Special Issue

Power Systems Stability in Smart Grid Era

Message from the Guest Editors

The adoption of modern smart grid technologies, energy storage, and renewable energy resources (RERs) is among the most effective solutions for achieving a green and sustainable energy system. However, the high penetration of these non-dispatchable RERs imposes many challenges. Indeed, while many research works have attempted to address the power system stability challenges in the last few years, many questions remain unanswered, such as how power system stability can be maintained within these smart grid technologies considering both steady-state and transient stability, as well as voltage and frequency stability. In this context, novel approaches for stability enhancement should be developed for power systems in the era of smart grids. Potential topics include but are not limited to the following:

- Data-driven and machine learning approaches for predicting smart grids stability;
- Steady-state stability enhancement of smart grids;
- Transient/dynamic stability enhancement of smart grids;
- Voltage and frequency stability assessment techniques for smart grids;
- Optimal planning and operation methods of smart grid considering its stability.

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Deadline for manuscript submissions

closed (31 May 2023)

Electronics

an Open Access Journal by MDPI

Impact Factor 2.6
CiteScore 6.1

mdpi.com/si/144019

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