

Purple Mountain Forum on Special Topic & MPCE 10th Anniversary Forum

Resilience and Flexibility of Modern Power Systems

Date: December 15, 2023 GMT 12:00-14:30



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2022 IF 6.3

Indexed by SCI, Ei, Scopus

Resilience and flexibility are becoming increasingly important topics in power systems. This is due to a combination of factors, including asset aging and obsolescence, higher operational uncertainty owing to increasing renewable energy source (RES) penetration rates, more frequent and more profound climate change-induced weather events, risks of cyber-attacks, and the distributed nature of new inverter-based resources such as rooftop PV, batteries and charging points. To share research findings and views on resilience and flexibility of modern power systems, Journal of Modern Power Systems and Clean Energy (MPCE) has invited five experts from China, the United States, Australia, and Greece to share their views at the MPCE 10th Anniversary Forum on December 15, 2023. Attendees will learn first-hand how power system resilience is affected by weather hazards, geomagnetic storms, and the deployment of distributed RES, and how power system resilience can benefit from microgrids, artificial intelligence (AI) and harnessing flexibility. The relevant information is as follows.

Welcome Speech: Prof. Yusheng Xue



Biography:

Academician of Chinese Academy of Engineering
The Honorary President of State Grid Electric Power Research Institute (SGEPRI)
Editor-in-Chief of MPCE

Chair: Prof. Antonio Gomez-Exposito



Biography: Antonio Gomez-Exposito is the Endesa Chair Professor at the University of Seville, where he leads the Electric Energy Systems Group. He has coauthored several books and a large number of papers dealing with computational issues in power system operation and control, renewables integration and smart T&D grids. He is an IEEE Life Fellow and the founder of the start-up Ingelectus. He is the Vice Editor-in-Chief of MPCE.

Prof. Zhaohong Bie



Title: Co-optimization and AI Application in Resilient Power Systems

Biography: Zhaohong Bie is Professor, the Executive Vice President of Xi 'an Jiaotong University, and the Director of State Key Laboratory of Electrical Insulation and Power Equipment. She is an IEEE Fellow and was selected as "China Highly Cited Scholar" by Elsevier from in 2020-2022. She presided over the formulation and implementation of the first microgrid standard in the world, which filled the gap and won the IEC 1906 Award twice (in 2017 and 2023).

Prof. Nikos Hatziargyriou



Title: Resiliency Enhancement by Microgrids

Biography: Nikos Hatziargyriou is with the National Technical University of Athens (NTUA), Professor in power systems, since 1995, and Professor Emeritus, since 2022. He is an IEEE Life Fellow. He is included in the 2016, 2017 and 2019 Thomson Reuters lists of top 1% most cited researchers and he is 2020 Globe Energy Prize laureate, the 2017 recipient of the IEEE/PES Prabha S. Kundur Power System Dynamics and Control Award and the 2023 recipient of the IEEE Herman Halperin Electric Transmission and Distribution Award.

Prof. Pierluigi Mancarella



Title: The Impact of Weather Hazards on the Grid: Risk Assessment and Mitigation

Biography: Pierluigi Mancarella is Chair Professor of Electrical Power Systems at The University of Melbourne (Australia) and Professor of Smart Energy Systems at The University of Manchester (UK). He is an IEEE Fellow. He also holds the 2017 veski Innovation Fellowship for his work on urban-scale virtual power plants and is a recipient of an international Newton Prize 2018 for his work on power system resilience in Chile.

Prof. Thomas J. Overbye



Title: Electric Grid Impacts of Geomagnetic Disturbances

Biography: Thomas J. Overbye is Professor and holder of the O'Donnell Foundation Chair III in the Department of Electrical and Computer Engineering at Texas A&M University (TAMU). He was the recipient of a University of Wisconsin-Madison College of Engineering Distinguished Achievement Award, the IEEE Power and Energy Society Outstanding Power Engineering Educator Award, and is a member of the US National Academy of Engineering.

Prof. Zongxiang Lu



Title: Coordinated Planning of Power System with High Share of Renewable Energy for Flexibility Improvement

Biography: Zongxiang Lu is Tenure Associate Professor with Tsinghua University (THU), the Executive Vice Director of Sichuan Energy Internet Research Institute at THU. He is the Fellow of IET. He has received a second prize of National Science and Technology Progress Award in 2019, and 23 provincial level scientific research awards.

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