2024 Boao New Power System **International Forum - Power** System and New Energy **Technology Innovation Forum** (NPSIF 2024)

Qionghai, China 8-10 December 2024

Pages 1-506



**IEEE Catalog Number: CFP242A9-POD ISBN**:

979-8-3315-0456-4

## Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP242A9-POD

 ISBN (Print-On-Demand):
 979-8-3315-0456-4

 ISBN (Online):
 979-8-3315-0455-7

## Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400 Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



## **Table of Contents**

Dynamic Interactive Algorithm for Vector Engineering Asynchronous Database of Substation Based on Improved CNN	1
Haifeng Tian, Duojie Caihai, Taimin Zhao, Lantao Wang, Congyuan Zhao, Shuning Liu	1
Comparison of the Application of TCN Feature Extractor in Solar Irradiance Prediction	_
Zhiyong Liu, Wei Huang, Sineng Li	5
Research on the path of new energy system based on LEAP model	1.0
Jiayi Zhang, Shanli Wang, Bing Fang, Huanxiu Xiao, Qian Sun, Shifang Kuang	13
Transient Voltage Control Strategy for the Receiving-end Power Grid with New Energy Stations Coordination	19
Huanhuan Yang, Pan Qi, Guanghu Xu, Jianxin Zhang, Deping Ke	
Unified identification modeling and planning application of security region of the regional integrated energy system	24
Duanxiang Li, Hongzhi Liu, Wen Jiang	
CIM Extensions for New Energy Design: Facilitating the Development and Integration of New Energy Design Software	22
Haiqing Zou, Weipeng Chen, Yuhui Wu, Chuang Wang, Jun Shi, Rui Wang, Tiange Guo, Zhu Feng	33
Mitigation Strategies for Greenhouse Gas Emissions and Energy Consumption Based on Deep Learning	39
Jian Zhang, Shaojun Shi, Nili Zhang	
A study on portfolio decision making for distributed photovoltaic power generation considering risks and returns	44
Yuanfu Tang, Jing Liao, Shichao Shao, Qianqian Zhang, Xinhua Zhang	
Frequency response modeling and analysis for the large-scale renewable energy base in the desert area	48
Yonglin Jin, Pupu Chao, Tianyu Zhu, Qichao Chen, Zhidong Wang, Fei Wang, Zhuan Zhou, Jiayu Bian	48
Research on location Scheme of Photovoltaic Power Station based on GIS Technology	
Hui Zhang, Jian Zhao, Rong Yu, Jiangshun Yu, Wei Liu, Shan Wu, Dandan Liu, Yuran Chen, Qi Liu	53
Research on Photovoltaic Power Prediction Models Based on Graph Convolutional Networks with Online Rolling Training	59
Jingli Dou, Yufeng Li, Haideng Chen	
Research on quality evaluation of multi-state data of substation equipment based on game theory combined weighting-comprehensive evaluation	64
Chao Zhao, Kui Xu, Li Zhang, Junkai Huang, Rong Yu	
Research on Carbon Emission Prediction Model in Energy Sector of Guizhou Province	69
Geng Teng, Weihua Qian, Shengjin Wu, Yao Gao	09
Optimization Study on the Location Selection of Photovoltaic Substation in Mountainous Areas of Guizhou Based on GIS and TOPSIS Model	75
Dongyang Liu, Fan Zhang, Shujuan Bai, Junhu Wang	

Interharmonic Measurement Method for Distributed Energy Access Power Systems Based on Support Vector Machines and Neural Networks	80
Hengjing He, Leping Zhang, Jinyang Du, Bensong Zhang, Hanfang Ye	
Developing a new 2D CNN-BLSTM integrated learning method to predict photovoltaic power	84
Yong Zhang, Yong Liu, Jing Xu, Yasong Zhao	
Probabilistic Photovoltaic Power Prediction based on QR-BiLSTM-SA Yuchen Jiang, Jia Wang, Yiming Peng	90
Thermal analysis and development of power module with energy self-balancing Yuebin Zhou, Xipeng Cai, Yiliang Xu, Wanyu Cao, Liu Yang, Yukun Chen, Xiong Yan	95
Optimization Model for Distributed Generation Accommodation Capacity Based on Artificial Bee Colony Algorithm	102
Xiaoling Cai, Jiaqiao Chen, Jikun Wu, Xiaoyi Song, Liwei Wang, Wen Hu	102
Optimal Air Supply Management for Residential Fuel Cell Systems based on Model Predictive Control	111
Haowen Hu, Rongfu Xie, Xiaochen Wu	
A resonant suppression method for grid connected LCL photovoltaic inverters in the substation area	116
Zhijian Wang, Guangjian Mo, Tongchuan Song, Yangqing Liu, Guanhao Zeng, Haopeng Li	
Evaluation Study on the Accommodation Capacity of High Penetration Distributed Photovoltaics in Low-Voltage Distribution Networks	120
Hua Gu, Chitao Liu, Xiaofeng Shen, Zheng Wu, Yemin Dai	
Research on Management Coding of Computer Construction Phase Based on Substation 3D Models	127
Yimu Guo, Yuhang Zheng, Bin Bai, Yin Lu	
Evaluation system of oilfield power grid stability considering new energy grid Lu Li, Weixin Gao, Qingge Li	135
Research on Influencing Factors and Decision-making of Power Transmission of High Proportion New Energy Power Grid	139
Qing Xu, Weiwu Li, Baixiang Yin, Xinying Wang, Xiaowen Wang, Ming Xu	
Research on the Effect of Strip-shaped Graphite Foreign Object on the Fretting Wear of Zirconium Alloy Cladding of Fuel Rods	1.46
Tiezhu Feng, Zhangnan Xu, Bo Feng, Xiangjiang Min, Xiaoyou You, Linbao Liu, Jingjing Liu, Lingyu Zuo, Wu Yang, Jinchuan Bai, Tao Wang	146
Scenario Decoupling Approach for Robust Planning of Zero-Carbon Energy Hubs	
Ting Zhang, Xinxin Xu, Yingming Mao, Zhijian Xu, Jiahui Wang, Yuzhou Zhou	151
Changing conditions and thermodynamic transient characterization of Therminol VP-1 oilwater heat exchanger	158
Shuai Dong, An Zheng, Peng Wang, Chaoyang Wang	
SF6 Research on the key technology of the gas integrated online monitoring system in the fault early warning and diagnosis of GIS equipment	163
Yongqi Wang, Yongliang Yao, Rui Zhao, Zhengyuan Zhang, Ruibin Jing	

