# Table of Contents

**Preface**

**Committees**

<table>
<thead>
<tr>
<th>Study on the influence of transformer charging on UHVDC operation in UHVAC and UHVDC coupled power grid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wei Peng, Zhou Qian, Liu Jian-kun, Zhu Xing-yao</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study on the method of suppressing power oscillation with braking resistor in UHVACDC coupling system during commutation failure</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wei Peng, Wang Cheng-gen, Zhou Qian, Zhang Ning-yu</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research of Harmonics Frequencies Impedance Estimation Based on Least-square method</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kai Liu, Yan Zhang, Dacfey Dzung</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Test Method for DC Protection Equipment of HVDC by Secondary Signal Simulating</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jinbo Wu, Quan Hong, Hui Li, Siyuan Guo, Hao Xu, Weijun Zhu, Fan OUyang</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fault analysis of pole-to-pole short-circuit on the flexible AC-DC hybrid distribution network</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Le Liu, Xiaoning Kang, Ke Li, Mengyuan Zheng</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study on Requirement of Control and Stability with Renewable Energy Generation Grid Integration</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Li Yan, Qin Xiaohui, Chi Yongning, Tian Xinshou, Sun Sujuan, Zhuang Shenglun, Kong Xiangmei, Shi Lei</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identification of Vulnerable Links in Power Grid Based on Brittleness Theory of Complex System under Geomagnetic Storm Conditions</th>
<th>31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xiaoning Kang, Yagang Zhang, Xinyue Zhang, Yini Xu, Xiaoyu Li, Hao Zhou</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Harmonic suppression scheme of L-type photovoltaic grid-connected inverter based on harmonic injection method</th>
<th>36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiangbo Chen, Weihang Li, Jin He, Yangmin Feng, Peihao Yang</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Research and Simulation of Hybrid ACDC Microgrid</td>
<td>N/A</td>
</tr>
<tr>
<td>Feng Gao, Yangmin Feng, Peihao Yang, Shuichao Kou, Xia Guo</td>
<td></td>
</tr>
<tr>
<td>Transient Voltage and Reactive Power Response Analysis of Power System</td>
<td>45</td>
</tr>
<tr>
<td>Considering Geomagnetic Storm</td>
<td></td>
</tr>
<tr>
<td>Xiaoning Kang, Yagang Zhang, Yini Xu</td>
<td></td>
</tr>
<tr>
<td>Fault Location on Parallel Transmission Lines as Influenced by Mutual</td>
<td>51</td>
</tr>
<tr>
<td>Effect</td>
<td></td>
</tr>
<tr>
<td>Hamdy A. Ziedan, Alaa Eldin M. Abofard, Faisal A. Alhadi</td>
<td></td>
</tr>
<tr>
<td>Impact of Pole-to-ground Faults on Transformer DC Magnetic Bias and</td>
<td>59</td>
</tr>
<tr>
<td>Differential Current Protection in Hybrid AC_DC Power Grids</td>
<td></td>
</tr>
<tr>
<td>Zhihui Dai, Hong Cao, Yongxing He, Ningning Liu, Cheng Zhang, Huaibo</td>
<td></td>
</tr>
<tr>
<td>Su, Liangdong Qin</td>
<td></td>
</tr>
<tr>
<td>A Scheme to Monitor DC Voltage Transducer of HVDC links</td>
<td>65</td>
</tr>
<tr>
<td>Yao XIAO</td>
<td></td>
</tr>
<tr>
<td>Data Analysis and Optimization of Power Loss in Household Electrical</td>
<td>N/A</td>
</tr>
<tr>
<td>Appliances</td>
<td></td>
</tr>
<tr>
<td>Mohammad Ehsanul Alim, Nazmus Sakib Bin</td>
<td></td>
</tr>
<tr>
<td>Boundary Protection Scheme for HVDC Transmission System</td>
<td>75</td>
</tr>
<tr>
<td>LEI Yang, HE Xinlin, DUAN Jiandong, Li Hao</td>
<td></td>
</tr>
<tr>
<td>A Strategy of DC Fault Ride Through and capacitor voltage balancing</td>
<td>80</td>
</tr>
<tr>
<td>for Hybrid Modular Multilevel Converter (MMC)</td>
<td></td>
</tr>
<tr>
<td>Xinyue Zhang, Xiaoning Kang, Yagang Zhang</td>
<td></td>
</tr>
<tr>
<td>A pilot protection scheme for UHVDC lines based on backward traveling-</td>
<td>85</td>
</tr>
<tr>
<td>wave difference</td>
<td></td>
</tr>
<tr>
<td>Hong Cao, Min Xie, Zexin Zhou, Xingguo Wang, Bin Yu, Dingxiang Du,</td>
<td></td>
</tr>
<tr>
<td>Haigang Wang, Tongwen Wang, Yang Yu</td>
<td></td>
</tr>
<tr>
<td>Fault line identification method for multi-terminal hybrid DC</td>
<td>N/A</td>
</tr>
<tr>
<td>transmission system</td>
<td></td>
</tr>
<tr>
<td>Liu Niming, Ning lianhui, Wu di, Gao liang</td>
<td></td>
</tr>
<tr>
<td>Study on Distributed Generation to Improve Stability of Distribution</td>
<td>98</td>
</tr>
<tr>
<td>Network Based on Virtual Synchronous Generator Technology</td>
<td></td>
</tr>
<tr>
<td>Li Yan, Tian Xinshou, Hu Juan, Zhang Zhankui, Yu Hui, Xiong Xiong,</td>
<td></td>
</tr>
<tr>
<td>Wu Ming, Ma Wenyuan</td>
<td></td>
</tr>
<tr>
<td>A new protection principle of Modular Multilevel Converter Based High</td>
<td>104</td>
</tr>
<tr>
<td>Voltage Direct Current transmission lines using series inductance</td>
<td></td>
</tr>
<tr>
<td>voltage of one-end converter</td>
<td></td>
</tr>
</tbody>
</table>
Shuping Gao, Yue Gao, Zhenyu Hu, Baohui Zhang, Guobing Song

