Special Session 33: AI-driven Analysis and Decision-making Technologies for Power Grids and Integrated Energy Systems

Session Organizers：

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Brief Description of the Session Thematic:

Owing to the complexity of power systems and integrated energy systems, the utilization of AI technology for analysis and decision-making is becoming increasingly crucial. This panel will deeply explore how AI contributes to the modeling, simulation, security assessment, optimal dispatch, and collaborative control of power grid and integrated energy systems. By sharing cutting-edge research findings and practical experiences, it will dissect the challenges such as data quality and algorithm adaptability faced by AI applications, thereby providing a communication platform for promoting the intelligent transformation in the energy field.

Topics and Keywords:

This session will consist of lots of topics such as

1. Modelling and simulation using AI
2. Stability assessment and control based on AI
3. Optimization driven by the AI
4. AI-driven energy management system
5. AI for energy science research
6. Large language model applications in power system and integrated energy system

This session aim is to gather leading researchers and practitioners, thus providing an authoritative survey of the state-of-the-art in this vibrant interdisciplinary field. We welcome original research articles, review papers and case studies showing how AI can be used in the electrical power systems and integrated energy system in new ways of applications which allow academic-professional-industry-policymaker relationships foster collaboration to share their experiences.

Keywords: Electrical power systems; Integrated energy system; Artificial intelligence; Machine learning; Decision-making; Optimization; Control systems; Data analytics; Energy efficiency; Sustainability; Intelligent systems; Low-carbon; AI for ScienceLarge language model