IREP'17

symposium
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Provisional Programme v3.0 – Paper Sessions

The following Programme for IREP'2017 is published to the convenience of presenting authors. It is provisional in the sense that the confirmation of the inclusion of the paper in the final proceedings and its publication is subject to the actual presentation of the paper in the conference.

S01 - Large-scale optimization with uncertainty

August 28, Monday - 09:00 – 10:30

Chair: Ian Hiskens, University of Michigan, USA

1 **Robust Optimization taking into account forecasting errors and corrective actions**
Stéphane Fliscounakis, RTE/DES, France
Hatim Djelassi, RWTH Aachen University, Germany
Alexander Mitsos, RWTH Aachen University, Germany
Patrick Panciatici, RTE/DES, France

58 **Operational Aware Large-Scale FACTS Placement and Sizing for Transmission System Reinforcement**
Vladimir Frolov, Skoltech, Russia
Priyanko Guha Thakurta, Skoltech, India
Scott Backhaus, LANL, USA
Janusz Bialek, Center for Energy Systems, Skolkovo Institute of Science and Technology (Skoltech), Russia
Michael Chertkov, LANL, USA

72 **Optimal Siting and Sizing of Energy Storage Systems for Wind Integration**
Nhi Thi Ai Nguyen, Politecnico di Milano, Italy
Dinh Duong Le, Danang University of Science and Technology, Vietnam
Cristian Bovo, Politecnico di Milano, Italy
Alberto Berizzi, Politecnico di Milano, Italy

103 **Towards the Maximization of Renewable Energy Integration Using a Stochastic AC-QP Optimal Power Flow Algorithm**
Jennifer F. Marley, Valparaiso University, USA
Maria Vrakopoulou, ETH Zurich, Switzerland
Ian A. Hiskens, University of Michigan, USA

S02 - Stochastic modelling and control of renewable energy sources I

August 28, Monday - 11:00 – 12:30

Chair: Chen-Ching Liu, Washington State University, USA

8 **Robust Dynamic Load Dispatch under Uncertainties**
Yutaka Sasaki, Hiroshima University, Japan
Naoto Yorino, Hiroshima University, Japan
Yoshifumi Zoka, Hiroshima University, Japan
Imam Wahyudi Farid, Hiroshima University, Japan
Shinya Sekizaki, Hiroshima Uniceristy, Japan

14 **Affine Arithmetic Formulation of the Unit Commitment Problem Under Uncertainty**
David Romero-Quete, Universidad Nacional de Colombia, Columbia
Claudio Canizares, ECE, University of Waterloo, Canada

15 **Impact of Stochastic Dependence within Load and Non-synchronous Generation on Frequency Stability**
Kazi Hasan, The University of Manchester, United Kingdom
Robin Preece, The University of Manchester, United Kingdom

31 **Resource adequacy in grids with deepening penetrations of integrated renewable resources**
Mariola Ndrio, University of Illinois at Urbana-Champaign, USA
George Gross, University of Illinois at Urbana-Champaign, USA

S03 - Storage technologies for large-scale renewable generation

August 28, Monday - 14:00 – 16:00

Chair: João Peças Lopes, INESC TEC, Portugal

29 **Optimal Load Control for Frequency Regulation under Limited Control**
John Pang, California Institute of Technology, USA
Linqi Guo, California Institute of Technology, USA
Steven Low, California Institute of Technology, USA

34 **Identification of Dynamic Simulation Models for Variable Speed Pumped Storage Power Plants**
Carlos Moreira, INESC TEC and FEUP, Portugal
Nuno Fulgêncio, INESC TEC, Portugal
Bernardo Silva, INESC TEC, Portugal
Christophe Nicolet, Power Vision Engineering, Switzerland
Antoine Béguin, Power Vision Engineering, Switzerland

67 **Dealing with dynamic security due to reversible hydro power plants in islanded power systems - A study case for increasing renewables integration**
Maria Helena Vasconcelos, INESC TEC and FEUP, Portugal
Pedro Beires, INESC TEC, Portugal
Carlos Moreira, INESC TEC and FEUP, Portugal
João Abel Peças Lopes, INESC TEC and FEUP, Portugal

74 **Modelling of electrolyzers in hydrogen vehicle refuelling stations for provision of ancillary services**
Lingxi Zhang, University of Manchester, United Kingdom
Stephen Clegg, University of Manchester, United Kingdom
Pierluigi Mancarella, University of Manchester, United Kingdom

