Xin Fang

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Education

- Ph.D. in Electrical Engineering, University of Tennessee, Knoxville, 2016
- M.S. in Electrical Engineering, China Electric Power Research Institute, 2012
- B.S. in Electrical Engineering, Huazhong University of Science and Technology, 2009

Professional Experience

- August 2025 - present: Assistant Professor, University of South Carolina
- August 2022 - August 2025: Assistant Professor, Mississippi State University
- July 2017 - August 2022: Senior Researcher, National Renewable Energy Laboratory
- July 2016 - July 2017: Power System Engineer, GE Grid Solutions

Current Research Projects

- **Accelerating Grid Resilience: Foundational Work for Power Distribution Systems Digital Twins** - USC Co-PI, INL, Fang's share: $50,000, Total: $500,000, 2025-010-01 to 2026-09-30
- **Unlocking Dynamic Thermal Rating Benefits for Distribution Systems** - USC Co-PI, NREL, Fang's share: $50,000, Total: $250,000, 2025-01-01 to 2025-06-30
- **Digital Twin Addressing Multi-Scale Operational Needs of IBR-rich Grids (DIAMOND)** - USC Co-PI, DOE-SETO/NREL, Fang's share: $330,000, Total: $3,200,000, 2024-10-01 to 2027-09-30
- **HVDC-Learn: Modular Education & Workforce Training in High Voltage Direct Current Electric Transmission** - MSU Co-PI, DOE/WETO, Fang's share: $112,500, Total: $700,000, 2024-05-01 to 2027-04-30
- **Collaborative Research: CyberTraining: Pilot: PowerCyber: Computational Training for Power Engineering Researchers** - USC PI, NSF, Fang's share: $120,000, Total: $300,000, 2024-01-01 to 2025-12-31
- **T&D Dynamic Co-Simulation for Power System Stability Analysis with High Inverter-Based Resource Penetration** - MSU Co-PI, NREL, Fang's share: $50,000, Total: $400,000, 2024-01-01 to 2024-06-30
- **SAPPHIRE: Stability-Augmented Optimal Control of Hybrid PV Plants with Very High Penetration of Inverter-based Resources** - MSU Co-PI, DOE/NREL, Fang's share: $50,000 Total: $3,200,000, 2023-04-01 to 2025-03-31

Teaching

- **ELCT 221: Circuit II** - Fall 2026, EE, University of South Carolina, Undergraduate Course
- **ELCT 221: Circuit II** - Spring 2026, EE, University of South Carolina, Undergraduate Course
- **ELCT 451: Power System Design and Analysis** - Fall 2025, EE, University of South Carolina, Undergraduate Course
- **ECE 5990:Power Systems Economics** - Spring 2025, ECE, Mississippi State University, Undergraduate and Graduate Course
- **ECE 4613/6613: Power Transmission Systems** - Fall 2024, ECE, Mississippi State University, Undergraduate and Graduate course
- **ECE 4613/6613: Power Transmission Systems** - Fall 2023, ECE, Mississippi State University, Undergraduate and Graduate course
- **ECE 4633/6633: Power Distribution Systems** - Spring 2023, ECE, Mississippi State University, Undergraduate and Graduate Course
- **ECE 3643: Electronic Circuits I** - Fall 2022, ECE, Mississippi State University, Undergraduate Course

