2023 8th International Conference on Power and Renewable Energy (ICPRE 2023)

Shanghai, China **22-25 September 2023**

Pages 1-683



IEEE Catalog Number: CFP23H25-POD **ISBN**:

979-8-3503-2882-0

Copyright © 2023 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:
 CFP23H25-POD

 ISBN (Print-On-Demand):
 979-8-3503-2882-0

 ISBN (Online):
 979-8-3503-2881-3

ISSN: 2768-0517

Additional Copies of This Publication Are Available From:

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

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

(845) 758-2633



Fax:

2023 The 8th International Conference on Power and Renewable Energy

Table of Contents

Prefacexxxii Conference Committeesxxxiv	
Safety and Anomaly Detection of Power Transmission Lines	
Design of Intelligent Measurement and Control System for Crossing Frame	
Modeling Analysis and Measurement of Power Frequency Overvoltage Distribution of Long-Distance Transmission Cable	
Kai Yi, Zongyao Wang, Qichao Li, Mingyu Huang, Hongwei Han, Lei Jin Intelligent Structural Calculation and Control Design of The Intelligent Crossing Frame	
Research on Reverse Recovery Process Protection of Thyristors in Hybrid Circuit Breakers	
A Novel DC Control Optimization Strategy for Supporting Transient Voltage of HVDC Sending End System24 Qingxi Duan, Yanhui Qin, Zhen Liu, Yu Duan, Zimin Zhu, Xiaoyun Wang, Xing Ma, Weihong Zao	
Design and Application of Trigger Switch Scheme for DC Controllable Lightning Arrester29 Jiang Zhe, Li Zhibing, Liu Shan, Deng Weihua, Zhang Ran, Han Naizheng	
Development of Multi-Parameter Intelligent Diagnosis System for High-Voltage Cables	
Research on the Influence of 500 kV Fault Current Limiter on Line Distance Protection	
Research on Influence Factors in MMC-HVDC Short-Circuit Current Based on Improved Calculation Method44 Zhuoya Wang, Liangliang Hao, Jinghan He	
Research on the Detection of Hazardous Sources in the Vicinity of Transmission Lines Based on Deep Learning Algorithms	

Research on Topology Construction and Switching Control Strategy of Wind Power Multi-terminal, Lowfrequen	Су
Transmission System	56
Yi Lu, Lianhui Ning, Zhibin Ye, Chenchen Li, Kaijun Wang, Xiaojun Ni	
High Voltage Ride Through Strategy for Full DC Wind Power Generation System Through DC Transmission	63
Jiangshan Liu, Fengting Li, Chunya Yin, Ruikang Chen	
Research on lightning strike warning of overhead transmission lines by integrating PMU data	70
Yixiao Wu, Miao Yu, Jingxuan Hu, Jianqun Sun, Jingjing Wei, Shouzhi Zhang	
A Protection Scheme for Flexible Low Frequency AC System Power Collecting Line of Offshore Wind Farm Based	on
Transient High Frequency Energy	79
Xing Gao, Tianjia Sun, Tonghua Wu, Gang Yao, Yangyang He, Nengling Tai	
Control Models and Reliability Evaluation in Power Systems	
Optimal Configuration Method for Dynamic Reactive Power Compensation in AC/DC Receiving-end System	ns
Considering Reactive Power Support of Local Synchronous Generators	86
Qing Wang, Yuxuan Tao, Wenju Liang, Jiangchun Yu, Hongying He, Nan Liu	
Flexibility and Operation Economy of Cogeneration Unit with Air-cooled Condenser and High Back Pressure Heating	ng
System	96
Haisheng Yang, Guangtong Tang, Xiaopei Yan	
Novel Overcurrent Protection Method for VSC-LCC Parallel Hybrid DC Transmission System10	02
Xingyang Hu, Kun Chen, Kanjun Zhang, Longen Zhang, Ting Wang, Pangqi Ye	
Power System Flexibility Assessment Method for Matching Supply and Demand with Flexibility10	07
Sha LUO, Jian ZHOU, Nan FENG, Yun SU, Donghao Yang, Bing WANG	
Online Harmonic Phasor Measurement of Sub/supsynchronous Oscillation for Power System	13
Yuan Zhu, Zhebo Zhang, Lei Yang	
Study on Automatic Oil Sample Collection Device for Power Transformer of Photovoltaic Power Station1	18
Qiuren Su, Shenwang Li, Guangyu Zeng, Yiming Cai	
Optimal Dispatch Strategy of Electric Vehicles under Coupled Transportation Network and Power Grid12	23
Keming Luo, Xiaohan Fang, Yuan Fan	
A Deep Convolutional Embedded Clustering Method for Scenario Reduction of Production Simulation	29
Yishu Peng, Lin Ye, Pai Li, Ting Gong	
A method for improving small-signal stability via optimal allocation on the virtual inertia13	35
Mosi Liu, Zhiyuan Sun, Mingpo Li, Kun Zheng	

Anti-Power Supply Disturbance Optimization Design and Self-Correction Measurement Method of TMR Curren Sensor140
Shenwang Li, Zhaofei Jin, Qiuren Su, Li Liu, Likun Hu, Thomas Wu
Identification Method Based on Improved Hierarchical Multi-innovation Stochastic Gradient Algorithm148 Pan Hui, Li Zhengyang
Development of digital simulation system for switchgear operation status
Online Prediction Nadir Point in Primary Frequency Response of Power System Containing Converter-Based
Generation
Chonghong Fu, Shishuai Zhu, Qingyu Wang, Xinbo Zhou, Yi Wang, Zeyuan An, Bo Wang, Guowei Cai
Current Harmonic Suppression Method Based on SVHC and Improved SOGI for Active Power Filters168 Shiwei Chen, Chenli Jin, Ying Shen, Yao Zhang
Reactive Power Compensation of 10kV A-Line by MCR Reactive Power Compensation Device under MFAC Contro
Strategy174
Jia Yue Li, Zipeng Liang, Biao Tang, Ri Sheng Qin, Hui Li, Tian Hua Zhao
Electrical Equipment Fault Diagnosis and Abnormal Data Analysis
The combined application of vibration analysis and acoustic imaging for transformer fault detection
Diesel generator sensor fault diagnosis model based on LMD-SVM algorithm
A Fault Diagnosis Method for Electrical Equipment With Imbalanced SCADA Data Based on SMOTE Oversampling
and Domain Adaptation
Transient characterization of doubly fed induction generator during LVRT203
Yiyun Gou, Jinghong Zheng, Zhuang Liu, Yusheng Ding
Inter-turn Short Circuit Fault Detection of a Novel PMSM with Fault Tolerance
Research on the Current Status and Development Direction of Partial Discharge Monitoring and Diagnosis Technology for Large Pumped Storage Units