Yongqi Wang, Honggang Chen, Xinhong Fan, Huanhuan Niu, Rui Zhao  Research on virtual power plant combined with energy storage system participating in AGC frequency regulation technology  Liang Cao, Jun Gu, Xuan Wang, Yong Cui  Method for evaluating the influence of phosphate mine goaf on the foundation deformation of transmission towers based on InSAR technology  Yu Wu, Huan Huang, Shuyi Zheng, Jiangshun Yu, Qing Liu, Yi Li, Xianglun Nie, Dandan Liu  Structural Safety Assessment of Transmission Towers under Ice Coating Disasters  Wei Niu, Huan Huang, Zenghao Huang, Jinqiang He  Eccentric Force Analysis Of Transmission Tower Angles Under Ice-covered Environment  Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao  A coordinated planning for long and short duration energy storage considering multi- timescale power and electricity balance  Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang  Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment  Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu  Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring  Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Khort-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai  Research on key technology of virtual power plant based on adaptive data-driven modelling
frequency regulation technology Liang Cao, Jun Gu, Xuan Wang, Yong Cui  Method for evaluating the influence of phosphate mine goaf on the foundation deformation of transmission towers based on InSAR technology Yu Wu, Huan Huang, Shuyi Zheng, Jiangshun Yu, Qing Liu, Yi Li, Xianglun Nie, Dandan Liu  Structural Safety Assessment of Transmission Towers under Ice Coating Disasters Wei Niu, Huan Huang, Zenghao Huang, Jinqiang He  Eccentric Force Analysis Of Transmission Tower Angles Under Ice-covered Environment Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao A coordinated planning for long and short duration energy storage considering multitimescale power and electricity balance Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring Changjun Fan, Cheng Zhang, Hua Qu Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation Yuqing Cen, Chikwan Lee, Yunhe Hou Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing Short-term power load forecasting for factories based on PCA-PSO-SVM Xiangtao Kong, Chengwen Chen, Xin Lai
Method for evaluating the influence of phosphate mine goaf on the foundation deformation of transmission towers based on InSAR technology Yu Wu, Huan Huang, Shuyi Zheng, Jiangshun Yu, Qing Liu, Yi Li, Xianglun Nie, Dandan Liu Structural Safety Assessment of Transmission Towers under Ice Coating Disasters Wei Niu, Huan Huang, Zenghao Huang, Jinqiang He  Eccentric Force Analysis Of Transmission Tower Angles Under Ice-covered Environment Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao A coordinated planning for long and short duration energy storage considering multi- timescale power and electricity balance Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring Changjun Fan, Cheng Zhang, Hua Qu Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation Yuqing Cen, Chikwan Lee, Yunhe Hou Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing Short-term power load forecasting for factories based on PCA-PSO-SVM Xiangtao Kong, Chengwen Chen, Xin Lai
of transmission tower's based on InSAR technology Yu Wu, Huan Huang, Shuyi Zheng, Jiangshun Yu, Qing Liu, Yi Li, Xianglun Nie, Dandan Liu Structural Safety Assessment of Transmission Towers under Ice Coating Disasters Wei Niu, Huan Huang, Zenghao Huang, Jinqiang He  Eccentric Force Analysis Of Transmission Tower Angles Under Ice-covered Environment Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao A coordinated planning for long and short duration energy storage considering multi- timescale power and electricity balance Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring Changjun Fan, Cheng Zhang, Hua Qu Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation Yuqing Cen, Chikwan Lee, Yunhe Hou Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing Short-term power load forecasting for factories based on PCA-PSO-SVM Xiangtao Kong, Chengwen Chen, Xin Lai
Structural Safety Assessment of Transmission Towers under Ice Coating Disasters Wei Niu, Huan Huang, Zenghao Huang, Jinqiang He  Eccentric Force Analysis Of Transmission Tower Angles Under Ice-covered Environment Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao  A coordinated planning for long and short duration energy storage considering multitimescale power and electricity balance Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring Changjun Fan, Cheng Zhang, Hua Qu Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation Yuqing Cen, Chikwan Lee, Yunhe Hou Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing Short-term power load forecasting for factories based on PCA-PSO-SVM Xiangtao Kong, Chengwen Chen, Xin Lai
Wei Niu, Huan Huang, Zenghao Huang, Jinqiang He  Eccentric Force Analysis Of Transmission Tower Angles Under Ice-covered Environment Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao  A coordinated planning for long and short duration energy storage considering multitimescale power and electricity balance  Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang  Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment  Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu  Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring  Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Eccentric Force Analysis Of Transmission Tower Angles Under Ice-covered Environment Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao  A coordinated planning for long and short duration energy storage considering multitimescale power and electricity balance Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring Changjun Fan, Cheng Zhang, Hua Qu Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation Yuqing Cen, Chikwan Lee, Yunhe Hou Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing Short-term power load forecasting for factories based on PCA-PSO-SVM Xiangtao Kong, Chengwen Chen, Xin Lai
Zenghao Huang, Hourong Zhang, Wei Niu, Xianyin Mao  A coordinated planning for long and short duration energy storage considering multitimescale power and electricity balance  Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang  Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment  Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu  Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring  Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
timescale power and electricity balance  Zhenda Hu, Yichao Zou, Zhi Zhang, Min Zhang, Zitao Xu, Zhihao Wang  Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment  Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu  Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring  Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Study on failure mode of transmission tower in goaf subsidence area based on scale model experiment  Jianrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu  Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring  Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Islanrong Wu, Qili Zhan, Yun Cai, Dandan Liu, Jian Zhao, Yu Wu  Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring  Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Application And Study of in SAR And GNSS Integration Technology in Power Line Tower Inclination Monitoring  Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Inclination Monitoring Changjun Fan, Cheng Zhang, Hua Qu  Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM Xiangtao Kong, Chengwen Chen, Xin Lai
Portable and Scalable Electric Vehicle Charging Demand Prediction Framework Based on Spatiotemporal Neural Networks  Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Spatiotemporal Neural Networks Liqi Ye, Yutong Peng, Junyou Zhang, Qi Xi, Xiaolin Wang, Weida Huang  Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation 221  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Grid-forming Energy Storage Configuration Strategy for Inertia Response and Primary Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Frequency Regulation  Yuqing Cen, Chikwan Lee, Yunhe Hou  Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Application of carbon dioxide energy storage technology based on new energy atmospheric pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
pressure flexible gas film storage bin: take Xinjiang region as a case  Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Panpan Chen, Ming Shang, Kailun Liu, Lili Zhu, Sensen Wang, Yongxing Fu, Wenhui Lai, Xing Li, Qiang Qing  Short-term power load forecasting for factories based on PCA-PSO-SVM  Xiangtao Kong, Chengwen Chen, Xin Lai
Xiangtao Kong, Chengwen Chen, Xin Lai
Xiangtao Kong, Chengwen Chen, Xin Lai
Research on key technology of virtual power plant based on adaptive data-driven modelling
1000 and the free modelling of the train points plant based on adaptive data-differ modelling
Shaohua Wu, Jian Zhao, Jiang Zou, Wei Hu
Simulation study on multi-objective optimal operation of low-carbon power systems Chengwei Wang, Zhiyuan Yang, Pei Li, Haijin Wang  243
A Cleaning Approach to Multi-Tower Wind Measurement Data Based on Self-attention Mechanism and Temporal Convolutional Networks (SA-TCN) 248
Yuan Liang, Changgang Li, Tian Liu, Hongyang Zhang, Yanhong Wu
Energy conversion emergency control method for industrial park integrated energy systems Wenbin Li, Lijing Jia, Baoyu Xu, Rongfei Lu, Yu Huang