Awards and Honors

- Best Paper Award, IEEE Open Access Journal of Power and Energy, 2025, for "Frequency Nadir Constrained Unit Commitment for High Renewable Penetration Island Power Systems," selected as one of two best papers in the IEEE Open Access Journal of Power and Energy in 2025.
- IEEE PES PSOPE Technical Committee Prize Paper Award, 2024, for "Transmission-and-Distribution Dynamic Co-Simulation Framework for Distributed Energy Resource Frequency Response," published in IEEE Transactions on Smart Grid.
- Outstanding Associate Editor for IEEE Transactions on Power Systems, 2023
- Outstanding Associate Editor for IEEE Transactions on Sustainable Energy, 2022
- Best Journal Paper Award of Journal of Modern Power Systems and Clean Energy, 2019
- Best Conference Paper in IEEE PES General Meeting, 2018
- Outstanding Reviewer for IEEE Transactions on Power Systems, 2022, 2023
- Outstanding Reviewer for IEEE Transactions on Sustainable Energy, 2021
- Outstanding Reviewer for IEEE Transactions on Sustainable Energy, 2019
- Outstanding Reviewer for Applied Energy, 2018
- Outstanding Reviewer for International Journal of Electrical Power and Energy Systems, 2018
- Outstanding Reviewer for IEEE Transactions on Sustainable Energy, 2017
- Outstanding Reviewer for Electric Power Systems Research, 2016/2018
- Excellent Reviewer for Journal of Modern Power and Clean Energy, 2016/2017/2018/2019
- University of Tennessee Chancellor's Citation Award for Extraordinary Professional Promise, 2016
- Department Fellowship, EECS Department, University of Tennessee, 2012/2013
- Outstanding Graduate student at China Electric Power Research Institute, 2012
- Self-improvement scholarship of HUST, 2007
- Freshman scholarship of HUST, 2006

Service and Leadership

- Vice Chair, IEEE PSOPE Bulk Power System Planning Subcommittee, from 2023
- Associate Editor, IEEE Transactions on Sustainable Energy, from 2022
- Associate Editor, IEEE Transactions on Power Systems, from 2020
- Associate Editor, Energy Internet, from 2025
- Associate Editor, Energy Conversion and Economics, from 2024
- Associate Editor, Journal of Modern Power Systems and Clean Energy, from 2017

Complete Publications - Journal Papers (55)

1. Q. An, G. Li, X. Fang, F. Li and J. Wang, "On the decomposition of locational marginal hydrogen pricing: Problem formulation and theoretical analysis," CSEE Journal of Power and Energy Systems, pp. 1-10, 2026, doi: 10.17775/CSEEJPES.2025.04160.

2. Yuxin Deng, Xin Fang, Shuan Dong, Ningchao Gao, Jin Tan, Analytical Small-signal Stability Analysis of Low-Inertia Power System Frequency Response Considering Secondary Frequency Regulation, Electric Power Systems Research.

3. Prasant Basnet, Xin Fang, Wenbo Wang, Weijia, Liu, Distributed Optimization and Control for Autonomous Distributed Energy Resource Power Dispatch and Frequency Regulation Considering Communication Failures, Sustainable Energy, Grids and Networks.

4. Xin Fang,Energy Equity-Aware Load Shedding Optimization Methodology, Energy Internet.

5. Xin Fang,Virtual Inertia Synthesis and Control: Informative and Relevant, IEEE Power and Energy Magazine.

6. Jinning Wang, Fangxing (Fran) Li, Xin Fang, Hantao Cui, Buxin She, Hang Shuai, Qiwei Zhang, Kevin Tomsovic, "Dynamics-incorporated Modeling Framework for Stability Constrained Scheduling Under High-penetration of Renewable Energy," in IEEE Transactions on Sustainable Energy.

7. Zishan Guo, Qinran Hu, Chong Qu, Tao Qian,, Xin Fang, Renjie Hu, Zaijun Wu, "Stable Relay Learning Optimization Approach for Fast Power System Production Cost Minimization Simulation," in IEEE Transactions on Power Systems.

8. Yuxin Deng, Xin Fang, Ningchao Gao, Jin Tan, "Multi-Timescale Modeling Framework of Hybrid Power Plants Providing Secondary Frequency Regulation," in IEEE Open Access Journal of Power and Energy

9. Rushuai Han, Qinran Hu, Xin Fang, Tao Qian, Yuanshi Zhang, "Frequency Security-Constrained Unit Commitment with Fast Frequency Support of DFIG-Based Wind Power Plants," in International Journal of Electrical Power and Energy Systems.