Numerical Simulation Model Construction for ISC Faults in Lithium-ion Battery	220
Zhifan Chen, Xianyong Xiao, Ying Wang, Long Li, Shuman Wei	
Application of controllable resistive-type fault current limiter to low-voltage ride-through of DFIG	227
Tingting Sun, Hongru Shi, Jiejie Huang	
A Fault Diagnosis Model for Wind Turbine Blade Using a Deep Learning Method	233
Linjie Li, Ying Xiao, Na Zhang, Wenyi Zhao	
Fault Diagnosis and Maintenance in Electrical Systems	
Identification Method of Short-Circuit Current Restricted Rules Based on Fusion of Gaussian Mixture Mod	del and
Decision Tree	238
Yuchen Dai, Yuangen Huang, Wei Xu, Yingjie Chen, Qi Pan	
Vibration Signal Analysis of a Reciprocating Air Compressor under Different Mechanical Faults	243
Wei Shen, Yihuai Hu, Congyue Li, Dexin Cui	
A Method for Generating Fault Current in VSC-HVDC Protection Testing	251
Chen Kun, Yao Qi-xin, Zhang Long-en, Hu Xing-yang, Chen Pan	
Enhanced Power Synchronization Based Vector Control with Fault Ride Through for VSC-HVDC	255
Rongcai Pan, Chunpeng Li, Yuexi Yang, Xiao Zhou	
Research on Fault Arc Detection Method Based on Multivariate Criterion	260
Mengqian Guo, Li'an Chen, Yongxin Jiang, Bin Huang	
Research on Topology and Fault Handling of AC/DC Flexible Interconnection and Distribution System Ba	sed on
Cloud-edge Collaboration	266
Yuanke Zhou, Deyong Mao, Zhenbiao Qi, Zhangbin Zhou, Jian Zhu, Tao Cao	
HVDC Transient Reactive Power-Voltage Characteristics and Impact of Control System Parameters	_
Commutation Failure and Recovery	273
Youhua Jiang, Meng Zhou, Peng Hu, Han Wang	
Fault Ride-through Strategy of Wind Power System Based on Flexible DC Interconnection	279
Ma Qinfeng, Ansu, Liu Mingshun, He Xianqiang	
Characteristic Analysis, Simulation, and Functional Control of Electronic and Ele	ctrical
Equipment	
Eco-driving Intelligent Systems and Algorithms: A Patent Review	285
Zhipeng Ma, Bo Nørregaard Jørgensen, Zheng Grace Ma	

Jinlong Jiang, Ning Yang, Muhammad Ilyas Menhas, Heping Huang, Hui Chen	J4
BEB-Net: Boundary Extraction Based Semantic Segmentation Network for Indoor Scenes in Smart Power Plan	
Ren Sheyi, Ren Wei, Wang Qiaozhi, Song Yuanyuan	
Non-Destructive Testing of Reinforced Concrete Utility Poles Based on Electromagnetic Induction	59
Study on rigid strength of magnetic pole connection of large capacity and high speed generator motor	53
Peidong Zhao, Xuping Wang, Yinru Bai, Long Zhao	
Condition of Motor Turn-to-turn Short Circuit	48
A New Coordinate Transformation Matrix Based on the Traditional Symmetric Component Method under t	he
Liao Fanghua	
Detection Method of Partial Discharge of Motor Stator Bar based on Optical Fiber Transmission Ultrasor Measurement	
Wei Xiao, Mengyuan He, Bing Luo, Haofeng Zhang, Yongsheng Xu, Shaojie Chen, Lin Yang	
Study of the effect of low-dose gamma radiation on the surface properties of silicone rubber materials	38
Seyed Ali Zamani, Mahdi Nili-Ahmadabadi, Amir Joulaei, Man Yeong Ha	
Numerical study on the influence of Helmholtz resonators on gas mixing performance	32
Xingyun Xi, Dakui Wu, Wenju Zhou, Huaqiang Teng	
Improved Detection of Defects in Dialyzers Using Enhanced FCOS Network	26
Study on Dynamic Threshold Multivariate State Estimation of Condenser Based on Marine Environment	17
Yang Zhang, Xuefan Zhao, Yinyin Lu, Xiaohua Ding, Fanxing Rao, Fangfang Guo, Weixing Lin	
Design of Driving Strategy and Protection Circuit Based on IGBT in MMC Sub-Module3	10
Study on Magnetic Field Interference Characteristics of Difference Magneto-optical Current Transformer3 Shenwang Li, Zhaofei Jin, Wenyang Deng, Qiuren Su, Likun Hu, Thomas Wu	03
Study on the error characteristics of all-fiber-optic current transformers under extreme operating environments 2 Xingyue Chen, Shipu Wu, Jin Qiu, Qing Huai, Yirun Ji, Xixiu Wu	97
YUHE HUANG, QING LIU, YU WANG	
Pipelines Based on the Stochastic Collocation Method	
Uncertainty Quantification and Sensitivity Analysis of High-altitude Electromagnetic Pulse Response of Buri	σu

Electric Power Supply System and Energy Storage Technology

Addressing Power Supply by Complementary Hydro-Wind-Solar-Gas-Storage Multi-Energy System: The Wenshan
Case Study
Jicai Wang
Optimal Scheduling of Port Clusters Integrated Energy System Considering Shared Energy Storage and Demand
Response 375
Yuang Chen, Yi Guo
A Multi-consensus Distributed Economic Dispatch Strategy for Integrated Energy System with Energy Storage 383
Yandong Zhao, Xue Li, Zhe Zhou, Yu Zhang
Optimal Scheduling of Mobile Energy Storage for Mitigating Voltage Problem in Distribution System389 Heng Zhuang, Ting Wu
Review of Gravity Energy Storage Research and Development
Liyang Liu, Yiming Ma, Yikai Li, Yumin Peng, Rufei He, Yao Li
Coordinated Operation Strategy for Multi-application Scenarios of Energy Storage in Traction Supply Power System
Considering Uncertainty400
Qian Ma, Leiyu Zhao, Jian Zhang, Jiaqi Mo, Zhiwei Xiao
Equilibrium Analysis of the Electricity Market Considering Strategic Bidding by Coalition of Renewable Energy and
Energy Storage407
Ziyan Zhang, Xian Wang, Shaohua Zhang
Energy Storage Configuration Method for Distribution Network Resilience Enhancement Using Two-Stage Game
Optimization
Shuai Liu, Yuwen Li, Heng Zhou, Kuan Cao, Yutian Liu
Converter/Inverter Model Design and Optimization Control
Improved droop control strategy for resistive inverters connected in parallel420
Kaibo Gao, Shupeng Zhou, Zhilei Yao
Event-triggered grid-forming control for power converters via switching approach
Jin Zhang, Chen Peng, Jing Shi, Minrui Fei
Research on Energy Storage Converter Based on Two-stage Power Converter
Yang Zhang, Yinyin Lu, Fangfang Guo, Jing Sheng, Fanxing Rao, Xuefan Zhao, Weixing Lin
Research on Optimization of Power Generation Guality of Marine Main Engine Electric Dynamometer System436 Zeang Jie, Guichen Zhang

Disturbance Rejection Control
Li Qin, Xinzhang Wu, Yuanpeng Guan, Guiju Zhang, Li Liu
High power density two-phase interleaved boost converter based on coupled inductor
Dual-Hysteresis Control of Bi-directional Noninverting Buck-Boost Converter for Wide Voltage Range in Energy Interconnected Systems
Yi Zhang, Donglai Zhang, Qing Liu, Jing Yu, Yilong Zhou
Research on Reduced Order Model of MMC Grid-Connected System
Power Oscillation Suppression Method for Multi-Parallel Synchronverters
DC bias suppression strategy for dual active bridge DC-DC Converter based on generalized second-order
differentiation
Research and Application on Variable Frequency and Phase-Shift Control Strategy of CLLLC Resonant Converter Based on LADRC
Baichao Song, Hui Li
Output Impedance Reshaping of Grid-connected Inverter Based on Voltage Feedforward under Extremely Weak Grid
Bo Yang, Xueqian Cao, Zhixin Wang, Xu Zhou, Yulin Zhang
Distribution Network Control and Optimal Dispatch
Classification of Transient Power Quality Disturbances Based on Digital Image Processing Techniques492 Feng Guo, Jian Li, Xu Xu, Yizhi Zhu, Xiaoyuan Luo, Wangkai Qian
Virtual Contribution Theory-Based Bidirectional Loss Allocation Method for Active Distributed Networks
Topology Identification of Low-Voltage Distribution Networks Considering Hidden Errors
Ship energy consumption analysis and transformation power distribution system solution based on real ship monitoring