Multi-field direct coupling study of coil launcher Yingjie Zhao	260
The Study on The Impact of Wind Farm Power Distribution on the Angle Stability of Wind- Thermal-Bundled Power Transmission Systems	266
Jianxin Zhang, Qin Gao, Peng Li, Jianshe Li, Mingyu Luo, Donghui Zhang	
Development and Application of Intelligent Terminal and Early Warning System for Power Tower Monitoring	273
Qian Chen, Chao Li, Xinhua Nie, Zhuangsong Chen, Minping Cai	
A Study of Low-carbon Operation of Energy Based on Predator Optimization Algorithms in a Dual-carbon Context	277
Jiankun Hu, Guoping Feng, Xinyu Liang, Guanxuan Li	
Bi-level Optimization Model for Virtual Power Plants with Dynamic Tariffs and Shared Energy Storage Considering Carbon Emissions	282
Wenchuan Meng, Zaimin Yang, Jianbin Lu, Shuai Han	
A Coupling Model for Low-Carbon Power Supply Security and Flexible Resource Demand Chen Fu, Li Lan, Su Chen, Mingxing Guo	290
Green Premium Cost Analysis of Electric Vehicles Using Sparse Principal Component Analysis	295
Xiqiao Lin, Zidong Xu	
Multi-objective and multi-factor active power optimization model of clean energy in industrial park	302
Shunjiang Wang, Shiyang Zhang, Tianfeng Chu	
Short-term Wind Power Prediction for Extreme Weather Scenarios Based on Tensor Autoregression Completion Algorithm and ARMA Error Correction	307
Qing Xu, Kun Ding, Ming Xu, Xinying Wang, Tianshou Li, Zhengying Liu	
<b>Load Prediction of Electric Vehicles Based on Modal Decomposition and CNN-BIGRU-RF</b> Qiuwen Li, Qinglin Zou, Dong Mo, Yufu Lu, Xiangyun Kong, Zhi zhang	312
A deep learning-based framework for recognition of pylon type based on UAV LiDAR Point Cloud	319
Zhihong Ran	31)
The effect of excessive Vge inductance on Vge waveform	
Yongsheng Jiao, Yuxuan Wang, Haoqiang Qin, Zhichao Wang, Zhaoliang Meng	326
Research on the electrical characteristic of Zhangbei flexible HVDC transmission lines on same tower in the case of non-fault lightning strike	331
Miao Liu, Bo Liu, Peng Dong, Rui Chen, Tianxiao Huang, Xiang Ren, Lu Zhang	
Research on online monitoring method for partial discharge of high-voltage motors and supporting power cables	336
Yafei Xue, Botao Duan, Zhongjie Li, Xu Wang, Wei Sun, Xiaolin Liu, Weiyi Sun	
Research on The Prediction Method of Insulation Aging of XLPE Cable	2.41
Zhiqiang Li, Sihua Wang	341
Time Sequence Control Method for Cross-Layer Acquisition of Automatic Test Data of Substation Relay Protection Device Based on Cloud Storage	346
Jianrui Wu, Yuan Wang, Lin Pan, Minchao Dang, Ying Wang, Lin Cheng	