10. Hailei He, Yantao Zhang, Xin Fang, Qinyong Zhou, "DC Near-area Voltage Stability Constrained Renewable Energy Integration for Regional Power Grids," in IET Generation, Transmission & Distribution.

11. Q. An, G. Li, X. Fang, F. Li and J. Wang, "On the Decomposition of Locational Marginal Hydrogen Pricing-Part II: Solution Approach and Numerical Results," in IEEE Transactions on Industrial Informatics, doi: 10.1109/TII.2024.3393498.

12. A. Zhou, M. Yang, X. Fang and Y. Zhang, "Addressing Wind Power Forecast Errors in Day-Ahead Pricing With Energy Storage Systems: A Distributionally Robust Joint Chance-Constrained Approach," in IEEE Transactions on Sustainable Energy, doi: 10.1109/TSTE.2024.3374212.

13. X. Liu, Xin Fang, et al., "Frequency Nadir Constrained Unit Commitment for High Renewable Penetration Island Power Systems," in IEEE Open Access Journal of Power and Energy, vol. 11, pp. 141-153, 2024, doi: 10.1109/OAJPE.2024.3370504.

14. Qiwei Zhang, Fangxing Li, Xin Fang, Jin Zhao, Implications of electricity and gas price coupling in US New England region, iScience, Volume 27, Issue 1, 2024, 108726, ISSN 2589-0042, https://doi.org/10.1016/j.isci.2023.108726.

15. J. Wang et al., "Electric Vehicles Charging Time Constrained Deliverable Provision of Secondary Frequency Regulation," in IEEE Transactions on Smart Grid, doi: 10.1109/TSG.2024.3356948.

16. N. Gao, D. W. Gao and X. Fang, "Manage Real-Time Power Imbalance With Renewable Energy: Fast Generation Dispatch or Adaptive Frequency Regulation?," in IEEE Transactions on Power Systems, vol. 38, no. 6, pp. 5278-5289, Nov. 2023, doi: 10.1109/TPWRS.2022.3232759.

17. S. Lu, Y. Xu, W. Gu, X. Fang and Z. Dong, "On Thermal Dynamics Embedded Static Voltage Stability Margin," in IEEE Transactions on Power Systems, vol. 38, no. 3, pp. 2982-2985, May 2023, doi: 10.1109/TPWRS.2023.3246301.

18. M. Cai, W. Wang, X. Fang, A. R. Florita, M. Ingram and D. Christensen, "Demonstrating the transient system impact of cyber-physical events through scalable transmission and distribution (T&D) co-simulation," in CSEE Journal of Power and Energy Systems, doi: 10.17775/CSEEJPES.2023.01710.

19. X. Wang, F. Li, L. Bai and X. Fang, "DLMP of Competitive Markets in Active Distribution Networks: Models, Solutions, Applications, and Visions," in Proceedings of the IEEE, vol. 111, no. 7, pp. 725-743, July 2023, doi: 10.1109/JPROC.2022.3177230.

20. How Can Probabilistic Solar Power Forecasts Be Used to Lower Costs and Improve Reliability in Power Spot Markets? A Review and Application to Flexiramp Requirements. IEEE Open Access Journal of Power and Energy. 2022

21. W. Wang, X. Fang, H. Cui, F. Li, Y. Liu and T. J. Overbye, "Transmission-and-Distribution Dynamic Co-Simulation Framework for Distributed Energy Resource Frequency Response," in IEEE Transactions on Smart Grid, vol. 13, no. 1, pp. 482-495, Jan. 2022, doi: 10.1109/TSG.2021.3118292.

22. State-of-the-art short-term electricity market operation with solar generation: A review. Renewable and Sustainable Energy Reviews. 2021

23. X. Fang, H. Yuan and J. Tan, "Secondary Frequency Regulation from Variable Generation Through Uncertainty Decomposition: An Economic and Reliability Perspective," in IEEE Transactions on Sustainable Energy, vol. 12, no. 4, pp. 2019-2030, Oct. 2021, doi: 10.1109/TSTE.2021.3076758.