92 **Hydroelectric Power System Model and its Application to an Optimal Dispatch Design**
Dimitra Apostolopoulou, University of Oxford, United Kingdom
Malcolm McCulloch, University of Oxford, United Kingdom

S04 - Dynamic modelling, assessment and control of uncertain power systems I

August 28, Monday - 16:30 – 19:00
Chair: Costas Vournas, NTUA, Greece

6 **Frequency Control in Networked Microgrids with Voltage-Sensitive Loads**
Kun Liu, The University of Hong Kong, Hong Kong
Tao Liu, The University of Hong Kong, Hong Kong
David Hill, The University of Hong Kong, Hong Kong

20 **Efficient Identification of Transient Instability States of Uncertain Power Systems**
Panagiotis Papadopoulos, The University of Manchester, United Kingdom
Jovica Milanovic, The University of Manchester, United Kingdom

23 **Creation of Synthetic Electric Grid Models for Transient Stability Studies**
Ti Xu, University of Illinois at Urbana-Champaign, USA
Adam B. Birchfield, Texas A&M University, USA
Komal S. Shetye, University of Illinois at Urbana-Champaign, USA
Thomas J. Overbye, Texas A&M University, USA

27 **Rapid Assessment of Unstable Mode Variability in Power Grids**
Yusheng Xue, State Grid EPRI, Southeast University, China
Tiangang Huang, Southeast University, China
Kit Po Wong, The University of Western Australia, Australia

28 **System Stability Issues arising from Distributed Sources under adverse network conditions**
Costas Vournas, National Technical University of Athens, Greece
Theodoros Souxes, National Technical University of Athens, Greece

22 **Variable-Step Multi-Stage Integration Methods for Fast and Accurate Power System Dynamics Simulation**
Shrirang Abhyankar, Argonne National Laboratory, USA
Emil Constantinescu, Argonne National Laboratory, USA
Alexander Flueck, Illinois Institute of Technology, USA

S05 - Wide-area security assessment and control I

August 29, Tuesday - 09:00 – 10:30

Chair: Christian Rehtanz, TU Dortmund University, Germany

9 **A Method for Evaluating Power System Security Region under Uncertainties**
Naoto Yorino, Hiroshima University, Japan
Yuki Nakamura, Hiroshima University, Japan
Abdillah Muhammad, Hiroshima University, Japan
Yutaka Sasaki, Hiroshima University, Japan
Yoshiharu Okumoto, Hiroshima University, Japan

32 **Incorporation of Distance-Protection Tripping to the Direct Methods for Transient Stability Assessment**
Valentin Azbe, University of Ljubljana, Faculty of Electrical Engineering, Slovenia
Rafael Mihalic, University of Ljubljana, Faculty of Electrical Engineering, Slovenia

37 **Wide-Area Generation Control between Control Regions with High Renewable Penetration**
Christoph Lackner, Rensselaer Polytechnic Institute, USA
Joe Chow, Rensselaer Polytechnic Institute, USA

50 **Studying the Electromechanical Oscillations using Ambient Synchrophasor Data**
Phuc Huynh, Department of ECE, University of Illinois at Urbana Champaign, USA
Qianli Chen, Department of CEE, University of Illinois at Urbana Champaign, USA
Ahmed Elbanna, Department of CEE, University of Illinois at Urbana Champaign, USA
Hao Zhu, Department of ECE, University of Illinois at Urbana Champaign, USA

S06 - Dynamic modelling, assessment and control of uncertain power systems II

August 29, Tuesday - 11:00 – 12:30

Chair: Naoto Yorino, Iroshima University, Japan

81 **Transient Stability Assessment of Power Systems With Uncertain Renewable Generation**
Hugo Villegas Pico, National Renewable Energy Laboratory, USA
Dionysios Aliprantis, Purdue University, USA
Xiaojun Lin, Purdue University, USA

100 **A Model-Predictive Control Strategy for Alleviating Voltage Collapse**
Jonathon Martin, Department of Electrical Engineering and Computer Science, University of Michigan, USA
Ian Hiskens, Department of Electrical Engineering and Computer Science, University of Michigan, USA