Field-circuit coupled modeling and simulation method for cables	250
Hao Dai, Ran Hu, Zhanhua Huang, Bing Li, Zhifeng Xu	350
Development and Characterization of an Advanced MEMS-Based Dual-Effect Piezoelectric- Piezoresistive Sensor for High-Voltage Cable Monitoring	255
Ning Xiao, Xiaosong Peng, Xue Du, Yuewei Tian, Weijun Wang, Ruojie Cheng, Qian Zhou, Chao Yuan	355
Research and application on cleaning technology of rock-cast dam for submarine cable emergency repair	260
Tai Pang, Xiaojun Li, Xiaowei Huang, Degao Zhu, Deping Zhao, Yuyang Zhang, Weijia Zhang, Linzhuo Wang, Cong Wu, Yuanhong Chen	360
Research on High-Voltage Bushing Monitoring Technology Based on Intelligent Sensors	
Zheng Yang, Jiezheng Wen, Yan Qin, Xinghong Zeng, Fuqiang Yuan, Lianzhen Tang, Guang Chen, Kai Chen	366
Study on fault localisation in secondary circuit of intelligent substation based on graph neural network and SCD file	373
Hongtao Zhang, Songlin Wu, Shun Yan, Yuntao Liu, Zijian Zhang, Jiajia Zheng	
Analysis of An Abnormal Electronic Current Transformer Measurement and Optimization Strategy	377
Wenbo Yang, Fei Chen, Haichuan Zhang, Xi Huang, Weidong Ma	
Prediction model of ship anchoring in submarine cable protection area based on big data platform	381
Ning Wang, Zhe Hu, Jie Deng, Xingjie Zhou, Zhiming Dai, Huishan Wen	
Magnetic Array-based Current Inversion Method Considering Position Offsets	387
Yunfeng Xia, Qishuai Liang, Jie Yang, Jiang Ye, Zhongchen Xia, Chuan Zhou	367
Research on Health Assessment Method of Transmission Line Towers Based on Monitoring Data After Foundation Settlement	395
Yong Wang, Kai Cui, Xiaohan Zhu, Qian Yang, Chunhui Guo	
Research on a new integrated device for remote control of power cable testing and cutting Kangyangyong Cao, Hongquan Xing, Yilin Zhang, Chuan Xue, Feiyi Li, Ziyang Gao	401
A Multi-scale Adaptive Sliding Window-based Algorithm for Anomaly Detection in Meter - generated metering data streams	405
Hua Li, Zhengrong Wu, Wenqin Chen, Xianzhi Yang	
Automatic Detection of Tree Hazards Near Power Lines Using Unmanned Aerial Vehicles and Multi-Source Remote Sensing	410
Yijiang Wu, Cheng Zhang, Zhicong Dong, Shunji He, Guanting Wu, Haofei Zhao	
An intelligent evaluation method for medium voltage distribution line loss	415
Zhanqi Chen, Zhongming Wu, Zhijian Wang, Ruxuan Zhao	413
Short-circuit Forces Analysis of Transformers Based on Finite Element Method for Digital Twins	420
Jiahui Yang, Junjie Zhang, Binghao Li, Shijie Li	
Electromagnetic Interference Characteristics of Transformer Partial Discharge Detection under Factory Test Environment and Anti-Interference Methods	426
Guanghuai Guo, Zhiguo Tang, Liuhuan Gu	

