

Special Session II

Special Session Basic Information:

专栏题目 Session Title	中文：面向智算负荷激增的电力-算力协同关键技术 英文：Key Technologies of Power-Computing Synergy for the Surge in Intelligent Computing Load
专栏介绍和征稿主题 Introduction and topics	<p>中文：随着人工智能等数字技术的迅猛发展，智算中心作为数字经济的核心基础设施迎来爆发式增长，其算力需求的激增同步带来严峻的电力消耗挑战。智算负荷兼具高功率密度、强波动性与时空分布不均等特征，传统供能模式已难以匹配智算中心的动态用能需求，电力-算力协同不足成为制约智算产业高质量发展的关键瓶颈。本专栏旨在汇聚相关领域顶尖专家学者与企业技术骨干的最新研究成果及实践经验，聚焦电力-算力协同的核心理论、关键技术、工程应用与未来发展趋势，推动电力系统与算力系统的深度融合及协同优化。诚征聚焦以下方向的原创研究成果与实践经验：协同优化理论与建模、电力系统灵活调控、智算中心绿色供能、协同调度算法、示范工程案例及未来产业发展政策标准探讨等。</p> <p>英文：With the rapid evolution of artificial intelligence and other digital technologies, intelligent computing centers are undergoing explosive growth. Characterized by high power density, significant volatility, and uneven spatiotemporal distribution, intelligent computing centers render traditional energy supply models inadequate in meeting their dynamic energy requirements. Insufficient power-computing synergy has thus become a bottleneck restricting the high-quality development of the intelligent computing industry. This column aims to showcase the latest research findings and practical insights focusing on the core theories, key technologies, engineering applications, and future development trends of power-computing synergy. Its objective is to promote the in-depth integration and collaborative optimization of power systems and computing systems. The scope of coverage includes collaborative optimization theories and modeling, flexible power system regulation, green energy supply for intelligent computing centers, collaborative scheduling algorithms, demonstration projects, and deliberations on future industry policies and standards.</p>

Special Session Chair(s):

	姓名 Name	Min Chen
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	Organizer's Brief Biography	

中文：陈敏，北京交通大学电气工程学院副教授、硕士生导师，智慧能源电力系统团队。清华大学电机系博士后（2021.07-2025.06），入选惠妍人才计划，合作导师为郭庆来教授，孙宏斌院士团队。个人主页：<https://faculty.bjtu.edu.cn/10329/>。

主要从事新型负荷侧调控研究，尤其聚焦算力-电力协同场景下的算力中心负荷灵活性挖掘。主持国家自然科学基金青年基金项目“考虑数据中心负荷时空可转移特性的算力-电力协同优化研究”（结题获评“优秀”）等项目。发表电气领域顶级期刊论文 10 余篇（第一作者 7 篇）；以第二完成人发布《算力电力协同：思考与探索白皮书（2025）》，获 2025 数字中国创新大赛一等奖；作为骨干申报“支撑电力-算力协同的数据中心园区综合能量管理技术”，入选第五批《国家重点推广的低碳技术目录》。

英文：Dr. Min Chen is currently an Associate Professor and Master's Supervisor in the School of Electrical Engineering at Beijing Jiaotong University, affiliated with the "Smart Energy Enhanced Power Systems" Research Group. She was a Postdoctoral Researcher in the Department of Electrical Engineering at Tsinghua University (July 2021 – June 2025), selected into the Huiyan Talent Program, under the supervision of Prof. Qinglai Guo and affiliated with Academician Sun Hongbin's Team. Personal Homepage: <https://faculty.bjtu.edu.cn/10329/>.


Her main research focuses on new-type load-side regulation, with a particular emphasis on the excavation of load flexibility in computing centers under power-computing synergy scenarios. She has presided over the National Natural Science Foundation of China (NSFC) Program (concluded with an evaluation of "Excellent"). She has published more than 10 papers in top journals in the electrical engineering field (7 as the first author); served as the second contributor to the release of the "White Paper on Power-Computing Synergy: Reflections and Explorations (2025)", and won the First Prize of the 2025 Digital China Innovation Competition.

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Organizer's Brief Biography

中文：李鹏华，华北电力大学自动化系，讲师，硕士生导师。2020-2024 年，在清华大学电机系电力系统调度自动化课题组从事博士后工作，合作导师为吴文传教授，孙宏斌院士团队。研究方向包括主动配电网优化控制、规划，电力系统稳定性分析等。主持国家自然科学基金青年基金 1 项、中央高校面上项目 1 项；参与了国家重点研发计划、国家自然科学基金以及国家电网、南方电网等企业组织的多项课题。发表 SCI/EI 收录论文 20 余篇，发明专利 10 余项。

英文：Dr. Penghua Li is currently a Lecturer in the North China Electric Power University. Prior to this appointment, she was a Postdoctoral Researcher in the Department of Electrical Engineering at Tsinghua University from July 2021 to June 2025, under the supervision of Prof. Wenchuan WU. Her main research direction is operation and optimization control of new distribution systems. Dr. Li has hosted National Natural Science Foundation of China (NSFC) Program, has participated in multiple projects such as the National Natural Science Foundation and the State Grid Corporation of China's technology projects, published over 20 papers and 10 invention patents, and served as a reviewer for internationally renowned English journals such as IEEE TSG/TSE.

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Organizer's Brief Biography

中文：王璇，华北电力大学电力工程系，讲师，硕士生导师。2020-2024年，在清华大学电机系 EILAB 课题组从事博士后工作，合作导师为康重庆教授和钟海旺副教授。研究方向包括电力系统安全防御和灾害控制，新型电力系统中储能的优化运行和商业模式。发表 SCI/EI 收录论文 20 余篇；曾主持中国博士后科学基金、河北省自然科学基金、中央高校面上项目和青年项目各 1 项；参与了国家重点研发计划、国家自然科学基金、国家能源局项目、国际合作项目，以及国家电网、南方电网等企业组织的多项课题。

英文：Xuan Wang is a Lecturer in the Department of Electrical Engineering at North China Electric Power University (NCEPU). She was a Postdoctoral Researcher in the EILAB within the Department of Electrical Engineering at Tsinghua University from 2020 to 2024. Her research focuses on power system security defense and disaster control, as well as the optimal operation and business models of energy storage in new power systems. She has published more than 20 papers indexed by SCI/EI. She has led four research projects, with funding sources including the China Postdoctoral Science Foundation, the Natural Science Foundation of Hebei Province, and the Fundamental Research Funds for the Central Universities. She has participated in the National Key R&D Programs, the National Natural Science Foundation of China, the National Energy Administration, international collaborative projects, and multiple industry-sponsored research projects from organizations such as SGCC and CSG.