Random Comprehensive Dispatching of Distribution Network Based on Expected Value Model517
Yan Yao, Dong Wang, Yungao Zhou, Zhong Wang, Caiwei Zhang, Yining Qian, Xiaoqi Zhang
Review on Evaluation of Power Communication Network, Dispatching Automation System and Distribution
Automation System
Lirong Liu, Yudong Wang, Peizhe Xin, Jing Jiang, Yi Wan, Hou Hui
Differentiated Distribution Network Reconstruction Strategy Considering Dual-Carbon Target Under the Background
of New Power System
Yuxiao Zhu, Yiqun Song, Ning Xie, Chengmin Wang
A Harmonic Mitigation Method Based on the PV and ESS Collaborative Operation
Xinru Wang, Shuangyin Dai, Ying Wang
Two-layer Optimal Dispatch of Distribution Networks with Distributed Resources
Xin Zhu, Wangda Chen, Ming Chen, Minghua Chu, Guozhen Yuan
Preferred scoring method for medium and low voltage distribution network infrastructure projects based on improved
hierarchical analysis method546
Lingling Ma
Control Strategies and Prospects for Flexible Multi-State Switch in Intelligent Distribution Network553
Minchen Wang, Rongrui Wei, Hua Liu, Congzhen Su, Guiju Zhang, Qiuren Su
Deep Learning based Real-time Approach for Robust Optimal Power Flow in Three-Phase Unbalanced Distribution
Systems
Haiyang You, Jin Yang, Chengwei Lou
Total Supply Capability Evaluation of Distribution Systems considering Soft Open Points and Network
Reconfiguration
Shan He, Qilin Hou, Jing Wang, Yuming Zhao
Simulation and Reliability Evaluation of Distribution Network Systems
Optimal Scheduling of Flexible Loads for New Building Clusters Considering Potential Games571
Dongming Liu, Zhipeng Xu, Kanghua Zhong, Wei Fan, Yu Liu, Yongjun Zhang
A Method of Weak Node and Weak Line Identification in Distribution Network Based on Probabilistic Power Flow
578
Zhiyu Zhao, Shen Liu, Xuan Li, Yue Yu, Xiaoguang Wang, Shipo Zhao

Research on True-type Test Technology of Intelligent Circuit Breakers and Intelligent Integrated Terminals II
Distribution Networks under Different Faults
Cheng Chen, Shang Chen, Mingfeng Shao, Hui Li, Jing Yin, Jiangbo Chen
A Differential Protection Scheme for Distribution Networks with Multiple T-connected Inverter-Interfaced Distributed
Generators
Yunbo Li, Lanjun Yang, Lei Hu, Liang Zhang
Design of Cascade Power Electronic Transformer Based Flexible Interconnection System for Distribution Network
Weiming Chen, Xiaochun Weng, Shichuan Chen, Han Wu, Yuanliang Fan, Zewen Li
Topology Identification of Distribution Network Considering Radial Bus Connection Characteristics
Low-Voltage Management for Distribution Network Based on Parallel Flexible DC System: The Fujian Experience
Weiming Chen, Xiaochun Weng, Shichuan Chen, Han Wu, Yuanliang Fan, Zewen Li
The Optimal Location Algorithm of SAPFs in Distribution Network Based on Harmonic State Estimation612 Xiaoqing Yin, Hao Yi, Zebin Yang, Fang Zhuo, Yao Zhang, Wei Wei
Reliability Assessment of Active Distribution Network with Unclear Topology
Pengcheng Zhang, Jinsen Liu, Ning Luo, Ludong Chen, Fei Zheng
Reliability Assessment of Honeycomb Distribution Network Based on Quasi-Sequential Monte Carlo Simulation Method
Yang Han, Xiang Sheng, Liu XiaoHui, Miao AnKang, He MinZhen, Yuan Yue
Research on Comprehensive Treatment Device of Low Voltage Distribution Network Based on Improved Particle
Swarm Optimization Algorithm630
Huaihua Zheng, Hongsheng Huang, Shuai Yang, Yifan Pang, Zhi Wu
Self-healing distribution automation terminal based on IEC61850 protocol
Huang Chao, Sun Qiao, Ou Qinghai, Li Moujun, Du Qixia
A novel distribution system weak node identification method based on finite synchronous phase measuremen
information
Jiandong Si, Jian Yang, Caiyang Yu, Yizhi Zhu, Pengcheng Hu, Zhi Wu
Event-Triggered State Estimation for Distribution Systems with SCADA and Smart Meter Data

Smart Grid Configuration and System Stability Analysis	
Distributed Fixed-Time Secondary Control for DC Microgrid with Less Information Exchange Junwei Chai, Xue Lyu, Minghao Wang, Zhao Xu	652
Transient Stability Analysis Technology Combining Machine Learning and Causal Analysis Feng Luo, Xianyu Zha, Jian Zhang, Xiaoqin Xia, Qi Pan	658
Frequency Stability Analysis and Optimal Control Method in DG-BESS Microgrid System Haobin Zhu, Haohao Hong, Jiwei Guo, Zheng hong Chen, Jian Wang, Chen Wang	665
Optimal Planning of HVDC Converter Stations for AC-DC Mixed Power Grid with High Penetration of Energy	
Jiapei Zhou, Longze Kou, Fangyuan Li, Qi Liu, Zheng Fan, Dong Liu	
Research on Harmonic Transmission Characteristics of AC power grid	676
Research and Development of BPA-DIgSILENT Power Grid Model Conversion Software	684
Improved droop control strategy for AC microgrid	689
Smart Grid Control and Optimal Dispatch	
Stackelberg Game Model for Optimal Dispatching of Electricity Consumption for Community Microgrid	d Considering
Demand Response Mechanism	694
Di Tan, Xiaohan Fang, Yuan Fan	
Dueling double deep Q Cooperative Control Algorithm for Distributed Grid Tao Wang, Jiangnan Li, Tian Mao, Wenmeng Zhao, Caiyu Chen	700
Protection Logic Based on Intelligent Phase Change Switch Phase-to-Phase Short Circuit Fault	708
Economic Scheduling of Multi-microgrid Systems Based on Distributed Event-triggered Consensus Stratingting Xu, Xiaohan Fang, Yuan Fan	ategy714
Distributed Optimal Dispatch of Active Distribution Network Considering Carbon-electricity Trading Xiang Yuan, Lu Dong, Chutian Yu, Meijin Gao, Lijun Zhang, Jie Yu, Xueer Wang, Xiaoyan Bian	720
Virtual Inertia Enhancement of DC Microgrid Based on Adaptive Motor Load Control	725