Intelligent Q&A System for Mountainous Transmission Line Design Based on Vector Retrieval	431
Caiqian Wang, Jinya Zhou, Jiamin Chen	
Research on operation and maintenance management technology of iced transmission line based on prediction model	438
Linlin Liu, Zeng Wang, Cong Ma, Haohua Wu, Yuanyuan Li, Xiaozhuo Guan	
An Asymmetric Fault Calculation Method for Flexible DC Transmission Systems Tian Lan, Bin Li, Song Zeng, Fengliang Zhang, Chao Luo	442
Enhanced GN Algorithm for Multi-Infeed HVDC Receiving-end Network Optimization Xun Lu, Junlei Liu, Xinmiao Liu, Jun Liu, Lingxue Lin, Zuowei You	448
Research status and progress of UHVDC voltage measuring devices Hao Li, Jianxiang Huang, Binghou Ding, Yaoxing Bai, Chunxiao Zhang, Yanbing Sun	455
A New Control Design and Simulation	1.50
Qiuwen Li, Dong Mo, Yufu Lu, Ziqi Zhao, Xiangyun Kong, Zhencheng Liang, Li Xiong	463
Appliance Classification by using Dynamic Voltage-current Trajectory and 3D-Convolutional Neural Network	468
Xinran Liu, Dengbin Liao, Xiongbao Zhang, Haoning Gao	
Research on Fault Diagnosis Method for Relay Protection Based on Deep Learning	175
Qiyue Huang, Chengyang Jin, Zhongwen Zhang	475
Short circuit fault identification of 110kV intelligent substation based on improved flame optimization algorithm	479
Min Wu, Jie Wang	
A real-time simulation model for the Digital Twin of the DC transformer bushing	400
Zehua Wu, Yuan La, Zengcao Wang, Wei Zhang, Jianwei Cheng, Kejie Huang	483
Research on Distribution Grid Line Defect Identification Based on UAV Visual Fusion Technology	488
Xiangtao Liao, Xiangyu Jia, Zhiyang Yao, Junquan Shi, Ming Wang, Yu Zou	
A Precise Distance Measurement Scheme for Overhead Lines Based on a Novel Primary-Secondary Integrated Switch	493
Junyang Tian, Zhaohui Chen, Liandian Jiang, Haiyong Li, Zizheng Shen, Anning Sun	
Research and Implementation of Intelligent Clustering of Power Line Topology based on PCA-KNN-PEAK Algorithm	499
Yiming Wu, Shushu Lai, Jie Li, Jinlin Lin	
Transferable Neural Network Method Used for PMSM Permanent Magnet Temperature Estimation in Electrical Drive System	507
Xiaotian Zhang, Wangjie Lang, Yiyang Zhao, Chao Gong	
Research on Risk Assessment Methods and Protection Strategies for Power Network Security Guanbo He, Zhuoming Deng, Junbing Pan, Songyao Feng, Miaoru Su, Dengbin Liao	514
Anti Interference Technology of Relay Protection System in Large Power Grids Lyu Liu, Chao Xu, Guoyan Yang, Shi Tang, Yueda Long, Xiaolin Li, Shiwei Liao, Huang Qin	520

Research on Virtual Simulation Disassembly and Assembly Technology for Water Turbine Units	525
Chao Wu, Lei Chen, Yuxuan Wang, Jihong Kong, Jiahao Xiao	323
<b>Exploration of Smart Grid Relay Protection and Distributed Generation Access Technology</b> Shipei Yu	531
Active Support Technique for Flexibility and Stability of Multi-Partition Power Grid Based on Flexible DC Control  Huifan Xie, Yongjie Luo, Yinsheng Su, Zhu Guo, Guanghu Xu, Peng Li, Xiang Li, Mengjun Liao,	535
Pengwei Sun, Ziyou Li, Yujun Xiao	
Research on intra-day rolling peak shaving strategy of interconnected power grid with the participation of wind and photovoltaic energy	544
Shengmin Qiu, Jian Wang, Ke Wang, Zhantao Fan, Mingshan Mo	
A Practical Criteria for Unplanned Off-Grid Operation of Microgrid	
Zhongzhong Li, Lihong Ma, Haisheng Wang, Donghai Li, Jianhua Yin, Cong Li, Chao Chen, Jiashun Feng	551
Eddy current loss minimization method of linear permanent magnet synchronous motor Qi Li, Yanwei Chen, Yongchao Zhu, Yawei Wang, Pinghui Li, Qingzhao Liu	556
The invention relates to the design of a photoelectric detection module for a flight device Guiyou Lu	564
The Application of Machine Learning in Power Grid	568
Haonan Chen, Xing Feng, Quanjun Chen, Renshuang Han	200
Research on Integrated Value-added Operation Model of Grid Assets Combined with Micro Data Center	577
Di Jiang, Rui Xu, Junfeng Guo, Jun Li, Xueyan Li, Longsheng Peng	
Vulnerability evaluation of power grid geological hazards based on information model Dandan Liu, Wei Hu, Hui Zhang, Rong Yu, Jian Zhao, Long Huang	585
A Fault Location Method For Resonant Grounding System Of Distribution Network based on energy and waveform similarity	<b>7</b> 04
Tao Fang, Zhuobin Yu, Jinsheng Wang, Zhanpeng Fang, Jue Su, Liandong Huang, Wei Zou, Dao Gong	591
Motor bearing fault diagnosis based on GAM-CNN	<b>7</b> 0.6
Yi Ma, Jun Li	596
Research on the Application of Intelligent IoT Sensing Terminals in Online Monitoring of Smart Power Transmission	600
Zhenlei Xu, Yihui Zeng, Feng Huang, Junjia Mai, Zijian Lin, Shiping Xian	
Research on demand response incentive subsidy strategy for distribution network based on master-slave game	604
Haiqiang Lv, Weiwei Chai, Zhen Zhang	
Design of a Multi-Time-Scale Simulation Platform for Intelligent Distribution Networks Coordinating Source-Grid-Load-Storage	609
Binjiang Hu, Yuanhong Lu, Jingyue Zhang, Tianyu Guo, Libin Huang, Yanjun Zhao, Zhilong Guo, Dehuai Xu	609

