Special Session VII

Special Session Basic Information:

专栏题目 Session Title 中文: 高比例新能源电力系统的风险评估与优化

英文: Risk Assessment and Optimization of Power Systems Integrated with High Penetration

of Renewable Energies

专栏介绍和征稿主题

Introduction and topics

中文:在全球能源清洁化转型加速与"双碳"战略深入推进的背景下,高比例新能源占比已成为新型电力系统的核心特征。风电、光伏等新能源的大规模并网,显著增加了电力系统的波动性、随机性和间歇性,改变了电力系统的运行边界与动态特性,对传统风险评估、优化规划和优化调度方法提出严峻挑战。本专栏以"高比例新能源电力系统的风险评估与优化调度"为主题,聚焦新型电力系统的多维运行风险评估、多时间尺度协同调度、负荷侧灵活性挖掘等关键问题,旨在探讨如何通过机理研究和机制设计,推动构建安全、经济、低碳的新型电力系统。

英文: Amid the accelerating global transition toward decarbonization and the deepening implementation of "dual carbon" strategies, power systems with high penetration of renewable energy have emerged as a defining feature of modern energy infrastructure. The large-scale grid integration of renewable energy sources (e.g., wind and solar) has significantly intensified the volatility, stochasticity, and intermittency of power systems, altering their operational boundaries and dynamic characteristics, thereby posing significant challenges to conventional risk assessment and optimal methodologies. This special issue focuses on "Risk Assessment and Optimization of Power Systems Integrated with High Penetration of Renewable Energies", addressing critical challenges such as multi-dimensional operational risk assessment, multi-timescale coordinated dispatch, and flexibility exploration on the demand side. It aims to explore how mechanism-driven research and institutional design can advance the development of secure, economical, and low-carbon modern power systems.

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Chair's Brief Biography

中文: 胡博,2010年在重庆大学获得电气工程博士学位,目前担任重庆大学电气工程学院的教授。他的研究兴趣包括电力系统可靠性、电力系统优化。

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Organizer's Brief Biography

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