Analysis to Influences and Countermeasures of Non-periodic DC Component on Line Protection
YU Honglei, ZHAO Zhihong, DU Zhaoqing

Fault Cause Identification Method Based on Multi-Source Information Fusion for UHVDC Transmission Lines
Rongqi Fan, Jing Li, Ning Ge, Kuan Li, Zhiyuan Wang, Huanhuan Yin

A Transient Stability Assessment Method Using LSTM Network with Attention Mechanism
Wang Xu, Zhou Qain, Huang Cheng, Liao Shiwu, Jiang Yefeng, Ge Yaming

Research on the application of smart substation area protection
Chuankun Ni, Baowei Li, Ruisheng Li, Maojun Deng

Study on Comprehensive Suppression Measures for Voltage over-limit of Distribution Network With Small Hydropower Group
Yan Qunmin, Ma Ruiqing, Zhu Juanjuan, Li Yujiao

Study on Coordinated Control of ±500 kV Flexible DC Power Grid with Renewable Energy and Generation Control
Tianxiao Huang, Tianzhi Cao, Jing Luo, Binghui Wang, Tingting Liang

SVDD-Based Protection for UHVDC Ground Electrode Line
Xinyao Song, Zaibin Jiao, Qingchen Liu, Yufei Teng, Xiaopeng Li

Application of Term Library Construction Based on Machine Learning and Statistical Method in Intelligent Power Grid Custom Service
HongYing ZHAO, Yang YU, JinQiu ZHANG, Jun ZHU, YouLang JI, ZhenDong DU, Qingchen WANG

Research on Measurement Technology of Transformer No-load Loss Based on Internet of Things
WU Yan, LIU Lan, SHI Changkai, MA Kui, LI Yang, MU Haibao

Single-phase Adaptive Reclosure Scheme Using Impedance Property of Fault Loop in Shunt-reactored Transmission Lines
Pengyue Liu, Wenquan Shao, Guobing Song

Research on Guideway Magnetically Coupled Mechanism for Dynamic Wireless Charging System
Bin Wei, Xiaokang Wu, Pengfei Li, Songcen Wang, He Hao
Analysis and Protection of 11kV Downed Conductor Faults
S. Chiu, A. Eaton

Research on Generation Expansion Planning of Isolated Grid with Industrial Load
Chuanguang Fan, Hui Wang, Yang Cai, Xing Xian, Zhenyu Sun, Haobo Fu, Siyang Liao, Xiazhhe Tu

Research on Control Technology of Series Double Valve Group in Hybrid Multi-terminal UHVDC Transmission System
Yanjiao Yin, Lianhui Ning, Liang Gao, Niming Liu, Haodong Teng