Consideration of Simulation Methods for Reactive Power Compensation Optimization in Distributed Photovoltaic Distribution Networks	613
Haiping Guo, Hui Luo, Jie Zhang, Liang Tu, Yanjun Zhao, Yufeng Hu, Cheng Yu, Chuang Guo	
Power Grid Field Operation Intelligent Safety Supervision System	61.
Jianhuan Chen, Ganglin Wu, Libing Qin, Zhichao Peng, Xixiang Zhang	617
Cooperative Voltage Control of Distributed Photovoltaic in Distribution Network Considering Communication Delay Bin Liu, Dian Shao, Zhukui Tan, Caixia Hu	622
<b>Decoupling Control of Bearingless Motor Using Nine-Switch Inverter</b> Jinhui Li, Wei Liu, Yuanwei Zou, Xiaoyu Zou, Boliang Ji	628
Predictive dispatching method for regional power grid considering out-of-region hydropower Yuankang He, Xiaoqiang Sun, Hua Zheng, Jing Liu, Li Xie, Shaofei Lu, Ruixuan Zhang	633
A Study on the Economic Optimal Control Strategy of AC-DC Hybrid Microgrid Based on Consistency Theory	640
Zhiyong Liu, Zhaojie Zeng, Qing Zeng, Peipei Liu	
A State of Health Estimation Method of Lithium Batteries using Feature Fusion Based on Random Charging Segments	647
Gengda Li, Jun Lin, Wei Wang, Huishi Liang, Kui Zhou, Haifeng Yang, Xiaobo Chen	
Research on Capacity Optimization Configuration of Modular Battery Swap Stations for Electric Heavy-Duty Trucks in Railway Construction Scenarios	651
Xi Cao, Chen Jin, Yongxiang Liu, Pu Guo, Zhijuan Qu	
Research on cluster architecture of microgrid based on dual flexible source network and storage	657
Fen Chen, Yuancheng Tang, Hui Yu, Pu Qu, Xiaolong Lu, Zhiheng Cui	
Research on integrated intelligent autonomous inspection technology of transmission, transformation and distribution based on the coordination of multiple UAV nests	663
Kaifang Zhu, Jing Tang	
Research on High Frequency Resonance of Distribution Network with High Proportion distributed Energy	671
Zhisheng Lv, Yi Feng, Jie Chen, Rongbin Li	
Multi-objective two-stage fault recovery method for distribution network based on heterogeneous feature depth extraction	676
Yun Zeng, Ming Deng	
Research on cluster intelligent reinforcement learning system modeling for substation operation and maintenance	680
Jian Zhang, Yanzhong Qin, Jinguang Ma	
Research on intelligent inspection technology based on augmented reality Jihong Kong, Xi Luo, Yisong Lv, Jiahao Xiao, Yuxuan Wang	688
Analysis of online monitoring and diagnosis system for partial discharge of high-voltage cables	696
Yafei Xue, Botao Duan, Zhongjie Li, Xu Wang, Wei Sun, Xiaolin Liu, Weiyi Sun	070
A Zero Trust-Based Network Security Protection Scheme for New Power Monitoring System Fuchuan Zhang, Qinqin Wu, Jianfeng Deng, Mengqian Hao, Lizhen Chen, Shuting Chen, Hao Wu	701