101 **Simulation of Integrated Transmission and Distribution Networks with a Hybrid Three-Phase/Single-Phase Formulation**
Glauco N. Taranto, FEDERAL UNIVERSITY OF RIO DE JANEIRO – COPPE, Brazil
José Mauro T. Marinho, FEDERAL UNIVERSITY OF RIO DE JANEIRO – COPPE, Brazil

104 **Validity Range of Fundamental Frequency Simulations under High Levels of Variable Generation Technologies**
Claudia Rahmann, University of Chile, Chile
J. Vega, University of Chile, Chile
F. Valencia, University of Chile, Chile

S07 - Stochastic modelling and control of renewable energy sources II

August 29, Tuesday - 14:00 – 16:00

Chair: Claudio Canizares, University of Waterloo, Canada

38 **Operational Planning of Active Distribution Grids under Uncertainty**
Stavros Karagiannopoulos, ETH Zurich EEH - Power Systems Laboratory, Switzerland
Line Roald, Los Alamos National Laboratory, USA
Petros Aristidou, School of Electronic and Electrical Engineering, University of Leeds, United Kingdom
Gabriela Hug, Power Systems Laboratory, ETH Zurich, Switzerland

39 **Quantification of the Benefits of Campus Utility System Operations as a Microgrid**
Siddhartha Nigam, University of Illinois at Urbana-Champaign, USA
George Gross, University of Illinois at Urbana-Champaign, USA

48 **Power System Optimization with Uncertainty and AC Power Flow: Analysis of an Iterative Algorithm**
Line Roald, Los Alamos National Laboratory, USA
Daniel Molzahn, Argonne National Laboratory, USA
Aldo Tobler, ETH Zurich, Switzerland

75 **Bidding Strategy in Energy and Regulation Markets for A Wind Power Plant**
Ehsan Nasrolahpour, University of Calgary, Canada
Carrie Houston, Wind Energy Institute of Canada, Canada
Scott Harper, Wind Energy Institute of Canada, Canada
Marianne Rodgers, Wind Energy Institute of Canada, Canada
Hamidreza Zareipour, University of Calgary, Canada
William D. Rosehart, University of Calgary, Canada

82 **Introducing machine learning for power system operation support**
Benjamin Donnot, RTE, LRI, INRIA, France
Isabelle Guyon, UPSud Paris-Saclay, LRI, INRIA, France
Marc Schoenauer, LRI, INRIA, France
Antoine Marot, RTE R&D, France
Patrick Panciatici, RTE R&D, France

S08 - Data analytics for power systems I

August 30, Wednesday - 09:00 – 10:30

Chair: Louis Whenkel, University of Liège, Belgium

2 **Recent Results of PMU Data Analytics by Exploiting Low-dimensional Structures**
Meng Wang, Rensselaer Polytechnic Institute (RPI), USA
Joe Chow, Rensselaer Polytechnic Institute, USA
Pengzhi Gao, Rensselaer Polytechnic Institute, USA
Yingshuai Hao, Rensselaer Polytechnic Institute, USA
Wenting Li, Rensselaer Polytechnic Institute, USA
Ren Wang, Rensselaer Polytechnic Institute, USA

12 **On Statistical Size and Placement of Generation and Load For Synthetic Grid Modeling**
Seyyed Hamid Elyas, Virginia Commonwealth University, USA
Zhifang Wang, Virginia Commonwealth University, USA
Robert J. Thomas, Cornell University, USA

24 **Statistically Characterizing the Electrical Parameters of the Grid Transformers and Transmission Lines**
Mir Hadi Athari, Virginia Commonwealth University, USA
Zhifang Wang, Virginia Commonwealth University, USA

89 **Electromechanical Wave Propagation in FNET/GridEye, a Wide-area Frequency Monitoring Network**
Shutang You, University of Tennessee, USA
Yong Liu, University of Tennessee, USA
Yilu Liu, University of Tennessee, Oak Ridge National Laboratory, USA
Penn Markham, Electric Power Research Institute, USA

S09 - Dynamic modelling, assessment and control of uncertain power systems III

August 30, Wednesday - 11:00 – 12:30
Chair: Robert Thomas, Cornell University, USA

30 **Robust Transient Stability Assessment via Reachability Analysis**
Dongchan Lee, Massachusetts Institute of Technology, USA
Konstantin Turitsyn, Massachusetts Institute of Technology, USA

36 **Dynamic performance of the frequency containment reserve - Experience from the Nordic system**
Robert Eriksson, Swedish National Grid, Sweden
Magnus Perninge, Linneaus University, Sweden