Method for Single-phase Electric Meter Phase Discrimination Based on Multiple Linear Regression
Liqiang Zhang, Wei Cong, Gang Dong, Yun Sun

Protection and Fault Recovery Strategy of AC and DC System of Flexible Substation
Qi Huanhuan, Deng Zhanfeng, Zhao Guoliang, Lu Zhengang, Zhou Zhe, He Zhao

Fault location of HVDC transmission line based on improved genetic algorithm
Jianlei Zhang, Zhanjun Gao, Xiufang Xie, Huanhuan Yin, Zhiyuan Wang

Performance Analysis of Combined Model-Predictive and Slide-Mode Control for Power Converters in Renewable Energy Systems
Habib Ur Rahman Habib, Shaorong Wang, Mahmoud F. Elmorshedy, Asad Waqar

Plug and Play Technology for Power Distribution Equipment Management based on the IoT Ideas
Jiaying Lin, Peng Wang, Jichuan Zhang, Zhiming Zhang, Haoyang Sun

Efficient Voltage Profile Based Model-Predictive Control Strategy for Stand-Alone Wind-Integrated Hybrid Microgrid Systems
Habib Ur Rahman Habib, Shaorong Wang, Mahmoud F. Elmorshedy, Mohamed G. Hussien, Asad Waqar

Maximum Power Extraction with Enhancement of Terminal Load Voltage Profile for Standalone Wind Generating Systems Based on Model Predictive Control
Habib Ur Rahman Habib, Shaorong Wang, Mahmoud F. Elmorshedy, Asad Waqar

Identification of Critical Nodes in Power System Based on Graph Theory and PageRank Algorithm

Zhiyu Zhang, Kounan Zhang

Parameters Setting of New Energy Units Rapid Frequency Regulation in Northwest Power Grid  
Xiaowei Ma, Xiaoqiang Sun, Lin Cheng, Xiangyang Guo, Xin Liu, Zhiwei Wang  

Research on Power Grid Fault Diagnosis Based on Bayesian Information Fusion  
Zhiyuan Wang, Zhanjun Gao, Huanhuan Yin, Jianlei Zhang, Cunzheng Shang  

Inspection Pattern for Smart Substations Based on Risk Analysis  
Haixiang Gao, Lu Miao, Jianing Liu, Kai Dong, Xiangning Lin  

Research on post-fault time sequence of MTDC with MMCs  
Yuwen He, Guomin Luo, Yinglin Liu, Jinghan He  

Influence of Off-shore Wind Farm on Power System Small-Signal Stability  
Lu Miao, Haixiang Gao, Yang Yi, Fei Long, Jianxi Lin, Guobing Wu  

compensation method for high voltage switchgear temperature measuring system with dual surface acoustic wave chip  
Wenshen Wang, Lutian Tang, Chuankai Yang, Chen Mao, Yu Shang  

Research on the sampling reliability of process layer device in smart substation  
Zhihui Yan, Lijuan Lv, Shuanghui Wu, Yaxin Su, Zhenyu Wang, Zhen Zhang  

Input-Output Characteristics Based Fault Current Analysis of MMC-HVDC Transmission Systems  
Wansong Liu, Boyu Qin, Kai Wang  

Development of a Smart Low Voltage Circuit Breaker with Integrated Protection and Control Functions Based on Wireless Communication  
Wen An, Wang Fei, Xianxiang Li, Tian Le, Zhao Pan  

Design of Multi-location Cycle Online Temperature Monitoring System for Electrical Equipment Based on Infrared Technology  
ZHU Zhehao, SONG Zhengxiang  

Transformer Inrush Current Restraining Method Based on Integrated Control of Closing Voltage Parameters  
XU Anxin, CONG Wei, ZHANG Liqiang, HU Liangliang, WANG Weixu  

Power Stability Analysis and Control of Micro-grid Storage system under Voltage Asymmetric Fault  
Lu Sheng, Wang Hanwen, Ding Quan, Qian GuoMing
Online Identification of Low Frequency Oscillations Based on Reactive Compensation Switchings
Hongyang Huang, Donghui Wang, Wentao Lv, Yiping Yu

Distributed Dynamic Reactive Power Support System Based on DFIGs
Hongyang Huang, Jianbo Nie, Zhenfeng Li, Ke Wang