Adaptive path Planning of UAV based on semantic Segmentation in Electric Power Patrol	700
Jingxian Sun, Cheng Zhang, Shen Luo, Fei Meng, Chaowen Xie, Yijiang Wu, Guanheng Zhang	708
Robust Power System Forecasting-Aided State Estimation Based on Generalized Loss Cubature Kalman Filter	712
Shanmou Chen, Jianxia Wu, Chaolun Zhang, Xu Qiao, Weiwei Li, Liang Li, Hongyu Long	
Research on the Evolution of Functional Investment Structure in Power Grid Infrastructure for New Power Systems	717
Rui Zhu, Qihe Lou, Xiaoling Jin, Xianzhong Dai, Shengxiong Yang	
Load Frequency Control of Interconnected Power Systems with Hybrid Energy Storages	728
Hua Zheng, Li Xie, Liangliang Zhao, Changling Li, Chunxi Chang, Geng Yi	128
Research on the Design and Application of Intelligent Inspection System Based on Digital Twin Technology	733
Yuxuan Wang, Chao Wu, Lei Chen, Jiahao Xiao, Zhen Xu	
Frequency Response Characterization of Wind Power Feeding System via LCC-HVDC Shilu Wang, Pupu Chao, Junjie Sun, Bing Xie, Yonglin Jin, Hai Cao, Junkun Hao	740
Design and Optimization of Intelligent Operation and Inspection System for Transmission Lines Based on Digital Twins	745
Kun Zhang, Luo Jie	
Research on Comprehensive Optimization Operation Strategy for Microgrid Production Management in Industrial Parks Under the New Power System	750
Guangliang Feng, Yan Chen, Yumei Li	
Research on the Development of a New Power System Under the "Dual Carbon" Goals Zhaochun Li, Yongtao Xia, Yunxin Luo, Junnan Xiong	758
Power system transient stability assessment method based on optimized time-spectral graphical neural network	763
Hancong Huangfu, Yongcai Wang, Hao Lin	
A Study on Dynamic Task Scheduling of a Multi-tier Distributed Query Engine for Power Systems	768
Zhengrong Wu, Hua Li, Xun Min, Furong Yin	
Research on network security protection strategy of adaptive power monitoring system Gang Qu, Liang Zhang, Haochun Jin, Xin Wu, Yong Hou, Xingzhi Wang	773
Research on Automatic Verification System for Substation Protection Setting Siyao Shen, Xuan Liu, Shanshan Song, Chenchao Fan, Huanhuan Xiong	779
Detection of Power System Personnel's Abnormal Behavior Based on Machine Vision Xiao Li	783
Research On Rapid Point-To-Point Method Of Secondary System Of Smart substation Zhenghao Luo, Wentao Ma, Yi Zhu, Rufeng Peng, Haihong Wu	787
A Method for Enhancing Real-Time Simulation Accuracy in Power Systems under Edge Computing Architectures with Information Latency Considerations  Hui Luo, Libin Huang, Ying Huang, Yanjun Zhao, Yufeng Hu, Tian Zhang, Junjie Lei	791
,	

Research on Digital Modeling and Intelligent Detection System for Electrical Cubicles	705
Yudong Fang, Ping Zhao, Zhen Huang, Hao Li, Yuande Zheng, Xiaoqing Shen, Jiangbo Fan	795
Research on an Intelligent Appearance Recognition System for Electrical Cubicles Based on Digital Modeling and AI Technology	799
Zhen Huang, Yutao Qiu, Ping Zhao, Renjie Ye, Hao Li, Xiaoqing Shen, Jiangbo Fan	
A Review of Models and Methods for Precise Load Control Strategies	803
Aoqiu Wei, Shengli Wang, Li Xie, Cheng Luo, Lihui Xu, Alimire Maimaitituxun, Hua Zheng	803
Research on the Relationship Between Trading Varieties and Pricing Mechanisms Towards New Power Systems	810
Tengteng Jia, Haoyong Chen	
Modified ResGated Graph Convolutional Network-based Power Flow Calculation	
Wenqi Huang, Jiaxuan Hou, Haixin Liu, Zhen Huang, Fan Li, Ying Wang, Zibin Zhao, Pengyue Xu	814
Study of Protection Terminal Unit with Traveling Waves based Fault Location for Power Distribution System	821
Feng Zhang , Anning Sun, Bo Peng, Bin Xu, Hui Sun, Shenxing Shi, Xinzhou Dong	
Grid Engineering Full Lifecycle Application Based on GIM+GIS+IoT Data Fusion for New Power Systems	827
Juan Yang, Wei Liu, Yunhong Shi, Xingyu Ran	
Research on RCD automatic check method for new power system	836
Yikun Guo, Yubo Chen, Dan Tong	830
Research on reinforcement learning based decision support algorithm for power marketing atomic data management	842
Yihong Xiong, Fan Pan, Xiang Chen, Guoyao Wu, Xiaoying Huang	
Optimization Model and Optimal Strategy Simulation Study of Electricity Cost for Industrial and Commercial Users under New Electricity Price Policy	847
Jianming Lu	
Research on The Management of Guangxi Electric Power Trading Institutions Based on Compliance Risk	854
Lijuan Qin, Liuqiang Huang, Yuankang Wei, Xinxing Jiang, Fei Huang, Hongpeng Qi, Yunlong Shang	054
Empirical Study on the Changes and Models of the Relationship between Strategic Emerging Industries, Traditional Industries, and Electricity Consumption	859
Qianyu Li	
Risk Management of Regional Electricity Market Zhou Zou, Xinyue Hu, Jianrong Qin, Tao Liu, Fei Huang	870
Short-term load prediction of electric vehicle charging station based on Transformer Cheng Zhang, Luo Zhang, Hua Qu, Yongbin Mai	876
KG-BGCN: A Secondary Power Equipment Classification Model Based on Knowledge	
Graphs	881
Xinyuan Zeng, Yiqin Lu, Yang Su, Weijie Qiu, Xu Lin, Kaiqiong Chen	