Research on the Influence of Phase Shifter Interconnection on Differential Protection of 110kV Power Network731 Chen Li, Zhe Wang, Hongda Zhao, Mingxia Zhu
Optimization Strategy for Doubly Fed Induction Generator with Variable Coefficient Frequency Regulation737 Changcheng Wang, Yunfeng Huang, Zheng Li, Xin Wang, Mingke Wu
Analysis, Design, and Control of Interlinking Dual Capacitive Filter Inverters in Microgrids742 Wenyang Deng, Ziwen Liu, Yongjun Zhang, Mingli Chen
Collaborative Operation and Control in Novel Power Systems
Research on circulation suppression of multi-module parallel power router based on zero-sequence component compensation
Songfeng Wang, Zihao Xue, Xiaohong Wang, Xiaochun Mou, Qian Cheng, Zichang chen
Power Electronics Impedance Enhancement Based on a Supplementary Damping Control of Virtual Synchronous Generator
Yankai Xing, Zhengtong Yang, Guangdou Zhang, Jian Li, Olusola Bamisile, Qi Huang
Asynchronous Switched Event-Triggered Load Frequency Control in Multi-area Power Systems With Stochastic Actuator Failures
Yajian Zhang, Jiafang Zhang, Chen Peng, Fei Xue
Feedforward Tracking Control of Main Steam Temperature with Disturbance Rejection
A Risk Decision Method for Online Emergency Control Adapting to Strong Uncertainty Environments771 Wang Tu, Junjun Yang, Jingjing Ruan, Peng Chen, Ming Zhao
Early warning of low-frequency oscillations in power system with Vinnicombe criterion fused with PMU data779 Jianqun Sun, Miao Yu, Jingxuan Hu, Shouzhi Zhang, Jingjing Wei, Yixiao Wu
Dynamic data modeling based on Kalman state estimation
Resilience Enhancement of Urban Energy Systems through Coordinated Operation of Electric Buses792 Heng Hu, Xi Zhang, Meng Hou, Qingwei Guan, Qinghe Sun
2-D Images Combination and Expanded-Channel ResNet Based Power Quality Disturbance Recognition Approach
Jieyu Ou, Yi Zhang, Jinrong Lin, Bijie Liu
An Adaptive Detection and Clustering Method of Harmonic From Noisy Signal Based on Prony804

Optimization Scheduling and Adequacy Evaluation of Cascade Hydropower Stations Considering the Extreme
Weather
MingKui WEI, Liang LU, Hong ZHOU, Li SHEN, Qing WANG, Bangan HU
Novel Battery Design and Health Status Estimation
State Vector Evaluation of Energy Storage Plants Considering Battery Loss Characteristics Under Different
Operating Conditions
Xiao Rong Huang, Guan Ke Liu, Da Wei Lu, Wei Lin, Xi Liang Dai, Wen Hui Lin
A State-of-health Estimation Method for LiFePO ₄ Batteries based on Gaussian Process Regression using Partial Charging Curve
Jianghao Shi, Changjiang Ju, Yiming Wang, Po Xu, Xiaotian Yu, Zekai Chen, Guohuan Wang
Battery Capacity Degradation Trajectory Estimation for Real-World Electric Vehicles Based on Complete Ensemble
Empirical Mode Decomposition with Adaptive Noise
Haoxiang Xiang, Yujie Wang, Xingchen Zhang
Spacecraft Power Charging Regulator Based on Two-domain Control
Yuting Pang, Xinyu Gao, Ruoxuan Wang, Guofei Teng
An Online OCV Calibration-Based Adaptive SOC Estimation Approach for Lithium Battery
Jiarui He, Keting Wan, Lingxia Lu, Miao Yu
A Novel Dual AUV Wireless Charging System Based on Underwater Hybrid Energy845
Zhijie Zhang, Jie Yang, Sen Yang, Zongju Cai, Xiaofang Yue, Yuying Zhou
Health State Estimation of Lithium Battery Based on Wavelet Packet Transform and Transformer851
Jionghui Wei, Xiaorong Huang, Qingbo Zhang, Yang Liu, Shuping Wu, Zhaofeng Chen
New Energy Power System Control and Dispatch
A Quantile Intervals Prediction Based Power-voltage Control Method with Storage Regulation856
Wei Fan, Yang Yi, Jiaxing Huo, Yu Liu, Lu Miao, Hongyan Xiao
Flexibility Resources Aggregation and Disaggregation Method Considering Renewable Consumption863
Quan Yuan, Wei Wang, Ziqiang Wang, Liang Xiao, Chunxiao Liu, Yikai Liu, Xiaoting Chen
Grid-Connection Performance Evaluation of Renewable Energy Station
Haifeng Zhang, Yifu Zhang, Chao Chen, Dexin Li, Xiaoyu Peng
Value of CCUS Technology to the Modern Power System and Policy Framework Design
Siyu Zhang, Qing Shi, Ning Zhang, Yuchen Cao, Tao Cai, Hongcai Dai

Yingbei Yao, Jiaying Yang, Dingyuan Feng, Yuxuan Chen	
Parameter tuning of new type energy virtual synchronous generator based on physics-informed reinforceme	nt
learning88	38
Jian Qiu, Huanhuan Yang, Jianxin Zhang, Jiemai Gao, Tuo Jiang, Qin Gao, Junquan Chen, Guanghu Xu	
Extreme Scenarios of High Percentage of Renewable Energy Connected to Power System: A Review on Syste	m
Power and Electricity Balance Aspect	94
GUO Hongxia, CHEN Lingxuan, MA Qian, ZOU Guilin, LIU Shuangquan	
Virtual Power Plant Optimization Scheduling and Energy Management	
Economic assessment of a methane production approach integrated with the carbon capture of a coal power pla	
Xingang WANG, Gaolei WU, Hailiang LIU, Zhiyong YU, Xin YUAN, Heng CHEN)4
Research on Bidding Strategy of Virtual Power Plant Considering Dynamic Time-varying Domain99 Wenguang Ma, Deli Ye, Yanbo Hu	10
Optimal decision method of load aggregator in virtual power plant mode9	16
Tianding Xie, Ning Xie, Chengmin Wang	
An Optimized Configuration Method for MESV Connected to VPP92	22
Long Li, Ying Wang, Xianyong Xiao	
Comparative Evaluation of Thermoelectric Decoupling Potential and Economy of Multi-type Small Capacity Therm	ıal
Power Units In Virtual Power Plant 92	28
Yao Fan, Zhang Junqi, Zhao Dan, Zheng Qiwei, Chen Heng, Zhao Shuyuan	
Day-ahead optimization strategy considering demand response in power-based virtual power plant93	37
Songsong Chen, Ke Chen, Qingrong Zheng, Jianli Zhao	
Aggregation-based Self-dispatch of the Virtual Power Plant with Massive Controllable Batteries94	44
Mengmeng Su, Zhanfei Qie, Yong Zhang, Min Li, Zhongkai YI, Ying Xu	
Bi-level configuration optimization model for multienergy capacities in virtual power plant cluster94	49
Juan Zuo, Wenbo Wang, Chongxin Xu, Yu Ji	
Economic Dispatch of A Virtual Power Plant with Wind-photovoltaic-storage Considering Demand Response98	55
Jiayu BIAN, Zhuan ZHOU, Zhiyong YU, Jin YU, Kaijie GOU, Heng CHEN	

• Digital Operation and Decision-Making of Modern Power Grids

Electric Network Stimulation-Response Relationship and Its Characteristics under Time-Varying Amplitude and Frequency
Rongxin Sun, Xiaoming Yuan
Digital Power Grid Technology Maturity Assessment Based on the Delphi Method
FTL-EDGE: A Feature Federation Transfer Learning Algorithm For Single Microgrid Edge Computing981 Qi Xu, XiaoHong Shi
Energy Optimization of Microgrids Based on Electricity-Carbon-Green Certificate Synergy987 Xiaoying Bian, Lu Tan, Nian Liu
Robust economic dispatching algorithm of uncertain microgrid based on tie-line power tracking993 CHEN Fei, WANG Peng, ZHENG Lin, JI Keqin, HOU Jiansheng
Design of Online Verification and Optimization Decision System for Emergency Disposal of Power Grid Faults1002 Jicheng Du, Ming Zhao, Changjiang Jiang, Xianyu Zha, Lingchuan Li, Tao Liang
Distributed Control Strategy of DC Microgrid Based on Convex Relaxation Method
Comprehensive Carbon Emission Factors of Power Supply in Regional Grids Model Using Proportional Distribution
Huangqiang LI, Ran SHEN, Ziwei LIU
Advanced Physical Energy Storage Technology and Equipment
Organic Rankine cycle and absorption heat pump energy system based on valley electricity utilization and molten salt energy storage
Power System Restoration Method With the Flywheel Energy Storage Support
Frequency Emergency Control Strategy using Energy Storage based on Model Predictive Control
Research on the application of energy consumption monitoring technology in the construction of pumped storage power station
Fanqi Huang, Hao Zhang, Yikai Li, Yumin Peng, Yiming Ma, Zengtao Zhao

