Special Issue

Machine Learning Approaches to Power System Flexibility, Stability and Control for Renewable Energy Penetration

Message from the Guest Editors

Along with smart grid development, modern power systems are also entering a "data-intensive" era, where a large body of data is collected through advanced sensing and communication technologies. This multi-scale dataset contains comprehensive information about the power system's static and dynamic characteristics, renewable generation of energy, customers' power consumption patterns, etc. If they are effectively used, enhanced situation awareness can be achieved. However, this requires the development of approaches for the optimal utilization of available data and their effective use in ensuring the timely obtainment of essential information about the system's behaviour. Data-driven methods allow advanced data analytics to extract the system's actual operating characteristics from the multi-scale data and turn them into practical information. This Special Issue is devoted to the collection of state-of-the-art ideas in data analytics for power system stability analysis and control, and seeks to pave the way for smarter and more resilient power systems with a high level of renewable energy integration.

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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