24. M. Xiang, Z. Yang, J. Yu, E. Du and X. Fang, "Real-Time Dispatch With Secondary Frequency Regulation: A Pathway to Consider Intra-Interval Fluctuations," in IEEE Systems Journal, vol. 16, no. 4, pp. 5556-5567, Dec. 2022, doi: 10.1109/JSYST.2021.3125796.

25. H. Cui, F. Li and X. Fang, "Effective Parallelism for Equation and Jacobian Evaluation in Large-Scale Power Flow Calculation," in IEEE Transactions on Power Systems, vol. 36, no. 5, pp. 4872-4875, Sept. 2021, doi: 10.1109/TPWRS.2021.3073591.

26. Razan A.H. Al-Lawati, Jose L. Crespo-Vazquez, Tasnim Ibn Faiz, Xin Fang, Md. Noor-E-Alam, Two-stage stochastic optimization frameworks to aid in decision-making under uncertainty for variable resource generators participating in a sequential energy market, Applied Energy, Volume 292, 2021, 116882, ISSN 0306-2619, https://doi.org/10.1016/j.apenergy.2021.116882.

27. Redesigning capacity market to include flexibility via ramp constraints in high-renewable penetrated system. International Journal of Electrical Power & Energy Systems. 2021

28. Load altering attack-tolerant defense strategy for load frequency control system. Applied Energy. 2020

29. Analytical Model of Day-ahead and Real-time Price Correlation in Strategic Wind Power Offering. Journal of Modern Power Systems and Clean Energy. 2020

30. A clustering-based scenario generation framework for power market simulation with wind integration. Journal of Renewable and Sustainable Energy. 2020

31. X. Fang, H. Cui, E. Du, F. Li and C. Kang, "Characteristics of locational uncertainty marginal price for correlated uncertainties of variable renewable generation and demands," Applied Energy, 2020.

32. X. Fang, K. S. Sedzro, H. Yuan, H. Ye and B. -M. Hodge, "Deliverable Flexible Ramping Products Considering Spatiotemporal Correlation of Wind Generation and Demand Uncertainties," in IEEE Transactions on Power Systems, vol. 35, no. 4, pp. 2561-2574, July 2020, doi: 10.1109/TPWRS.2019.2958531.

33. Distributionally-robust chance constrained and interval optimization for integrated electricity and natural gas systems optimal power flow with wind uncertainties. Applied Energy. 2019

34. Multi-Stage Stochastic Programming to Joint Economic Dispatch for Energy and Reserve With Uncertain Renewable Energy. IEEE Transactions on Sustainable Energy. 2019

35. Adjustable and distributionally robust chance-constrained economic dispatch considering wind power uncertainty. Journal of Modern Power Systems and Clean Energy. 2019

36. Decentralized wind uncertainty management: Alternating direction method of multipliers based distributionally-robust chance constrained optimal power flow. Applied Energy. 2019

37. X. Fang, B. -M. Hodge, E. Du, C. Kang and F. Li, "Introducing Uncertainty Components in Locational Marginal Prices for Pricing Wind Power and Load Uncertainties," in IEEE Transactions on Power Systems, vol. 34, no. 3, pp. 2013-2024, May 2019, doi: 10.1109/TPWRS.2018.2881131.

38. Mean-Variance Optimization-Based Energy Storage Scheduling Considering Day-Ahead and Real-Time LMP Uncertainties. IEEE Transactions on Power Systems. 2018

39. Modelling wind power spatial-temporal correlation in multi-interval optimal power flow: A sparse correlation matrix approach. Applied Energy. 2018

40. X. Fang, V. Krishnan and B. M. Hodge, "Strategic Offering for Wind Power Producers Considering Energy and Flexible Ramping Products," Energies, 2018.

