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师资队伍

电气工程系

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电气电子国家级实验教学中心

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电气与自动化实验中心

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侯恺

Date: 2020年08月01日

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学科专业: 电气工程及其自动化

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主要经历:

- (1) 2019.12-至今, 天津大学, 电气自动化与信息工程学院, 电气工程系, 副教授
- (2) 2019.05-至今, 天津大学, 电气自动化与信息工程学院, 电气工程系, 博士生导师
- (3) 2018.05-至今, 天津大学, 电气自动化与信息工程学院, 电气工程系, 硕士生导师
- (4) 2017.03-2019.11, 天津大学, 电气自动化与信息工程学院, 电气工程系, 博士后
- (5) 2016.11-2019.11, 天津大学, 电气自动化与信息工程学院, 电气工程系, 讲师
- (6) 2013.09-2016.06天津大学电气与自动化工程学院, 工学博士
- (7) 2011.09-2016.06天津大学电气与自动化工程学院, 工学硕士
- (8) 2007.09-2011.06天津大学电气与自动化工程学院, 工学学士

主要研究方向:

- (1) 电力系统可靠性评估及韧性评估
- (2) 综合能源系统可靠性评估及韧性评估
- (3) 电力-交通耦合系统可靠性评估

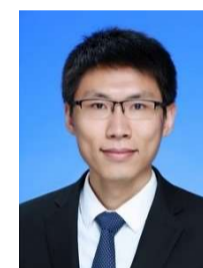
主要科研项目:

- [1] 2018.01.01-2020.12.31.国家自然科学基金青年项目“计及多能源耦合特性的区域综合能源系统可靠性评估研究”, 项目负责人
- [2] 2018.04.01-2021.03.31.天津市自然科学基金青年项目“基于影响增量的电网运行风险快速评估技术”, 项目负责人
- [3] 2019.04.01-2020.03.31.中国博士后科学基金特别资助项目“计及供热慢动态过程的区域综合能源系统运行风险评估”, 项目负责人
- [4] 2018.04.01-2020.3.31.中国博士后科学基金面上一等资助项目“考虑规模化电采暖的电网运行风险快速评估与防控技术”, 项目负责人
- [5] 2019.01.01-2019.12.31.天津大学自主创新基金北洋青年骨干教师项目“计及规模化电能替代的电网运行风险快速评估与防控技术”, 项目负责人
- [6] 2017.06.01-2017.12.31.国网天津市电力公司科技项目“变压器抗短路能力校核”, 项目负责人
- [7] 2017.01.01-2017.07.31.平安开诚智能安全装备有限责任公司科技项目“煤矿智能配电网建设体系研究”, 项目负责人
- [8] 2017.01.01-2018.12.31.国网北京市电力公司科技项目“适应电能替代规模化应用的配电网建设改造关键技术研究”, 项目负责人
- [9] 2018.01.01-2019.12.31.国网瑞盈电力科技北京有限公司科技项目“基于分布式移动储能的配电网灵活性提升技术研究及应用”, 项目负责人
- [10] 2019.08.01-2019.12.31.国网天津市电力公司科技项目“大规模新能源消纳接入的天津电网适应性研究”, 项目负责人

代表性论著、学术著作:

学术论文:

- [1] K. Hou, X. Xu, H. Jia*, X. Yu, T. Jiang, B. Shu, K. Zhang. A Reliability Assessment Approach For Integrated Transportation and Electrical Power Systems Incorporating Electric Vehicles, IEEE Transactions on Smart Grid, 2018, 9(1): 88-100. (SCI一区, ESI 1%高被引)



