IEEE EI² 2024

IEEE EI²

THE 8TH IEEE CONFERENCE ON ENERGY INTERNET AND ENERGY SYSTEM INTEGRATION

NOV. 29 - DEC. 02, 2024 | SHENYANG, CHINA

Conference Web: https://attend.ieee.org/ei2-2024

Panel Session 17

Dynamic Simulation Algorithms and Tools for New-Type Power Systems

INTRODUCTION AND TOPICS

The rapid integration of renewable energy, electric vehicles, and distributed energy resources has introduced significant complexity to new-type power systems, necessitating advanced dynamic simulation tools or platforms to ensure security, stability, resilience, reliability, etc. Power system simulations face challenges, due to the unique fast dynamics and non-linear behaviors of inverter-based resources (IBRs), which differ from conventional synchronous generators. The large-scale deployment of these resources requires simulations capable of handling multi-timescale phenomena, diverse system configurations, and high computational demands. This panel session will gather experts from academia, industry, and research institutions to discuss the challenges posed by these evolving systems, highlight state-of-the-art solutions, and explore future development trends. Topics will include modeling complexities of IBRs, multi-domain and multi-timescale simulations, and the need for computationally efficient methods. We will examine the latest algorithms, co-simulation techniques, and the role of data science as well as AI in accelerating simulations and analysis, while also considering future directions such as hybrid cloud-edge frameworks, real-time simulation tools, hardware-in-the-loop capabilities, and open-source platforms. This session aims to foster meaningful discussions on how cutting-edge simulation technologies can meet the emerging needs of new-type power systems.

PANEL SESSION CHAIR

Prof. Chengxi Liu Wuhan University, China liuchengxi@whu.edu.cn

Chengxi Liu is currently a Professor at the Department of Electrical Engineering and Automation, Wuhan University. He received his Ph.D. from Aalborg University, Denmark in 2013 and joined Wuhan University in 2019. He is an IEEE senior member and CIGRE member. He is the Associate Editor of CSEE JPES, MPCE and several international journals. His research interests include power system stability and control, simulation methods of power systems. He has led five national and provincial projects. He has published more than 100 papers, over 10 patents, including more than 50 SCI papers with google scholar citation more than 3100, and h-index 32.

PAPER SUBMISSION

For panel sessions, please contact panel chair through email before submission.

ORGANIZATIONS

IEEE PES Power & Energy Society® · 中国电机工程学会 CHINESE SOCIETY FOR ELECTRICAL ENGINEERING · 沈阳工业大学 SHENYANG UNIVERSITY OF TECHNOLOGY · 清华大学 Tsinghua University

For any questions, please contact the conference secretary, **Ms. Joyce Zhong**, via **EI2_2024@outlook.com**.