System
Jian Tang, Jianfeng Liu, Xintao Wang, Heran Kang, Wenbo Hu, Xizhi Shi, Peihong Yang
Application Analysis of Intelligent Monitoring System in Pumped-storage Hydroelectricity
High-Voltage Nanosecond Pulse Generator Based on DSRD Series Components
Analysis and research on generator design technology of variable speed pumping and storage units at home an abroad
Tao Liu, Jiansheng Yu, Kai Lin, Xingchun Lei, Peng Xu, Zhengxin Cao
Research on the Debugging Strategy of Doubly Fed Variable Speed Pumped Storage Units
Voltage Stability Control and Parameter Optimization in Power Systems
Power-Imbalance Stimulation and Internal-Voltage Response Relationships Based Modeling Method of Multi-Timescale PE-Interfaced Device
A Transient Voltage Stability Preventive Control Strategy for DC Receiving-end Power System
Analysis of Advantages of Frequency Modulation and Voltage Regulation for Doubly-fed Pumped Storage Unit
Liu Xing, Wang Xingang, Ren Yongan, Ji Supeng
Effect of Load Ratio Parameter on Electric Spring Performance for Critical Bus Voltage Stabilization
Control Strategy of Voltage Compensation with Harmonics for Dynamic Voltage Restore
Influence Mechanism of PLL on Active/Reactive Voltage Excitation and AC current Amplitude/Frequency Response Relationship of LCCHVDC station
Shuchan He, Xiaoming Yuan, Jiabing Hu
Data-driven Strategy for Model Identification and Voltage Estimation in Low-voltage Distribution Networks 110 Yatao Shen, Yagun Jiang, Wenmei Li, Ziwen Gu

Hybrid Generalized Short Circuit Ratio Considering the Flexible DC
Chaosheng Wang, Rongze Pang, Qiulong Ni, Xiaolei Yang, Chong Wang
Modified APC Strategy for Doubly Salient Electro-Magnetic Generator With Controlled Rectifier Considering Dramatic Load Changes
Zhenyu Lei, Shuanghong Wang, Zixin Li
Control strategy and simulation analysis of windsolar-storage integrated coupling hydrogen production system 1122
Shuaiqi Zhang, Yingjun Guo, Hexu Sun, Yuyang Zhao, Pengcheng Li, Weichao Dong
Research and Application on Output Voltage Stabilization of DAB Converter Based on LADRC with Reduced-Order
Model
Shenqi Gao, Hui Li
 Advanced Control Technology for Power Generation, Operation and Low-Carbon Power Transactions Based on Renewable Energy
Portfolio Trading Strategies for Integrated Generators in the Electricity Mid to Long-term and Spot Markets 1134
Guohui Lan, Jing Yu, Mingxing Guo, Li Lan, Yudi Wang, Donghan Feng
Real-time pricing method through market auction based on multi-agent reinforcement learning
Analysis and Research on the Energy-carbon Flow in the Source-grid-load of Enterprises with Coal-fired Self-owned
Power Plant
Jianan Zhao, Huirong Zhao, Jincheng Yang, Haili Zhang, Hao Zhang, Daogang Peng, Jiyang Fan, Zhitan Li
A Right-and-Responsibility-Matching Network Usage Charge Scheme for Distributed Energy Trading1151
Peng Li, Yihan Zhang, Meng Yang, Junhui Liu, Xing Chen, Yi Yan, Zheng Yan
Stochastic Optimal Scheduling of Photovoltaic-Energy Storage Charging Station Based on WGANGP Scenario
Generation
Xiang Bao, Yingchen Chi, Hua Zhou, Yan Huang, Xiu Wan, Fan Chen
Market equilibrium analysis under the coupling of carbon market, energy usage right market and electricity market
Gang Chen, Kun Fan, Zhonghua Xie, Shaoyun Hong, Mo Qi, Hongjun Qin, Jiawei Gong, Haoyong Chen
Study on profit model and operation strategy optimization of energy storage power station
Peng YUAN, Jifeng CHENG, Qingsong ZHAO, Jiajue LI, Gang LIU, Zhonghui WANG, Miao WANG

Modeling and forecasting implied long term oil price with ARIMA model
Yuan Qian, Huan Zheng, Bihui Chen, Yichen Ni, Shanming Huang, Sulian Wang
Multi-region energy scheduling method based on evolutionary game
Jun Zhang, Yuehan Huang, Siliang Liu, Dongming Liu, Yulong Huang, Yongjun Zhang
Analysis of Incentive Policies and Typical Models for Electric Vehicle Participation in the Market1187
Kaiyu Zhang, Yaning Ji, Ran Chen, Bing Shen, Shanshan Shi, Yun Zhou
Optimal Spot Market Trading of Electricity Service Provider under Renewable Energy and Price Uncertainties 1192 Zhouwu Xia, Wenzuo Ma
Optimal Participation of Electric Vehicle Aggregators in Real-Time Energy Market1198
Wanli Wu, Jizhong Zhu, Linying Huang, Shenglin Li, Haohao Zhu, Chenke He
Study on prediction of energy storage penetration rate for electric futures based on ARMA-GARCH model1204
Siting Dai, Danni Cui, Qi Zhang, Wenyang Deng
The Optimization Clearing Model and Algorithm Research of Electric Heat Storage Participates in Electricity Spo
Market to Improve Renewable Energy Absorption Capacity
Gang LIU, Miao WANG, Qingsong ZHAO, Zhonghui WANG, Meishan ZHANG, Dianyang LI
A Study on the Carbon Trading Systems And Demand Side Carbon Emissions Obligation1216
Zhou Yang, Xingqiu Wei, Juntao Pan, Jie Li, BeiBei Wang, Chenxuan Wu
Design and Evaluation of Demand Side Market Based on Balance Unit Mechanism of German Electricity Marke
Kun Li, Guoqing Li, Zhengzhong Guo, Xiaofei Li, Yanmin Liu, Xu Tian
Research on the operation strategy of energy storage power station under the environment of power market1226
Zhonghui WANG, Miao WANG, Peng YUAN, Gang LIU, Jinze LI, Zhi FA, Jifeng CHENG
The Impact of Carbon Emission Trading Pilot Policy on Energy Security
Han Chen, Qiyuan Cai, Yinan Li, Jinyu Chen, Hanxing Lin, Wenxin Chen
Low carbon regulation and development evaluation system of coal-fired captive power plants based on superiority
chart
Jingyuan Wang, Huirong Zhao, Gang Wang, Pengyu Zhang, Hao Zhang, Daogang Peng, Ying Li, Guofeng
Zhang
Optimization Design of the Black Start Process of Auxiliary Power Supply System for Shenzhen Pumped Storage
Power Station
Dangi Chon, Do Wan, Wonking Ha