40 **Dynamic Behaviour of Distribution Networks with TSO-DSO Interconnection Power Flow Control**
Daniel Mayorga Gonzalez, TU Dortmund University, Germany
Lena Robitzky, TU Dortmund University, Germany
Ulf Häger, TU Dortmund University, Germany
Christian Rehtanz, TU Dortmund University, Germany
Johanna Myrzik, TU Dortmund University, Germany

51 **Impact of Active Distribution Networks on Voltage Stability of Electric Power Systems**
Lena Robitzky, TU Dortmund University, Germany
Daniel Mayorga Gonzalez, TU Dortmund University, Germany
Chris Kittl, TU Dortmund University, Germany
Christoph Strunck, TU Dortmund University, Germany
Jannik Zwartscholten, TU Dortmund University, Germany
Sven Christian Müller, logarithmo GmbH, Germany
Ulf Häger, TU Dortmund University, Germany
Johanna Myrzik, TU Dortmund University, Germany
Christian Rehtanz, TU Dortmund University, Germany

S10 - Electricity markets

August 30, Wednesday - 14:00 – 16:00
Chair: George Gross, University of Illinois at Urbana-Champaign, USA

53 **Impact assessment of performance-based regulation market design on the performance of plug-in electric vehicles aggregators: An integrated approach**
Stylianos Vagropoulos, Aristotle University of Thessaloniki, Greece, Greece
Anastasios Bakirtzis, Aristotle University of Thessaloniki, Greece, Greece

65 **Data-Driven Security-Constrained OPF**
Florian Thams, Technical University of Denmark, Denmark
Lejla Halilbašic, Technical University of Denmark, Denmark
Pierre Pinson, Technical University of Denmark, Denmark
Spyros Chatzivasileiadis, Technical University of Denmark, Denmark
Robert Eriksson, Swedish National Grid, Sweden

68 **A Locational Price for Power Injection Fluctuations of Variable Generation and Load**
Adria Brooks, University of Wisconsin-Madison, USA
Bernard Lesieutre, University of Wisconsin-Madison, USA

76 **A Decentralized Privacy-Based Electricity Market Scheme for Responsive Demands**
Miadreza Shafie-khah, C-MAST/UBI, Portugal
Gerardo Osório, C-MAST/UBI, Portugal
João Catalão, INESC TEC and FEUP, Portugal

98 **Cooperative Game Theory for Non-linear Pricing of Load-side Distribution Network Support**
Archie Chapman, University of Sydney, Australia
Sleiman Mhanna, University of Sydney, Australia
Gregor Verbic, University of Sydney, Australia

S11 - Distributed versus centralized decision models

August 30, Wednesday - 16:30 – 18:30
Chair: Gianfranco Chicco, Politecnico di Torino, Italy

19 **Dynamic Equivalent of a Distribution Grid Hosting Dispersed Photovoltaic Units**
Gilles Chaspierre, University of Liege, Belgium
Patrick Panciatici, RTE, France
Thierry Van Cutsem, FNRS and University of Liège, Belgium

55 **Component-based dual decomposition and ADMM in the OPF problem**
Sleiman Mhanna, The University of Sydney, Australia
Gregor Verbic, The University of Sydney, Australia
Archie Chapman, The University of Sydney, Australia

63 **Voltage Support Solutions in Networks with High Levels of Variable Renewable Generation**
C. Yaman Evrenosoglu, ABB Corporate Research, Switzerland
Adamantios Marinakis, ABB Corporate Research, Switzerland
Marija Zima-Bockarjova, ABB Corporate Research, Switzerland
Nikolaos Savvopoulos, ABB Corporate Research, Switzerland
Alexandre Oudalov, ABB Power Grids Division, Switzerland

71 **Foreseeing New Control Challenges in Electricity Prosumer Communities**
Frédéric Olivier, University of Liège, Belgium
Daniele Marulli, Politecnico di Torino, Italy
Damien Ernst, University of Liège, Belgium
Raphaël Fonteneau, University of Liège, Belgium

80 **Coordination of Distributed Energy Resources in Lossy Networks for Providing Frequency Regulation**
Hanchen Xu, University of Illinois at Urbana-Champaign, USA
Samuel Utomi, University of Illinois at Urbana-Champaign, USA
Alejandro Dominguez-Garcia, University of Illinois at Urbana-Champaign, USA
Peter Sauer, University of Illinois at Urbana-Champaign, USA