- [2] **K. Hou**, H. Jia*, X. Xu, Z. Liu, Y. Jiang. A Continuous Time Markov Chain based Sequential Analytical Approach for Composite Power System Reliability Assessment, *IEEE Transactions on Power Systems*, 2016, 31(1): 738-74.(SCI二区)
- [3] Y. Lei, P. Zhang,**K. Hou***, H. Jia, Y. Mu, B. Sui. An Incremental Reliability Assessment Approach for Transmission Expansion Planning, *IEEE Transactions on Power Systems*, 2017, 33(3): 2597-2609.(SCI二区)
- [4] Y. Lei,**K. Hou***, Y. Wang, H. Jia, P. Zhang, Y. Mu. A New Reliability Assessment Approach for Integrated Energy Systems: Using Hierarchical Decoupling Optimization Framework and Impact-increment Based State Enumeration Method, *Applied Energy*, 2018, 210: 1237-1250.(SCI一区)
- [5] X. Liu,**K. Hou***, H. Jia, J. Zhao, L. Mili, et al, A Resilience Assessment Approach for Power System from Perspectives of System and Component Levels, *International Journal of Electrical Power and Energy Systems*, 2020. Accepted.(SCI二区)
- [6] B. Sui,**K. Hou***, H. Jia, Y. Mu, X. Yu. Maximum Entropy Based Probabilistic Load Flow Calculation for Power System Integrated with Wind Power Generation, *Journal of Modern Power Systems and Clean Energy*, 2018, 6(5): 1042-1054.(SCI二区)
- [7] Y. Sun,**K. Hou***, H. Jia, et al, "An Incremental-Variable-Based State Enumeration Method for Power System Operational Risk Assessment Considering Safety Margin," *IEEE Access*, 2020. Accepted.(SCI二区)
- [8] W. Wei, Y. Zhou, J. Zhu,**K. Hou***, H. Zhao, Z. Li, T. Xu. Reliability Assessment for AC/DC Hybrid Distribution Network with High Penetration of Renewable Energy, *IEEE Access*, 2019, 7: 153141-153150. (SCI二区)
- [9] **K. Hou**, H. Jia*, X. Li, X. Xu, Y. Mu, T. Jiang, X. Yu. Impact-increment Based Decoupled Reliability Assessment Approach for Composite Generation and Transmission Systems, *IET Generation, Transmission & Distribution*, 2017, 12(3): 586-595. (SCI三区)
- [10] Z. He,**K. Hou***, Y. Wang, H. Jia, et al. Reliability Modeling for Integrated Community Energy System Considering Dynamic Process of Thermal Loads[J]. *IET Energy Systems Integration*, 2019, 1(3): 173-183. (SCI待检索)
- [11] L. Liu, D. Wang*,**K. Hou***, H. Jia, et al, 2020. Region model and application of regional integrated energy system security analysis, *Applied Energy*, 2020, 260. (SCI一区)
- [12] D Wang*, Q Hu, H Jia,**K Hou***, et al, Menghua Fan. Integrated demand response in district electricity-heating network considering double auction retail energy market based on demand-side energy stations. *Applied Energy*, 2019, 248: 656-678. (SCI一区)
- [13] D Wang*, Y Zhi, H Jia,**K Hou***, et al. Optimal scheduling strategy of district integrated heat and power system with wind power and multiple energy stations considering thermal inertia of buildings under different heating regulation modes.*Applied Energy*, 2019, 240: 341-358.(SCI一区)
- [14] Lukun Ge,**Kai Hou***, Hongjie Jia,Lewei Zhu,Yunfei Mu,Xiaodan Yu,Dan Wang. "A distribution system reliability assessment approach considering multi-faults by impact increment based Monte Carlo", 2019 International Conference on Applied Energy, 2019. August 12-15, Stockholm, Sweden. (EI)
- [15] Ningyuan Zhao,**Kai Hou***, Xiaonan Liu , Hongjie Jia,Lewei Zhu,Dan Wang ,Yunfei Mu,Xiaodan Yu. "A quantitative resilience index of power systems under extreme ice disasters", 2019 International Conference on Applied Energy, 2019. August 12-15, Stockholm, Sweden. (EI)
- [16] Xiaonan Liu,**Kai Hou***, Hongjie Jia, Lewei Zhu, Dan Wang, Yunfei Mu, Xiaodan Yu, Zhe He. "The impact-increment state enumeration method based resilience assessment approach of power system under windstorms", 2019 International Conference on Applied Energy, 2019. August 12-15, Stockholm, Sweden. (EI)
- [17] Xiaonan Liu,**Kai Hou***, Hongjie Jia, Yunfei Mu, Shiqian Ma, Fei Wang, Yunkai Lei. "The Impact-increment State Enumeration Method Based Component Level Resilience Indices of Transmission System", International Conference on Applied Energy, 2018. August 22-25, 2018, Hong Kong China. (EI)
- [18] Zhe He,**Kai Hou***, Yue Wang, Xiaonan Liu, Yunkai Lei, Hongjie Jia, Xiaodan Yu, Lewei Zhu. "A reliability assessment approach for Integrated Community Energy System based on hierarchical decoupling optimization framework", IEEE PES General Meeting, 2018. August 5-9, 2018, Portland, Oregon, USA. (EI)
- [19] Yue Wang, Zhe He,**Kai Hou***, Hongjie Jia, Hongtao Li, Qiang Rao. "A Computational Approach for Modeling, Evaluating and Optimizing the Reliability of Integrated Community Energy Systems",IEEE Conference on Energy Internet and Energy System Integration (EI2), 2017. November 26-28, 2017, Beijing, China. (EI)
- [20] Xiaonan Liu,**Kai Hou***, Hongjie Jia, Yunfei Mu, Xiaodan Yu, Yue Wang, Jialin Dong. "A Quantified Resilience Assessment Approach for Electrical Power Systems Considering Multiple Transmission Line Outages" IEEE Electrical Power and Energy Conference (EPEC), 2017. October 22-25, 2017, Saskatoon, Saskatchewan, Canada. (EI)
- [21] Yue Wang,**Hou Kai***, Hongjie Jia, Yunfei Mu, Lewei Zhu, Hongtao Li, Qiang Rao. "Decoupled Optimization of Integrated Energy System Considering CHP Plant Based on Energy Hub Model", International Conference on Applied Energy, 2017. August 21-24, Cardiff, UK. (EI)
- [22] Yunkai Lei,**Hou Kai***, Hongjie Jia, Pei Zhang, Yunfei Mu, Rimjusong, Lewei Zhu. "An Impact-Increment Based Monte Carlo Simulation Reliability Assessment Approach for Transmission Systems", IEEE PES General Meeting, 2017. July 16-20, 2017, Chicago, IL USA. (EI)
- [23] **Kai Hou**, Hongjie Jia*, Xiandong Yu, Lewei Zhu, Xiandong Xu, Xue Li. "An Impact Increment-Based State Enumeration Reliability Assessment Approach and Its Application in Transmission Systems", IEEE PES General Meeting, 2016. July 17-21, Boston, MA, USA. (EI)
- [24] **Kai Hou**, Hongjie Jia*, Xiaodan Yu, Yawen Li, Chang Xie, Jianfeng Yan. "Composite Generation and Transmission System Reliability Assessment Using Impact Increment-based State Enumeration Method", International Conference on Probabilistic Methods Applied to Power Systems (PMAPS), 2016. October 16-20, Beijing, China. (EI)
- [25] Wei wei*, Zhou Yitong, Zhu Jie,**Hou Kai**, Zhao He, Li Zijin, Xu Tao. "Reliability evaluation of ac/dc hybrid distribution networks with operation characteristics of VSC converters considered", 2019 International Conference on Applied Energy, 2018. August 12-15, Stockholm, Sweden. (EI)
- [26] Yong Zhang, Bengang Wei, Zhaojie Liu, Tangyun Xu, Xiaonan Liu*, **Kai Hou**."Component Importance Indices of Transmission Systems Based on The Impact-increment Based State Enumeration Method", 2019 IEEE PES Innovation Smart Grid Technologies Asia, 2019. May 21-24, 2019, Chengdu, China. (EI)
- [27] Shiqian Ma, Tianchun Xiang, Yue Wang , Xudong Wang, Yue Guo,**Kai Hou***, Yunfei Mu, Hongjie Jia."An Approach to Propose Optimal Energy Storage System in Real-Time Electricity Pricing Environments",International Conference on Intelligent Computing for Sustainable Energy and Environment, 2018. September 21-23, Chongqing, China.(EI)
- [28] Xiandong Xu,**KaiHou**, Hongjie Jia*, Xiaodan Yu. "A Reliability Assessment Approach for the Urban Energy System and Its Application in Energy Hub Planning", IEEE PES General Meeting, 2015. July 26-30, Denver, CO, USA. (EI)