Research on the Key Technologies and Development Roadmap for Hydrogen in China1247
Siyu Zhang, Qing Shi, Ning Zhang, Yuchen Cao, Tao Cai, Hongcai Dai
A day-ahead electricity price forecasting algorithm considered with multidimensional factors1252
Yanjun Dong, Jing Zhao, Juan Su, Songhuai Du
• Wind Farm Simulation, Wind Power Generation System Control, and Power Generation Prediction
Control Strategy for Frequency Support Based on Modular Multilevel Matrix Converter with Emulation Inertia1258 Yibo Li, Yafeng Jiang, Qiuwei Wu, Jian Chen, Qian Zhou
Auxiliary modelling error and probability density function based neuro-fuzzy short-term wind power prediction 1264 Jianfang Li, Li Jia, Daogang Peng, Rui Hou
Prediction Method of Wind speed and Wind power Under the Influence of Multi-factor Coupling Under Extreme
Weather Conditions
Liyuan Deng, Haibo Shen, Lingzi Wang, Weizhi Huang
Optimal Design of Topological Structure for Mountainous Wind Farm Collection System
Study On Fine Simulation Method Of Wind Field In Complex Terrain
Fan Zhao, Xianzhuo Wang, Jian Zhang, Honglin Ma
Wind Direction Numerical Simulation and Application Based on Wind Direction Vector Correlation and Two-dimensional Spatial Neural Networks
XU-Bingkun, WANG-Xiaoyu, Bai-Haojiang, Zhou-Yuangui, Jia-Xiaowei, Tian-Pengfei
Robustness Assessment of Wind Power Prediction Under Cyber Security Attacks and its Impacts on Power System
Operations
Jianping Zhang, Xinyue Li, Linxin Miu, Yuxuan Chen
Short-Term Wind Power Interval Prediction Method Based on Deep Convolution Neural Network
Dual-channel Dynamical Event-Triggered Load Frequency Control under Attack for Wind Power Systems with
Multiple Time-varying Delay
Hanmei Zhou, Qishui Zhong, Shaoyu Hu, Jin Yang, Kaibo Shi
Research and Application of Secondary Air Adjustment System for Energy Saving and Nitrogen Reduction in
Secondary Reheat Units
Hong Hu, Libin Wen

Research on Optimal Allocation Strategy of Hybrid Energy Storage for Wind-Photovoltaic Hybrid Generation System 1321
Lin Zhang, Tianwen Zhang, Ke Zhang, Wenbo Hu
Asymmetrical High-Voltage Ride Through of Brushless Doubly Fed Induction Generators for the Wind Power
Generation Based on Improved Indirect Power Control
Yongen Che, Shuhong Wang, Huibin Fan, Jiabin Li
Combined Wind and Photovoltaic Power Forecasting Based on Attention-BiLSTM Multitask Learning for Renewable
Energy System
Yingjing He, Cenfeng Wang, Keping Zhu, Yuejiang Chen
Wind-CSP collaborative optimization method based on source-load multivariate correlation1340
Jianbin Yang, Lin Ye, Yuanyuan Shi, Kaifeng Wang, Zhuo Li, Ming Pei
Short-term Wind Power Prediction Based on Error Estimation
Yuhan Hu, Lipeng Zhu, Jiayong Li, Yang Zeng, Limengqian Zheng, Yunhe Hou
Feasibility Study of DC Offshore Wind Farms Using Multiphase Generator-Rectifier
Xin Guo, Qian Zhang, Pengzhao Wang, Ruochen Tang, Xiangjun Zeng
Price Risk Assessment of Electricity Markets Considering the Uncertainties of Natural Gas Supply1358
Junchao Cheng, Lizhong Xu, Ke Sun, Qiwen Tang, Ziqing Zhou
Short-term wind power prediction based on singular spectrum analysis and modified ConvBiGRU1364
Quanchun YAN, Yao YAO, Wen GU, Jian YU, Libo YU, Liang WANG
Investigation of the Correlation between Weather Parameters and DC total Electric Field
Huichun Xie, Jiangong Zhang, Xingfa Liu, Ni Li
Advanced Battery and Energy Storage Technology
Control strategy for energy storage batteries participating in secondary frequency regulation considering the
frequency characteristics of the power grid
Yuan Wang, Daogang Peng, Huirong Zhao, Jianfei Zhu
Two-stage charge and discharge optimization of battery energy storage systems in microgrids considering battery
state of health
Zenghui Zhang, Kaile Zhou, Shanlin Yang
Resilience Improvement Strategy of Distribution Network in Water Project Based on Battery Energy Storage System

Zhehao Hu, Huiqun Yu, Daogang Peng, Haoyi Sun
Research on Multi-application Strategy for Hybrid Energy Storage Considering Battery Life
Scalable dissipative analysis for multi-wind turbine combined with common battery energy storage system140 Zhi Qiu, Yang Song, Mingcong Du, Wanqing Zhao
Performance analysis of a pattern-matching control strategy designed for the hybrid power system used in fuel covenicles
Wenli Wang, Juncheng Yang, Shanshan Cai, Song Li, Zhengkai Tu
A Secondary Compensation Control Strategy Based on Energy Storage Battery SoC
Low Carbon Economic Optimization Dispatching of Medium and Low Voltage Distribution Systems Based on Carbon Emission Flow
Chutian Yu, Siqi Liang, Lijun Zhang, Meijin Gao, Jiangqian Huang, Yanhan Zhu, Tianwei Liu, Xiaoyan Bian
Power Load Model and Forecast Calculation
Research and Application of Calculation Method of Recovering and Replenishing Electricity Based on Load Curv Restoration
High-capacity Multi-level Emergency Load Shedding Technology for Electrolytic Aluminum Load
Research on adjustable load classification and aggregation and external characteristic identification method144 Yuanhao Gao, Zhenlan Dou, Chunyan Zhang, Chuanwen Jiang, Lingling Wang
A method for evaluating the adjustable capacity of electrolytic copper load based on modeling of power regulation characteristics
Lingfang Li, Jie Zhang, Yixuan Chen, Cong He, Shanquan Pi, Siyang Liao
A Demand Side Adjustable Load Cluster Regulation Method Based on Alternating Direction Multiplier Method146 Chong Shao, Zhiwen Liu, Yan Li, Yuejia Hong, Ran Cheng, Yao Duan
Incremental Learning for Appliance Identification Based on V-I Trajectory Signature

Research on energy management of multi-charging station
Building Load Prediction Model Based on Integration of Mechanism and Data in District Heating Systems1480 Ning Zhang, Xiaojie Lin, Wei Zhong, Liuliu Du-Ikonen
Research on optimal scheduling of integrated energy system based on coordinated control of flexible load1485 Li Tianyu, Xia Yu, Ma Gang, Yu Sun
A Robust Parameter Identification Strategy of Composite Load Model With a Neural Differential Algebraic Network
Songyan Zhang, Xinran Zhang, Chao Lu
The operation optimization method of distribution grid considering the access of multitypes adjustable loads1499 Yan Li, Zhiwen Liu, Chong Shao, Yuejia Hong, Yao Duan, Ran Cheng
Load Adjustable Potential Assessment Considering Load Flexible Control and Air Conditioner Load Response in Extremely Hot Weather
Liang Lu, Mingkui Wei, Peng Zhang, Yiyu Wen, Yuxiao Yang, Wenying Mao
Carbon Footprint Tracking Based on Non-intrusive Load Monitoring Technology
A Multivariate Load Forecasting Method Based on ESAM-MTL Model1516 Yunan Wang, Ming Chen, Lufeng Xuan, Jin Yu
Optimized scheduling of electric water heaters under consideration of water-using time elasticity1522 Zhonghui Zuo, Yuqing Bao
 Planning, Control, and Resilience Enhancement in Low-Carbon-Driven Power Systems and Electricity Markets
Carbon Footprint Analysis of Processes in Typical Steel Enterprises1528
Weisheng Zhang, Yuzhen Sun, Quan Zhou, Huirong Zhao, Daogang Peng
Optimal Electricity Dispatch Strategy for Urban Residential Quarter Considering Nearby Battery Swapping Station1534
Lingyu Guo, Weidong Hu, Yang Du, Zhongguang Yang, Xianghong Xiong, Simin Wu, Yipu Li, Yun Zhou
Comprehensive Cost and Benefit Evaluation of Carbon Reduction Technologies for Power Transmission and Transformation Projects Based on Hierarchical Analysis and Entropy Power Method