41. Bilevel Arbitrage Potential Evaluation for Grid-Scale Energy Storage Considering Wind Power and LMP Smoothing Effect. IEEE Transactions on Sustainable Energy. 2018

42. Hybrid component and configuration model for combined-cycle units in unit commitment problem. Journal of Modern Power Systems and Clean Energy. 2018

43. A Framework of Residential Demand Aggregation With Financial Incentives. IEEE Transactions on Smart Grid. 2018

44. Available transfer capability evaluation in a deregulated electricity market considering correlated wind power. IET Generation Transmission and Distribution. 2017

45. B. Wang, N. Tang, X. Fang, S. Yang and W. Ji, "A Multi Time Scales Reserve Rolling Revision Model of Power System With Large Scale Wind Power," Zhongguo Dianji Gongcheng Xuebao/Proceedings of the Chinese Society of Electrical Engineering, 2017.

46. X. Fang, Y. Wei and F. Li, "Evaluation of LMP Intervals Considering Wind Uncertainty," in IEEE Transactions on Power Systems, vol. 31, no. 3, pp. 2495-2496, May 2016, doi: 10.1109/TPWRS.2015.2449755.

47. Day-ahead coordinated operation of utility-scale electricity and natural gas networks considering demand response based virtual power plants. Applied Energy. 2016

48. Strategic CBDR bidding considering FTR and wind power. IET Generation Transmission and Distribution. 2016

49. Strategic scheduling of energy storage for load serving entities in locational marginal pricing market. IET Generation Transmission and Distribution. 2016

50. Coupon-Based Demand Response Considering Wind Power Uncertainty: A Strategic Bidding Model for Load Serving Entities. IEEE Transactions on Power Systems. 2016

51. B. Wang, X. Fang, X. Zhao and H. Chen, "Bi-level Optimization for Available Transfer Capability Evaluation in Deregulated Electricity Market," Energies, 2015.

52. Reactive power planning under high penetration of wind energy using Benders decomposition. IET Generation Transmission and Distribution. 2015

53. X. Fang, Q. Guo, D. Zhang and S. Liang, "Capacity Credit Evaluation of Grid-connected Photovoltaic Generation considering Weather Uncertainty," Automation of Electric Power System, 2012.

54. X. Fang, Q. Guo, D. Zhang and S. Liang, "Capacity Credit Evaluation of Grid-Connected Photovotaic Generation," Power System Technology, 2012.

55. S. Liang, X. Hu, D. Zhang, H. Wang and X. Fang, "Current Status and Development Trend on Capacity Credit of Photovoltaic Generation," Automation of Electric Power Systems, 2011.

Complete Publications - Conference Papers (40)

1. Y Deng, X Fang, S Dong, J Tan, "Holistic Stability Region Evaluation of Low Inertia Power System Frequency Response," 2026 North American Power Symposium (NAPS 2026), 2026.

2. M Benbrahim, X Fang, Z Chen, "Sumo x PyPSA: Interactive Web Demo of Real-Time Urban Power-Traffic Co-Simulation with Vehicle-to-Grid," WWW Companion '26: Companion Proceedings of the ACM Web Conference 2026, 2026.

3. P Basnet, X Fang, "Frequency Stability Constrained Capacity Expansion Planning through Virtual Inertia and Droop Capacities Allocation of IBRs," 2026 IEEE Power & Energy Society Transmission & Distribution Conference and Exposition (T&D), 2026.

4. Y Deng, X Fang, W Liu, J Tan, "Enhancing Island Power Systems Operational Flexibility with Hybrid Power Plants," IEEE GreenTech Conference, 2026.

5. P Basnet, X Fang, "Inertia Estimation for Stability-Constrained Economic Dispatch of IBR Penetrated Grid," IEEE Power and Energy Society International Conference 2026, 2026.

6. W Wang, S Dong, W Liu, VR Motakatla, P Basnet, X Fang, "Co-Simulation of PSS/E, OpenDSS, and PSCAD for Power Systems Stability Analysis With Inverter-Based Resources," 57th North American Power Symposium, 2025.

