

Special Session on Data-analytics for Power System Operation, Control, and Enhanced Situational awareness

Session Chairs:

- 1) Dr Yan Xu, Nanyang Technological University, Singapore
- 2) Dr Ke Meng, University of New South Wales, Sydney, Australia
- 3) Dr Jing Qiu, University of Sydney, Sydney, Australia

Scope of the session:

Along with the Smart Grid development, modern power systems are entering a “data-intensive” era, where a vast volume of power grid data is collected through advanced sensing and communication technologies, such as smart metering data, phasor measurement data, as well as meteorological data (e.g., wind speed and solar irradiance) related to renewable power generation, etc.

Such data contains comprehensive information about the power system covering equipment’s health status, power grid’s static and dynamic characteristics, renewable power generation, load customers’ electricity usage pattern, etc. Therefore, advanced data-analytics techniques are needed to convert such data to knowledge for practical application.

This special session aims to present the state-of-the-art research works on data-analytics for power system’s operation, control, and situational awareness. This special session will consist of 5–8 presentations (each for 20mins) from a mix of international experts in the above research topics.

Topics of interest include but are not limited to:

- Smart grid data compression, detection, fusion, storage and information management
- Data management for advanced metering infrastructure
- Measurement-based power system modeling
- PMU and micro-PMU applications in power grids
- Data-driven renewable power generation forecasting
- Fraud detection in smart meter data
- Predictive data-based asset health monitoring and management
- Residential customer load pattern recognition
- Data-driven demand response and dynamic pricing
- Wide-area monitoring and visualization of smart transmission system
- Data-driven enhanced situational awareness of power system dynamics

Paper Submission:

Interested authors need to submit their manuscripts, prepared based on the conference template, and submit it via the conference’s online submission portal. The authors need to select the **special session track** when submitting their manuscripts on the online portal.