Capacity and Operation Planning Model of Energy Storage System in Power Spot Market
Grid adequacy evaluation method considering the influence of new energy transmission channel transmission capacity
Junnan Chen, Rui Zhou, Minghui Yan, Weilun Ni, Xiaotong Xu
Planning of Park Integrated Energy System with Peer-to-peer Trading Cooperation under Electricitycarbon-greer Certificate Market
Jing Liu, Tiantian Chen, Zhen Dong, Zeqi Liang, Ling Luo, Donghan Feng, Qiyuan Liu, Yun Zhou
A Market-based Generation Expansion Planning Model with Carbon Emission Reduction Target
Research on Distribution Network Expansion Planning Considering Prosumer Participation in Ancillary Service Market
Pan Dai, Zhaoyu Liu, Jiamin Yin, Jingjing Huang, Zhesheng Hu
Optimal Planning for Energy Storage Plants Considering Location and Configuration
Resilience-Constrained Planning of Energy Hub Considering Waste Heat Reuse of Data Center
Optimal Power Flow for AC Power System based on Convex Relaxtion with Semi-Definite Programming1590 Da Sang, Yaoliang Zhu, Chen Qian, Yuxuan Chen
The Impact of the COVID-19 Pandemic on Economy and Electricity Consumption in Thailand
Carbon emission evaluation and potential assessment of energy saving and carbon reduction for iron and stee enterprises
 Yingying Niu, Yuzhen Sun, Quan Zhou, Daogang Peng, Huirong Zhao Voltage Control and Analysis in High Proportion of New Energy Power System
Development and application of on-line analysis and optimal control system for short-circuit current of AC-DC hybrid power network
Huanhuan Yang, Xiaotong Xu, Zhenyu Mao, Jiabin Zhang, Qin Gao, Wang Tu
A New Control Strategy for VSG on Improving Voltage Support Ability for Power Network with High Penetrated Renewable Energy
Yuchen Qi, Shihao Wang, Tianli Song, Haoen Li, Ruanming Huang, Yumeng Jiang, Yinzhe Xie, Na Li

-Based Two-Stage Robust Balance Analysis Model for High-proportion Renewable Energy Integration HVDC System	
Jie Qi, Jincheng Guo, Yaodan Zhang	
Optimal configuration of coupling equipment for electric-gas integrated energy system considering the influence of	
voltage sag	
Yi Zhang, Jiazhong Zhang, Yan Zhang, Shuqi Zhang, Rong Jia, Yifan Wu	
A New Coordinative Control Strategy for Renewable Generation and STATCOM during Imbalanced Voltage Sags	
Yumeng Jiang, Shihao Wang, Yuchen Qi, Haoen Li, Ruanming Huang, Tianli Song, Zhu Chen, Yurong Li	
Stability Analysis and Fault Detection of Photovoltaic Modules	
A Vulnerability Modeling Method for Photovoltaic Generators Under Typhoons Disaster Based on Bayesian Theory1641	
Lifang Wu, Qingren Jin, Biyun Zhang	
A data-driven fault diagnosis method for photovoltaic modules	
Yang Jiurong, Sun Xingjian, Ma Zhuoran, Han Xiaojuan	
Decentralized Control Strategy for Modular Threephase Inverters with AC/DC Power Decoupling1652	
Xiaolu Ge, Shangzhi Pan, Kemin Dai, Li Wei	
A Transient Voltage Support Strategy Based on Medium Voltage Photovoltaic Grid-Connected Converter During	
Commutation Failure in the LCCHVDC System	
Hong Lu, Yali Liu, Yijia Yuan, Weihua Deng, Pengfei Su, Xirui Jiang	
Influence of Permeability on Voltage Stability of PV Inverters through LCC-HVDC System1665	
Fei Li, Huan Liu, Rui Gan, Yuanze Zhang, Ming Li, Xing Zhang	
Photovoltaic System Construction and Grid Connection Technology	
Study on the Impact of Considering Dynamic Thermal Rating on Distributed PV Acceptance Capacity1670	
Lei Chen, Mengshuang Gan, Xinhui Miao, Lin Ye, Junjie Zheng, Kaifeng Wang	
Calculation of the Maximum Hosting Capacity of Distributed Photovoltaics in Distribution Networks Considering	
Flexible Interconnections	
Tong Sun, Yi Song, Kai Yuan, Ruosong Hou, Jiakun An, Wenguang Jin, Shenxi Zhang, Haozhong Cheng	
Evaluation method for transient reactive power voltage regulation capability of photovoltaic power stations	
considering power grid status	
Tao Zhang, HaiNing Shi, Tang Tang, Hong Ying, Pingguo Zou	

Photovoltaic Simulation Design Research Application of PEDF Building Power Distribution System1689 Tian Mao, Jianqi Xu
A Multiple-Complex Coefficient-Filter-Based PLLLess Power Quality Control Method for Photovoltaic Generation Systems
Yao xueheng, Zhu hong, Shi miaogen, Wang chaojun, Bao zhengmin
Research on Soft Switching Optimization Control Strategy for ANPC Half-bridge DAB under Wide Voltage Range
Zhiguang Lin, Kailong Chen, Weihua Deng, Jie Li, Naizheng Han
A chance-constrained dispatch for distribution networks to improve flexibility
Guowei Zhang, Fan Li, Xiaoqi Zhang, Wei Wang, Jinguang Xu, Chengjun Yan
Deep Learning-Based Prediction of Maximum Carrying Capacity of Key Transmission Sections for Photovoltain
Gu yujia, Wang jiecong, Li hongqiang, Lu guangming, Zhang hanhua, Zhang lulu
Doubly Grounded Dual-Input Transformer-less Three-phase Inverter for PV-battery System1719 Yifeng Han, Zhilei Yao
Photovoltaic Power Station Operation Monitoring and Energy Storage System
Design and Application of Photovoltaic Energy Storage DC Technology In Municipal Stormwater Detention Tank System1724
Yuan Zheng, Li Yijun, Hou Yuanjun, Zhao Jinbin, Wang Zhixin
Distributed PV cluster partitioning strategy based on GAN data synthesis federation clustering
Economic Evaluation of Build-in ESS Technology for PV Plant in Spot Market
Harmonic Compensation Analysis of Grid-Connected System Having Photovoltaic and Energy Storage Integrated
with Parallel Active Filter
Shiwei Chen, Xuhua Xia, Lujun Jiang, Yao Zhang
Dispatching Strategy Based on Energy Storage Loss and Data-Driven for Urban Integrated PV and Energy Storage Charging Station
Yutao Hu, Jianhua Wang, Xiaogang Pan, Feng Zhang