- [29] Dongxu Lu, **Kai Hou**, Yuan Zeng*, Wei Wei, Lingxu Guo. "A Risk Assessment Approach for Dispatching Operations Based on Critical Equipment search", IEEE PES General Meeting, 2015. July 26-30, Denver, CO, USA. (EI)
- [30] Guangming Fan, Lingxu Guo, Wei Liang, Hongtao Qie, Dongxu Lu, **Kai Hou**, Yuan Zeng*. "A risk assessment approach on electrical substation for dispatching operation", TENCON 2015 - 2015 IEEE Region 10 Conference. IEEE, 2015:1-5. November 1-4, 2015, Macao, China. (EI)
- [31] **侯恺**,林主成*,贾宏杰,雷云凯,林哲俊,刘晓楠,穆云飞. "可靠性与经济性协调的城市配电网联络线优化规划方法",天津大学学报, 2019. (EI)
- [32] **侯恺**,贾宏杰*,姜涛,张沛,李鹏. "输电网规划方案灵活性评估的新方法",天津大学学报, 47(11), pp. 1023-1030, 2014. (EI)
- [33] **侯恺**,曾沅,贾宏杰,卢恩,刘嘉宁,呼士召. "基于马尔可夫链的调度操作流程风险评估及优选方法",电力系统自动化, 39(19), pp. 142-148, 2015. (EI)
- [34] 隋冰彦,**侯恺***,贾宏杰,穆云飞.基于最大熵原理的含风电和电动汽车电力系统概率潮流.电网技术, 2016(12), pp. 3696-3705, 2016. (EI)
- [35] 李雪*,姜涛,李国庆,贾宏杰,**侯恺**. "基于相关增益的电压稳定关键注入区域识别",电工技术学报,2018,33(04):739-749. (EI)
- [36] 何哲,李洪涛,**侯恺***,郝良.基于电热泵自调节的农村配网电压优化控制策略.电力系统及其自动化学报, 2019. (核心)
- [37] 张弛,唐庆华,严玮,魏菊芳,**侯恺***,王越,何哲. "基于粒子群-内点混合优化算法的区域综合能源系统可靠性评估",电力建设, 2018, 33(04) :739-749. (核心)
- [38] 闫卫国,蒋菱,陈晓祺,贾宏杰,肖迁,赵帅,**侯恺***. "孤立运行的低压微电网改进下垂控制策略",电力系统及其自动化学报. 2018, 30(6) :49-56. (核心)
- [39] 张鑫,王楠,王伟,冯军基,刘晓楠*,**侯恺**.考虑台风天气的电力系统韧性评估.电力系统及其自动化学报, 2019. (核心)