S12 - Dynamic modelling, assessment and control of uncertain power systems IV

August 31, Thursday - 09:00 – 10:30
Chair: Glauco Taranto, UFRJ, Brazil

60 **Evaluation of Suitability of Different Transient Stability Indices for Identification of Critical System States**
Amirhossein Sajadi, University of Manchester, United Kingdom
Robin Preece, University of Manchester, United Kingdom
Jovica Milanovic, University of Manchester, United Kingdom

64 **Increasing the Resilience of Low-inertia Power Systems by Virtual Inertia and Damping**
Dominic Groß, ETH Zürich, Switzerland
Saverio Bolognani, ETH Zürich, Switzerland
Bala Kameshwar Poolla, ETH Zürich, Switzerland
Florian Dörfler, ETH Zürich, Switzerland

66 **Primary Frequency Control in Future Power Systems - The ELECTRA Project Approach under the Web-of-Cells Concept**
António Coelho, INESC TEC, Portugal
Filipe Soares, INESC TEC, Portugal
Carlos Moreira, INESC TEC and FEUP, Portugal
Bernardo Silva, INESC TEC, Portugal

73 **A Hierarchy of Models for Microgrids With Grid-Feeding Inverters**
Olaolu Ajala, University of illinois at Urbana-Champaign, USA
Murilo Almeida, Typhoon HIL, Inc., USA
Ivan Celanovic, Typhoon HIL, Inc., USA
Peter Sauer, University of illinois at Urbana-Champaign, USA
Alejandro Dominguez-Garcia, University of illinois at Urbana-Champaign, USA

S13 - Distributed state estimation and observability + Operation and control of AC/DC systems

August 31, Thursday - 11:00 – 12:30
Chair: Sandro Corsi, Italy

46 **Topology Estimation in Bulk Power Grids: Guarantees on Exact Recovery**
Deepjyoti Deka, Los Alamos National Laboratory, USA
Saurav Talukdar, University of Minnesota Twin Cities, USA
Michael Chertkov, Los Alamos National Laboratory, USA
Murti Salapaka, University of Minnesota Twin Cities, USA

83 **ROBUST POWER SYSTEM STATE & TOPOLOGY COESTIMATION BASED ON NOVEL INFORMATION THEORY CONCEPTS**
Rogério Meneghetti, Federal University of Santa Catarina, Brazil
Antonio Simões Costa, Federal University of Santa Catarina, Brazil
Vladimiro Miranda, INESC TEC and University of Porto, Portugal

102 **Protection of Converter Interfaced Generation and Microgrids**
Sakis Meliopoulos, Georgia Tech, USA
George Cokkinides, Georgia Tech, USA
Yu Liu, Georgia Tech, USA
Rui Fan, Georgia Tech, USA
Paul Myrda, Georgia Tech, USA
Evangelos Farantatos, Georgia Tech, USA

13 **Semi-implicit Formulation of Proportional-integral Controller Block with Non-windup Limiter According to IEEE Standard 421.5-2016**
Davide Fabozzi, DIgSILENT GmbH, Germany
Stefan Weigel, DIgSILENT GmbH, Germany
Bernd Weise, DIgSILENT GmbH, Germany
Fortunato Villella, Elia Grid International, Belgium

S14 - Risk, reliability and resilience

August 31, Thursday - 14:00 – 16:00
Chair: Anastasios Bakirtzis, AUT, Greece

3 **Survivability of the Electric Grid**
Eugene Litvinov, ISO New England, USA
Feng Zhao, ISO New England, USA

52 **Probabilistic Reliability Management Approach and Criteria for Power System Short-term Operational Planning**
Efthymios Karangelos, Universite de Liege, Belgium
Louis Wehenkel, Universite de Liege, Belgium

59 **Fast and Robust Determination of Power System Emergency Control Actions**
Michael Chertkov, Los Alamos National Laboratory, USA
Marc Vuffray, Los Alamos National Laboratory, USA
Sidhant Misra, Los Alamos National Laboratory, USA
Line Roald, Los Alamos National Laboratory, USA

96 **Identification and Handling of Critical Constraints in Time-Constrained SCOPF Analysis of Power Systems**
Jagadeesh Gunda, The University of Edinburgh, United Kingdom
Duo Fang, The University of Edinburgh, United Kingdom
Sasa Djokic, The University of Edinburgh, United Kingdom