Comprehensive benefit evaluation method for photovoltaic power generation projects based on cloud model1755 Jiandong Li, Wenhua Han, Yufei Wang, Yapeng Wang
Research on the Characteristics of Suppressing Photovoltaic Radiation Fluctuations in Ice Storage Systems1760 Zhuoli Zhang, Ming Li, Tianyu Xing, Ying Zhang
Safety and Quality Risk Status Evaluation of Photovoltaic Power Plants in Operation based on AHP-Fuzzy Comprehensive Evaluation Method
Photovoltaic System Control and Photovoltaic Power Generation Forecast
Short-term output prediction of distributed photovoltaic based on dual attention mechanism recurrent neural network
Chongyou Xu, Weiwei Xu, Kailei Guo, Lin Ye, Jianbin Yang, Ming Pei
Research on coupling design and intelligent operation of power flow system in green factory
Study on the influence of desert dust accumulation on the output power of photovoltaic modules
A PV Power Prediction Method Based On Optimized VMD and Combination Prediction Model Selection Strategy 1788
Yuhan Zhang, Xue Li
Research on Photovoltaic MPPT Technique Based on Deep Reinforcement Learning Under Varying Irradiance Levels
Wenkai Pan, Chenggang Cui, Hui Chen
Short-term photovoltaic output prediction model based on MOSMA feature selection and TCN
Spatial Correlation-Based Ultra-Short-Term Power Generation Prediction of Grid-connected Distributed PV in Counties
Chengxi Li, Jinfeng Huang, Xiaobing Wu, Jianing Huang, Yi Liu, Jun He
Optimization model of a ring-grid distribution system based on a solid-state hydrogen storage station
A novel hybrid data-driven PV output prediction method based on error correction

Wei Chen, Wenbin Yang, Zhaohui Shi, Hongke Li
Coordinated Control Method of Power Oscillation Suppression for Multi-Parallel Synchronous Generator with Distributed Photovoltaic-Storage System
Thermoelectric Systems and Heat Exchange
Research on optimal control strategy of compound heating system based on model prediction
Experimental Research on the Proton Exchange Membrane Fuel Cell Waste Heat Recovery System184 Hao Wang, Guoxin Yu, Yongkang Liu, Jing Li, Liangran Li, Nan Lv, Rui You
Granularity Analysis and Optimum Design of Secondary Network in Heating System for Solar Energy Consumption
Energy Flow Analysis and Optimization of Tahe No.1 Union Station
Preparation and performance study of composite ceramic membrane heat exchanger tube based on membrane distillation process
Study on Thermal-physical Property of MWCNTs Nanofluids and Photo-thermal Conversion
Numerical Study on the Influence of Coal Ash Particle Concentration and Particle Size in Flue Gas on Heat Transfer of Fire Tube Waste Heat Boiler
Flexibility Upgrading of High Pressure Industrial Heating System for a Cogeneration Unit and its Performance Improvement
Integrated Energy System Operation Management and Dispatch
Low-carbon Economic Dispatching Strategy of Park Integrated Energy System Considering Source Load Uncertaint
Yiwei Xu, Enrong Wang, Hailong Zhang

Day-ahead Optimal Scheduling of Integrated Energy System Considering Carbon-Green Certificate Trading
Mechanism
Yi Zhang, Tian Lan, Wei Hu
Low-Carbon Oriented Optimization of Integrated Energy System Considering Complex Coupling of Carbon and
Hydrogen
Yinghao Niu, Qian Chen, Zhengwei Zhang, Beiqi Qian, Zongyuan Li, Xiaowen Xu
Operation optimization of electric heating system based on interaction between green certificate carbon trading and
source charge
WeiKang Li, YuXiang Meng, Cong Gao, Gang Ma
Enhancing Flexibility in Integrated Energy Systems in a Low-Carbon Context: Status and Challenges1908
Zhan Xiong, Zhenlan Dou, Chunyan Zhang, Shichao Zhou, Chuanwen Jiang, Lingling Wang
Research on the Design Methodology of Integrated Energy System Evaluation System Considering Different
Weighting Rates of Multiple Indicators
Qiang Yu, Jidong Song, Ziliang Yang, Shumin Sun, Song Yang, Peng Yu, Haijie Qi
Optimal Scheduling of Integrated Energy Systems Considering Master-slave Games and User Comfort1922
Cong Gao, Jianwei Xu, Weikang Li, Shuyu Wang, Haoran Ge, Gang Ma
Optimization Strategies for Hydrogen Mixing Scheduling in Natural Gas Networks in Integrated Energy Systems
Zixun Zhang, Xiaohan Fang, Yuan Fan
Optimization Operation Model of Integrated Energy System in Expressway Service Area with P2G
Chance-constrained model predictive control based real-time dispatch strategy of regional integrated energy
systems considering profit allocation
Yubin Wang, Yanchong Zheng, Qiang Yang
Research Progress and Case Analysis of Suspended Particulate Matter Distribution Control in Integrated
Transportation Hubs
Long Zhujia, Su Xin, Li Yinan, Wang Deliang
New Energy Based Power Generation Systems and Advanced Control Strategies
Accident Warning and Calculation of Accident Spray Volume for Desulfurization System1954
Wanrong Zhang, Ruichen Gao, Yuliang Qian, Daogang Peng, Zhang Wan

Time-varying correlation analysis and modeling of distributed renewable energy joint output based on time-varying	ing
Copula19)59
Minzhen He, Xiaohui Liu, Yi Huang, Han Wu, Ankang Miao, Yue Yuan	
Research on High Voltage High Capacity Multi-port Energy Router19	965
Deng Weihua, Ji Lanlan, Liu Yali, Jiang zhe, Han Naizheng, Lin Zhiguang	
Data Self-Expansion and DoppelGANger-Based Time-Series Modeling for Realistic Steam Data Generation19	969
Xinying Cai, Zheng Luo, Xueru Lin, Ning Zhang, Yihui Mao, Xiaojie Lin, Wei Zhong	
A novel medical waste-to-hydrogen design based on plasma gasification19)75
Yu Jin, Bian Jiayu, Zhu Zimin, Yu Zhiyong, Li Jiarui, Chen Heng	
A Review of Titanium-based Lithium-ion Sieve19	980
Song Wang, Xuan Chao, Xin Huang	
Frequency Dynamics-Constrained Unit Commitment with High Penetration of Wind Power19	1986
Yang Zeng, Yi Yu, Jiayong Li, Binxian Li, Yuhan Hu, Lipeng Zhu	
A novel design for biogas-based power generation incorporating a coal-fired power plant19	1992
Zhiyong Yu, Zhuan Zhou, Xiaochao Shi, Zimin Zhu, Xinyue Zhao, Heng Chen	
Study on Predicting and Warning of the Wet Flue Gas Desulfurization System Slurry Poisoning Based on Improv	/ed
K-means Clustering	98
Bao Gu, Junwei Fu, Qing Guo, Xinnan Ye, Rongdong Yu, Zhenwei Zhang, Xiaoyan Jia	
Physics Informed Bellman Neural Network for Energy Management Strategy of Hybrid Electric Vehicle20)06
Lefei Gao, Yubo Zhang, Fangyuan Li, Yanhong Liu	
A brain-inspired spiking neural network for the renewable energy short circuit ratio prediction20	2011
Yawei Wei, Guangming Lu, Dingyi Cheng, Shichao Liu, Hao Tian, Qizhen Sun	
Digital Power Communication and Key Technologies	
Prediction of SDN Heterogeneous Network Traffic Based on Improved LSTM with Self-attention Mechanism20)16
Xiangcai Zhao, Dajun Du, Yi Zhang	
Research on overall architecture and Functional Application of digital UHV substation)22
Yan Li	
A File Transfer Method Based on Modbus Protocol20)29
Junfeng Ding	

Research on The Security of Power Cyber-Physical System Considering Communication Network Failure2034
Zhou Yutian, Li Xin, Li Mingxin, Song Weiping, Sui Tao, Mao Xuanfei
H _∞ Filtering Method for WSNs with Privacy Protection under FDI Attack2040 Jinming Liu, Li Liu, Yinggang Zhang
Multi-Target Pedestrian Tracking Using Radar and Visual Detection Information Fusion2046 Yuan Lin, Wenju Zhou, Shunan Wang, Wei Ruan
Author Index