学术论著:

- [1] 中国电工技术学会《2018-2019电气工程学科发展报告》编写组秘书
- [2] 中国电机工程学会《电工数学专业发展报告》编写组成员
- [3] 中国电机工程学会《分布式发电及智能配电专业发展报告》编写组成员

专利:

- [1] 专利名称: An Impact Increments-Based State Enumeration Reliability Assessment Approach and Its Application in Transmission Systems, 发明专利, 申请号: PCT/CN2015/088389 (申请中)
- [2] 专利名称: A Lagrange Multiplier Based Optimal Load Curtailment Algorithm and Its Application, 发明专利, 申请号: PCT/CN2019/103669 (申请中)
- [3] 专利名称: 一种基于影响增量的状态枚举可靠性评估方法及其装置, 发明专利, 专利号: ZL201510456039.9 (已授权)
- [4] 专利名称: 一种面向电网调度操作的实时风险评估方法, 发明专利, 专利号: CN201510409860.5 (已授权)
- [5] 专利名称: 一种考虑多重信息因素的ECPS连锁故障风险评估方法, 发明专利, 专利号: CN201610939306.2 (已授权)
- [6] 专利名称: 基于概率风险评估的电力系统规划方案灵活性评估方法, 发明专利, 专利号: CN201310249767.3 (已授权)
- [7] 专利名称: 一种基于拉格朗日乘子的最优负荷削减算法及其应用, 发明专利, 申请号: 2019108050957. (申请中)
- [8] 专利名称: 一种分层解耦的电气热综合能源系统最优负荷削减量方法, 发明专利, 申请号: 2019107629318. (申请中)
- [9] 专利名称: 考虑热负荷动态特性的区域综合能源系统可靠性评估方法, 发明专利, 申请号: 201810704236.1. (申请中)
- [10] 专利名称: 能源系统可靠性指标的确定方法及装置、存储介质, 发明专利, 申请号: CN108038594A (申请中)

主要讲授课程:

- (1) 电力系统分析 (本科生)
- (2) 城市电力系统规划 (本科生)

主要学术成就、奖励及荣誉:

- (1) 2019: 天津市"131"创新型人才培养工程第三层次
- (2) 2019: 中国电力科学技术一等奖 (排名14)
- (3) 2019: 天津大学电气自动化与信息工程学院本科生优秀班主任
- (4) 2018: 天津大学北洋学者·青年骨干教师
- (5) 2017: 天津大学优秀博士毕业论文
- (6) 2017: 天津大学优秀毕业论文指导教师
- (7) 2016: 南方电网科学研究院专利二等奖
- (8) 2016: PMAPS Roy Billinton Student Paper Award,:

其他 (社会兼职等) :

- (1) 2018.05: 分布式发电及智能配电专业委员会, 综合能源系统学组秘书
- (2) 2018.01: 天津市电源学会副秘书长
- (3) 2015.08: IEEE Member
- (4) 2015.08: IEEE PES Member
- (5) 2015.08: IEEE RRPAA Subcommittee成员
- (6) 2015.01: 天津市电机工程学会会员

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