi (MIT, USA); Saman Zonouz (Rutgers University, USA)

Application of MPLS-TP for Transporting Power System Protection Data
Steven Blair and Campbell Booth (University of Strathclyde, United Kingdom); Jurgen Michielsen (OTN Systems, Belgium); Nilesh Joshi (CommTel Network Solutions, Australia)

Rejuvenation of the IEC 61850 Protocol Stack for MMS
Christoph Ruland (University of Siegen, Germany); Namhi Kang (Duksung Womens' University, Korea); Jochen Sassmannshausen (University of Siegen, Germany)

Hybrid Opto-electronic Network Structure with All-optical Edge Node for Sample Value in Substation
Yu Zheng, Zijian Mao, Shijie Ma and Xiaohan Sun (Southeast University, P.R. China)

Minimizing Energy Costs of Commercial Buildings in Developing Countries
Kumar Saurav, Heena Bansal and Megha Nawhal (IBM Research, India); Vikas Chandan (IBM Research India, India); Vijay Arya (IBM Research, India)

S3-6: New Advances in System Monitoring and Surveillance

Room: Wharf 3
Chair: Youwei Jia (The Hong Kong Polytechnic University, Hong Kong)

Distributed Gauss-Newton Method for AC State Estimation: A Belief Propagation Approach
Mirsad Cosovic (Schneider Electric DMS NS LLC, Serbia); Dejan Vukobratović (University of Novi Sad, Serbia)

Just-Ahead-Of-Time Controller Recovery
Sriharsha Etigowni (Rutgers University, USA); Shamina Hossain (University of Illinois, USA); Maryam Kazerooni (University of Illinois at Urbana-Champaign, USA); Katherine Davis (PowerWorld Corporation, USA); Saman Zonouz (Rutgers University, USA)

Frequency Stability Improvement of Low Inertia Systems Using Synchronous Condensers
Ha Thi Nguyen, Guangya Yang and Arne Hejde Nielsen (Technical University of Denmark, Denmark); Peter Højgaard Jensen (Siemens A/S, Denmark)

Optimal PMU Placements Under Propagation Depth Constraints by Mixed Integer Linear Programming
Xian-Chang Guo and Chung-Shou Liao (National Tsing Hua University, Taiwan); Chia-Chi Chu (National Tsing Hua Univ, Taiwan)

S4-5: Energy Management 2

Room: Wharf 4
Chair: Wen Hu (the University of New South Wales (UNSW) & CSIRO, Australia)

Predictability, Constancy and Contingency in Electric Load Profiles
Chenye Wu (University of California, Berkeley); Wenyuan Tang (University of California, Berkeley, USA); Kameshwar Poolla (University of California at Berkeley, USA); Ram Rajagopal (Stanford University, USA)

Recommending Electricity Plans: A Data-driven Method
Yuan Zhang (The University of Sydney); Ke Meng and Z Y Dong (The University of Sydney, Australia); Dong Xu (the University of Sydney, Australia)

Bilevel Programming Approach to Optimizing a Time-variant Electricity Tariff for Demand Response
Andras Kovacs (MTA SZTAKI, Institute for Computer Science and Control of the Hungarian Academy of Science, Hungary)

Detecting Anomalous Electrical Appliance Behavior based on Motif Transition Likelihood Matrices
Andreas Reinhardt (TU Clausthal, Germany); Delphine Reinhardt (née Christin) (University of Bonn and Fraunhofer FKIE, Germany)

SmartSim: A Device-Accurate Smart Home Simulator for Energy Analytics
Dong Chen (University of Massachusetts Amherst, USA); David Irwin and Prashant Shenoy (University of Massachusetts, Amherst, USA)

SSMM1: Emerging techniques for system security and market management in smart grids 1

Room: Wharf 2
Chair: Zhao Xu (Hong Kong Polytechnic University & Technical University of Denmark, Hong Kong)

