Complexity

Special Issue on
Complex Optimization and Simulation in Power Systems

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CALL FOR PAPERS

Deregulation of energy markets has transformed the way of delivering power to electricity customers by introducing serious competition. Meanwhile, the rise of smart grid, the ever-increasing integration of renewable generation, and the likely massive penetration of electric vehicles is challenging the power system industry as never before. Dealing with these new challenges while being able to create innovative and prosperous business ideas is a key to survival in the advent of smartening power systems.

In view of this, a comprehensive approach for design and operation of modern power system is required. The diversity of new players (e.g., aggregators or retailer companies controlling the entire system) and the disruption made by new technologies can only be evaluated with adequate simulation tools and optimization models.

We invite researchers from academia and industry to submit original and unpublished articles concerning recent advances on simulation tools in complex power systems. Also, we welcome papers proposing new methods, models, and strategies to deal with complex optimization problems in power systems.

Potential topics include but are not limited to the following:

- Addressing uncertainty of distributed generation and electric vehicles in energy scheduling
- Comprehensive energy network for smart grid (e.g., peer-to-peer energy problems)
- Centralized and decentralized models for energy scheduling
- Computational intelligence to cope with complex models in power systems
- Distributed optimization approaches for energy scheduling in smart grids
- Electricity market simulation considering flexibility markets
- Energy management in buildings considering electric vehicles and distributed generation
- Large-scale energy resource scheduling in smart grid (thousands of resources)
- Forecasting and estimation algorithms to tackle uncertainty in smart grid
- Integration of demand response in power systems
- Large-scale penetration of electric vehicles
- Multiagent systems for complex simulations in smart grid/power systems
- Planning and expansion problems in power systems considering electric vehicles integration

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/complexity/cosps/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor
João Soares, Polytechnic Institute of Porto, Porto, Portugal
joaps@isep.ipp.pt

Guest Editors
Fernando Lezama, National Institute of Astrophysics, Optics and Electronics (INAOE), Puebla, Mexico
f.lezama@inaoep.mx

Hugo Morais, Électricité de France R&D, Paris, France
hugo.morais@edf.fr

Tiago Pinto, University of Salamanca, Salamanca, Spain
tpinto@usal.es