97 **Predictive Asset Management Under Weather Impacts Using Big Data, Spatiotemporal Data Analytics and Risk Based Decision-Making**
Mladen Kezunovic, Texas A&M University, USA
Tatjana Dokic, Texas A&M University, USA

S15 - Large-scale integration of inverter-based energy resources

August 31, Thursday - 16:30 – 18:30

Chair: António Simões Costa, UFSC, Brazil

5 **Convex Relaxation of OPF in Multiphase Radial Networks with Delta Connections**
Changhong Zhao, National Renewable Energy Laboratory, USA
Emiliano Dall'Anese, National Renewable Energy Laboratory, USA
Steven Low, California Institute of Technology, USA

43 **A QCQP Approach for OPF in Multiphase Radial Networks with Wye and Delta Connections**
Ahmed S. Zamzam, University of Minnesota, USA
Changhong Zhao, National Renewable Energy Laboratory, USA
Emiliano Dall'Anese, National Renewable Energy Laboratory, USA
Nicholas D. Sidiropoulos, University of Minnesota, USA

45 **DG Integration and Power Quality Management in Railway Power Systems: A Distributed Approach**
Weijie Pan, Electrical and Computer Engineering Department, University of Florida, USA
Surya Dhulipala, Electrical and Computer Engineering Department, University of Florida, USA
Arturo Bretas, Electrical and Computer Engineering Department, University of Florida, USA

62 **Virtual Induction Machine Strategy for Converters in Power Systems with Low Rotational Inertia**
Uros Markovic, Power Systems Laboratory, ETH Zurich, Switzerland
Petros Aristidou, School of Electronic and Electrical Engineering, University of Leeds, United Kingdom
Gabriela Hug, Power Systems Laboratory, ETH Zurich, Switzerland

90 **An Analytical Approach for Loss Minimization and Voltage Profile Improvement in Distribution Systems with Renewable Energy Sources**
Seshadri Sravan Kumar Vanjari, Indian Institute of Technology, Hyderabad, India
Le Xie, Texas A&M University, USA
P. R. Kumar, Texas A&M University, USA

S16 - Wide-area security assessment and control II

September 1, Friday - 09:00 – 10:30

Chair: Thierry Van Cutsem, University of Liège, Belgium

70 **Study of nonminimum phase zeros in test power systems from wide-area control designs**
Mohammadreza Hatami, Washington State Unversity, USA
Vaithianathan "Mani" Venkatasubramanian, Washington State University, USA
Sandip Roy, Washington State University, USA
Patrick Panciatici, RTE, France
Thibault Prevost, RTE, France
Xavier Florent, RTE, France

79 **Using Demand Response to Shape the Fast Dynamics of the Bulk Power Network**
Kasra Koorehdavoudi, Washington State University, Pullman, WA, USA
Mengqi Yao, University of Michigan, Ann Arbor, MI, USA
Johanna L. Mathieu, University of Michigan, Ann Arbor, MI, USA
Sandip Roy, Washington State University, Pullman, WA, USA

93 **PMU-Based Monitoring of Power System Dynamics Using Maximum Lyapunov Exponents – TERNA Case Study**
Guanqun Wang, Burns & McDonnell, USA
Chen-Ching Liu, Washington State University, USA
Mahendra Patel, Electric Power Research Institute, USA
Evangelos Farantatos, Electric Power Research Institute, USA
Giorgio Giannuzzi, TERNA Rete Italia SpA, Italy
Roberto Zaottini, TERNA Rete Italia SpA, Italy

95 **On Networked VIP Monitoring of Voltage Stability**
Miroslav Begovic, Texas A&M University, USA
Aaqib Peerzada, Texas A&M University, USA
Reynaldo Nuqui, ABB, USA
Benjamin Picone, ERCOT, USA

S17 - Data analytics for power systems II

September 1, Friday - 11:00 - 12:00
Chair: João Peças Lopes, INESC TEC, Portugal

7 **Online Convex Optimization for Demand Response**
Antoine Lesage-Landry, University of Toronto, Canada
Joshua A. Taylor, University of Toronto, Canada

49 **The Validation of Synthetic Power System Cases**
Eran Schweitzer, Arizona State University, USA
Anna Scaglione, Arizona State University, USA
Robert Thomas, Cornell University, USA