7. N Gao, Y Deng, L Kiboma, K Sedzro, X Fang, S Kincic, J Tan, "Multi-Timescale Hydro Modeling with Integrated Hydrological Conditions: Flexibility Analysis and Its Impact on Grid Stability," IEEE Power and Energy General Meeting 2025, 2025.

8. Y Deng, X Fang, N Gao, J Tan, "Multi-timescale optimal operation framework for integrated economic and reliability analysis of hybrid power plants," 2024 IEEE Power & Energy Society General Meeting (PESGM), 2024.

9. P Basnet, X Fang, W Wang, W Liu, "Distributed Automatic Generation Control Considering DPV Using T&D Dynamic Co-Simulation," 2024 IEEE 52nd Photovoltaic Specialist Conference (PVSC), 2024.

10. A Ali, H Cui, W Wang, X Fang, "Power Sharing-Based Framework for Allocating Automatic Generation Control in Distributed Energy Resources," 2024 IEEE/PES Transmission and Distribution Conference and Exposition (T&D), 2024.

11. S Dong, X Fang, J Tan, N Gao, X Cui, A Hoke, "A unified analytical method to quantify three types of fast frequency response from inverter-based resources," 22nd Wind and Solar Integration Workshop (WIW 2023), 2023.

12. N Gao, S Dong, X Fang, A Hoke, DW Gao, J Tan, "Developing Frequency Stability Constraint for Unit Commitment Problem Considering High Penetration of Renewables," 50th IEEE Photovoltaic Specialists Conference (PVSC 50), 2023.

13. J Huang, X Fang, X Zhou, J Tan, S Dong, A Hoke, "Battery degradation modeling in hybrid power plants: An island system unit commitment study," 2023 IEEE Kansas Power and Energy Conference (KPEC), 2023.

14. P Basnet, X Fang, N Panossian, "Impact of Transportation Electrification on the System's Dynamic Frequency Response," 2023 IEEE Kansas Power and Energy Conference (KPEC), 2023.

15. X Fang, W Wang, F Ding, N Gao, "Distributed PV Hosting Capacity Evaluation Considering Equitable PV Accommodation," 2023 IEEE Kansas Power and Energy Conference (KPEC), 2023.

16. W. Wang, M. Cai, X. Fang and C. Irwin, "Impact of Open Communication Networks on Load Frequency Control with Plug-In Electric Vehicles By Cyber-Physical Dynamic Co-simulation," 2023 IEEE Power & Energy Society Innovative Smart Grid Technologies, 2023.

17. M Cai, X Fang, A Florita, "A Medium-/Low-Voltage Joint State Estimator Through Linear Uncertainty Propagation," 2022 IEEE Power & Energy Society General Meeting (PESGM), 2022.

18. Y Liu, TJ Overbye, W Wang, X Fang, J Wang, H Cui, F Li, "Transmission-distribution dynamic co-simulation of electric vehicles providing grid frequency response," 2022 IEEE Power & Energy Society General Meeting (PESGM), 2022.

19. X Liu, J Xie, X Fang, H Yuan, B Wang, H Wu, J Tan, "A comparison of machine learning methods for frequency nadir estimation in power systems," 2022 IEEE Kansas Power and Energy Conference (KPEC), 2022.

20. X Fang, M Cai, AR Florita, "Cyber-Physical Event Emulation-Based Transmission-and-Distribution Co-simulation for Situational Awareness of Grid Anomalies (SAGA)," IEEE PES General Meeting 2021, 2021.

21. W Wang, X Fang, AR Florita, "Impact of DER Communication Delay in AGC: Cyber-Physical Dynamic Simulation," 48th IEEE Photovoltaic Specialists Conference (PVSC), 2021.

22. S Yin, J Wang, Y Lin, X Fang, J Tan, H Yuan, "Practical Operations of Energy Storage Providing Ancillary Services: From Day-Ahead to Real-Time," North American Power Symposium 2020, 2020.