Dynamic Pricing and User Response Optimization in Retail Electricity Market Based on Reinforcement Learning	887
Jing Li, Chao Ji, Wei Zhang, Yuxing Hao, Chen Yuan, Fanqi Meng	
Research on carbon emission accounting method of 126 kV GIS power equipment based on LCA	894
Jianying Zhong, Yang Li, Xiang Fang, Xiaomin Zhao, Fang Gao, Zhihe Li, Weixu Zhang	
An overview of Post-Event Power Emergency Resource Dispatch for Coping with Extreme Weather	899
Jialu Li, Aoyu Lei, Chen Yu, Yongqiang Gao, Wenwei Tao, Taiji Li	
New Energy Participation in the Electricity Market : Global Perspective and China 's Practice	004
Mingshu Song, Shaofei Lu, Yong Wang, Xiaoyu Ye, Zhongwei Heng, Guangmang Gao, Siwen Zhang, Hua Zheng	904
Simulation Research of MPPT Based on Variable Step Size Hybrid HS Algorithm	
Zhichao Liang, Jian Zhou, Guangjian Mo, Yifeng Wei, Yi Yang, Zhenqiang Chen, Bingquan Luo, Jie Luo	910
<b>Evaluation Research of Smart Construction Site using Fuzzy Comprehensive Model Based</b> on the K thermal power construction project	915
Sirui Wu	
Adaptive Frequency Selection Algorithm for Medium Voltage Power Line Communication Based on Improved Particle Swarm Optimization	920
Yang Lei, Yong Cai, Fan Yang, Zhichun Yang, Chuanqiang Zhao, Xiangyang Zang	
Credit Risk Management in Electricity Spot Market Based on Performance Guarantee	925
Jingying Wu, Jianwei Cao, Luosong Jin, Yingya Ou, Tianyao Ji, Xiang Zhou, Ruiyang Lyu	923
Multi-scope Spectral Graph Neural Network for link scheduling	022
Chenghai Mai, Jiayi Lin, Wei Zhang	932
Comparative Study on Sequential and Joint Clearing Models for Spot Electric Energy and Frequency Regulation Markets Considering a High Proportion of Renewable energy	941
Manru Dai, Tianyao Ji	
Research on the Intelligent Decision Model and Application of Multi VPP Economic Dispatching Considering Uncertain Risks in the Market Background	947
Wei Wang, Jingtao Wang, Zhiguang Wang, Xin Yang, Jing Zhou	
Analysis of Domestic Energy Storage Participation in AGC Market Mechanism	954
Hua Zheng, Ruixuan Zhang, Hao Zhai, Xuan Liu, Li Xie, Peng Chang, Geng Yi, Shaofei Lu	754
Dynamic Risk Assessment Model for Urban Power Lifeline Based on Machine Learning	959
Guilin Li, Xu Chen, Gaomeng Jia, Yanan Li, Xu Chen, Ke Xiao	737
Electricity Market Participation of Energy Storage in China and Abroad: Mechanism Design and Development Suggestions	966
Chengsheng Yang, Hua Zheng, Yu Zou, Shaofei Lu, Xiaoyu Ye, Ruixuan Zhang	
The Fundamental Support Structure of Typical Day-Ahead Market Operations and Its Implications for the Southern China Power Market	972
Xin Zhou, Jisong Zhu, Lanfen Cheng, Wei Wang, Yuhui Song, Bao Li, Liang Xiao, Quan Yuan	

Based on Cloud-Edge Conadorative Converter Station Data Management Architecture	076
Siyuan Liu, Qing Wang, Xiaojun Shen	978
Typical capacity cost recovery mechanisms in foreign countries and their implications for China	983
Binkun Xu, Tianjun Chen, Lun Ye, Ting Zhou, Shichao Shao, Shuyue Zhang, Yuexia Pang	
Data-Driven Surrogate Model for the Dynamic Characteristics of Supercritical Units	000
Shuai Dong, An Zheng, Junyao Jiang, Wei Gao, Ming Liu	988
Research on Enterprise Carbon Flow Deconstruction and Emission Reduction Optimization Technology Based on Electricity Big Data	993
Yanyang Liu, Huizhen Tang, Ou Pu, Chunli Zhou	
Multi-Attribute Auction-Based Energy Trading for Multi-Aggregators in a Blockchain- Enabled Environment	1003
Baomin Li, Guofeng Zhiwei, Zhi Li, Zhendong Zhao, Yiping Chen, Haoyong Chen	
TCR: Data Annotation and Model Training for Datasets in the Telecommunications Field	1,000
Xiaotong Wang, Xiaoling Xia	1008
Research on Automatic Security Sensing Technology Based on Multi-Version Characterization	1012
Jiangang Lu, Shiming Li, Ruifeng Zhao, Wenxin Guo, Chen Wang	

## **Author Index**