A Distributed Control for Active Power Curtailment within a Wind Farm Based on Ratio Consensus Algorithms
Xiaodan Gao (University of Newcastle, Australia); Ke Meng (The University of Sydney, Australia); Dongxiao Wang and Guo Chen (the University of Newcastle, Australia); Fengji Luo (University of Sydney, Australia); Z Y Dong (The University of Sydney, Australia)

Consensus-driven Distributed Control of Battery Energy Storage Systems for Loading Management in Distribution Networks
Dongxiao Wang (the University of Newcastle, Australia); Ke Meng (The University of Sydney, Australia); Xiaodan Gao (University of Newcastle, Australia); Guo Chen (the University of Newcastle, Australia); Fengji Luo (University of Sydney, Australia); Z Y Dong (The University of Sydney, Australia)

Power Smoothing Control of Wind Turbines Using Different Strategies
Yujun Li (Hong Kong Polytechnic University, Hong Kong); Zhao Xu (The Hong Kong Polytechnic University, Hong Kong)

A Comparison Study on Electric Vehicle Growth Forecasting based on Grey System Theory and NAR Neural Network
Xian Zhang (Hong Kong Polytechnic University, Hong Kong); Xuesen Yang, Yangyang Zhou, Kexin Ye and Guibin Wang (Shenzhen University, P.R. China); Kevin Ka-wing Chan (Hong Kong Polytechnic University, Hong Kong)

Wednesday, November 9, 15:30 - 16:00

Networking Break

Room: Maritime Pre-Function

Wednesday, November 9, 16:00 - 17:30

S3-7: Enhancing Reliability of Grid Operation

Room: Wharf 3
Chair: Guangya Yang (Technical University of Denmark, Denmark)

Modeling Renewable Energy Production for Base Stations Power Supply
Daniela Renga and Michela Meo (Politecnico di Torino, Italy)

Risk Assessment of Power Grid Considering the Reliability of the Information System
Dongxu Lu, Yanli Liu and Yuan Zeng (Tianjin University, P.R. China)

Open architecture for cost effective protection and control of power distribution networks
Gulnara Zhabelova (Lulea Tekniska Universitet, Sweden); Chen-Wei Yang (The University of Auckland, New Zealand); Valeriy Vyatkin (Luleå University of Technology, Sweden); Nicholas Etherden (Vattenfall AB, Sweden); Lars Christoffersson (IETV AB, Sweden)

On The Reliability Gain of Neighborhood Coalitions: A Data-Driven Study
Christian Van Gelder (Erasmus University, Rotterdam School of Management, The Netherlands); Yashar Ghiassi-Farrokhfal (Erasmus University, Rotterdam School of Management)

SSMM2: Emerging techniques for system security and market management in smart grids 2

Room: Wharf 2
Chair: Zhao Xu (Hong Kong Polytechnic University & Technical University of Denmark, Hong Kong)

Fast Forecasting Uncontrolled Network Separation in Smart Grid Environment
Youwei Jia, Zhao Xu and Chunxue Zhang (The Hong Kong Polytechnic University, Hong Kong); Weicong Kong (The University of Sydney, Australia)

Optimal PMU Placement For Voltage Control
Chunxue Zhang, Zhao Xu and Youwei Jia (The Hong Kong Polytechnic University, Hong Kong)

Robust Offering Strategy for a Wind Power Producer under Uncertainties
Jiayong Li (The Hong Kong Polytechnic University, Hong Kong); Can Wan (The Hong Kong Polytechnic University, Hong Kong & Tsinghua University, P.R. China); Zhao Xu (Hong Kong Polytechnic University & Technical University of Denmark, Hong Kong)

A Two-stage Pattern Recognition Method for Electric Customer Classification in Smart Grid
Bo Peng (Zhejiang University, P.R. China); Can Wan (The Hong Kong Polytechnic University, Hong Kong & Tsinghua University, P.R. China); Shufeng Dong (Zhejiang University, P.R. China); Lin Jin and Yonghua Song (Tsinghua University, P.R. China); Yi Zhang (State Grid Fujian Electric Power Research Institute, P.R. China); Jun Xiong (State Grid Xiamen Electric Power Supply Company, P.R. China)