23. X Fang, J Tan, H Yuan, S Yin, J Wang, "Providing Ancillary Services with Photovoltaic Generation in Multi-Timescale Grid Operation," North American Power Symposium 2020, 2020.

24. X Fang, MT Craig, BM Hodge, "Linear Approximation Line Pack Model for Integrated Electricity and Natural Gas Systems OPF," IEEE Power & Energy Society General Meeting 2019, 2019.

25. KS Sedzro, X Fang, BMS Hodge, "Analysis of Wind Ramping Product Formulations in a Ramp-constrained Power Grid," Hawaii International Conference on System Sciences (HICSS), 2019.

26. X Fang, BMS Hodge, F Li, "Capacity Market Model Considering Flexible Resource Requirements," IEEE PES General Meeting 2018, 2018.

27. X Fang, BMS Hodge, V Krishnan, F Li, "Potential of Wind Power to Provide Flexible Ramping Products and Operating Reserve," IEEE PES General Meeting 2018, 2018.

28. H Chen, T Jiang, X Li, G Li, X He, X Kou, L Bai, F Li, X Fang, "Available Transfer Capability Calculations Considering Demand Response," IEEE PES General Meeting 2017, 2017.

29. X. Fang, F. Li, H. Cui, L. Bai, H. Yuan, Q. Hu and B. Wang, "Risk Constrained Scheduling of Energy Storage for Load Serving Entities Considering Load and LMP Uncertainties," IFAC-Control of Transmission and Distribution Smart Grids, 2016.

30. L Yi-feng, W Bei-bei, L Hui, F Xin, "Multi-dimensional assessment of the developing situation of provincial electricity market considering the external economic factors," 2016 China International Conference on Electricity Distribution (CICED), 2016.

31. L Bai, F Li, Q Hu, H Cui, X Fang, "Application of battery-supercapacitor energy storage system for smoothing wind power output: An optimal coordinated control strategy," 2016 IEEE Power and Energy Society General Meeting (PESGM), 2016.

32. H Yuan, X Li, F Li, X Fang, H Cui, Q Hu, "Mitigate overestimation of voltage stability margin by coupled single-port circuit models," 2016 IEEE Power and Energy Society General Meeting (PESGM), 2016.

33. X Fang, F Li, Q Hu, N Gao, "System Load Margin Evaluation using Mixed-Integer Conic Optimization," North American Power Symposium (NAPS), 2015, 2015.

34. Q Hu, X Fang, F Li, et al., "An approach to assess the responsive residential demand to financial incentives," IEEE PES General Meeting, Denver, CO, Jul. 26-30, 2015, 2015.

35. H Cui, F Li, X Fang, R Long, "Distribution Network Reconfiguration with Aggregated Electric Vehicle Charging Strategy," IEEE PES General Meeting, Denver, CO, Jul. 26-30, 2015, 2015.

36. X Fang, F Li, Q Hu, Y Wei, N Gao, "The impact of FTR on LSE's strategic bidding considering coupon based demand response," 2015 IEEE Power & Energy Society General Meeting, 2015.

37. X Fang, F Li, N Gao, "Probabilistic available transfer capability evaluation for power systems including high penetration of wind power," 2014 International Conference on Probabilistic Methods Applied to Power Systems (PMAPS), 2014.

38. X Fang, F Li, Y Xu, "Reactive power planning considering high penetration of wind energy," 2014 IEEE PES T&D Conference and Exposition, 2014.

39. Xin Fang, Qiang Guo, Dongxia Zhang, Shuang Liang, "Capacity Credit Evaluation of Photovoltaic Generation Based on System Reserve Capacity," Power and Energy Engineering Conference (APPEEC), 2012 Asia-Pacific, 2012.

40. H Zhang, H Zhu, H Shen, B Li, X Fang, "The Probabilistic Production Simulation for Mixed Wind-Hydro-Thermal Power System and the Sensitivity Analysis for the Indices of Abandoned Wind," Power and Energy Engineering Conference (APPEEC), 2012 Asia-Pacific, 2012.