



IEI² 2023 Special Session **02**

Enhancing Grid Resilience through DERs and Active Distribution Networks

Introduction and topics

In light of the rising occurrence of extreme events, which include natural disasters, human-made accidents, and deliberate attacks, the stability and economic operation of power grids are under increasing threat. These challenges expose the shortcomings of conventional grid designs, prompting a rethinking of our prevailing practices and strategies. At this juncture, distributed energy resources (DERs) and active distribution networks have emerged as critical components. They not only exhibit adaptability but also represent a comprehensive approach for evolving a grid system with resilience, agility, and foresight. This Research Topic delves into the progressive capabilities of DERs and active distribution networks, underscoring their vital role in augmenting the resilience of microgrids and the broader distribution framework.

This Special Session invites original contributions analyzing the synergistic role of DERs within microgrids and active distribution networks, particularly their prompt and adaptive reaction during extreme events. We welcome papers addressing a wide range of topics related to these areas.

Topics of interests(including but not limited to):

- \\ Evaluating the effects of extreme events on DER-enabled grids.
- \\ Advanced technologies and integration strategies for DERs
- \\ Dynamic load management in active distribution networks
- \\ Load forecasting with a high penetration of DERs.
- \\ Flexible demand response strategies in the era of smart grids.
- \\ Energy storage's role in fortifying microgrid resilience.
- \\ Decentralized control methods such as advanced algorithms for distributed control in DER-rich environments.
- \\ Interplay of AI and Machine Learning in active grid operations.

Special Session Chairs



Yunqi Wang

Monash University



Zhengmao Li

Aalto University



Chaoxian Lv

China University of
Mining and Technology

Publication



Website

The conference papers will be published by the IEEEExplore website and indexed by EI, and high-quality papers will be recommended to Energy Conversion and Economics, Energy Internet, Journal of Modern Power Systems and Clean Energy (MPCE), CSEE Journal of Power and Energy Systems (CSEE JPES), Applied Energy, and others.

Submission Link: <https://easychair.org/conferences/?conf=ei22023>

Full Paper Submission Deadline: Oct. 31th, 2023

SPONSORS



中国电机工程学会
CHINESE SOCIETY FOR ELECTRICAL ENGINEERS



浙江大学
ZHEJIANG UNIVERSITY

海南研究院
Hainan Institute, China



清华大学
电机工程与应用电子技术系
Department of Electrical Engineering
Tsinghua University



大连理工大学
DALIAN UNIVERSITY OF TECHNOLOGY



能源互联网创新研究院
Energy Internet Research Institute
Hangzhou University



清华大学
深圳国际研究生院
Tsinghua Shenzhen International
Graduate School

ORGANIZERS



浙江大学
ZHEJIANG UNIVERSITY



三亚纵横能源研究院
Sanya Global Energy Research Institute



浙江大学电气工程学院
College of Electrical Engineering, Zhejiang University

CO-ORGANIZERS



郑州轻工业大学
ZHENGZHOU UNIVERSITY OF LIGHT INDUSTRY



International Copper
Association Asia
Copper Alliance



Conference Secretary: Ms. Joyce Zhong

Email: ei2@youngac.cn

Telephone: +86 18628263876