Online fault location of 110kV hybrid cable line by traveling wave based on Short-Time Matrix Pencil Method
Xiangyuan Luo, Ming Zhang, Haochen Wang, Tian Li, Saike Yang

Analysis of Different Electromagnetic Pulses Propagation Characteristics in XLPE Cable
Tian Li, Haochen Wang, Saike Yang, Ming Zhang, Xiangyuan Luo

Fault disappearing judgement of single phase grounding in neutral point non-effective grounding system based on adjustable resistor
Bozhong Pan, Wei Cong, Yanfei Ma

A Pilot Protection Principle for MMC-HVDC Transmission Lines Based on Charge Balance
Zhehong Chen, Guobing Song, Zhenfeng Liang, Wenzheng Li, Zhanfeng Fan

An Integrated Multi-port Hybrid DC Circuit Breaker
Jinghan He, Yiping Luo, Meng Li, Guomin Luo, Liu Han Teng Feng

Research and Device Development of Residence Time Testing Technology for Network Acquisition Switch Based on Large Scale FPGA
LIU Haitao, NIU Jian, ZHOU Kun, ZHEN Jialin, ZHU Xianbao

A Fast Protection Scheme Using Fault Current Characteristics in Multi-terminal Flexible DC Distribution Network
Le Liu, Xiaoning Kang, Mengyuan Zheng, Ke Li

Non-intrusive Load Decomposition of Stacked Hybrid Recurrent Neural Networks
Zhiyu Zhang, Chao Fan

Multi-Port Hybrid DC Circuit Breaker for DC Distribution Network
Shuo Zhang, Guibin Zou, Chenjun Sun, Xiaogong Du

Research on Location Selection and Capacity Planning of Urban Electric Vehicle Charging Station
Hongyang Ma, Hongyu Wang, Shaojie Cheng, Tao Zheng
Research on Demand Forecast of Power Grid Emergency Materials Based on CBR Method Improved by Information Update  
CHAI Qingfa, CONG Wei, CHEN Jian  

A Novel Fault Current Limiter for MMC-Based HVDC System  
Qiang Huang, Guibin Zou, Houlei Gao  

A Mixed Integer Quadratic Cone Programming Model for Backbone Grid Search  
SUN Zhi-yuan, LIANG Shui-ying, LI Yi-ming  

An Accurate Fault Location Method for Distribution Lines Based on Coupling Parameter Identification Using Two Terminals Data  
Jiayuan Lin, Wei Chen, Xianggen Yin, Rui Chen, Yu Bai, Junjie Shi, Li Yu, Hao Bai  

An Iterative Design of PSS4B Stabilizers Using Contoured Controller Bode Plots  
Chongxi Jiang, Hao Xu, Jinghao Zhou, Deqiang Gan  

Derivation Method of Electrical Damping Based on Impedance Model  
Zhennan Wang, Shiwu Xiao, Zhiming Gu  

Detection Method of Turn to Turn Insulation Short Circuit Fault of Dry-Type Air-Core Reactor Using Vibration Characteristics Based on Machine Learning  
Hang Yang, Gao Lu, Shengchang Ji, Lingyu Zhu  

Line Protection Scheme for MMC-based Multi-terminal DC Distribution Networks  
Xiuyan Wei, Guibin Zou, Linhui Yu, Yunfang Shi  

Traveling Wave Bus Protection for MMC Based Multi-terminal DC Distribution Network  
Linhui Yu, Ginbin Zou, Xiuyan, Chenjun Sun  

A Fault Location Algorithm for HVDC Grounding Electrode Line with Distribution parameter model  
Yining Zhang, Yueyang Wang, Xingxing Cheng  

Analysis of the Fault Characteristics of Microgrid with Inverter-Interfaced Distributed Generators  
Yanchang Xu, Longhua Mu, Fan Zhang, Zhiyu Mou, Jiran Zhu  

Reliability Evaluation of AC-DC Hybrid Grid Based on State Enumeration Method  
Lizhou Jiang, Zhaohong Bie, Gengfeng Li, Gechao Huang, Longjun Wang
HVDC Startup Strategy in AC_DC Hybrid System Black Start Process
Yuchen Chen, Chen Shen

Comparison of several Low Voltage Ride Through Attached Equipment
Donghui Wang, Ming Chen, Fang Fang, Hongyang Huang, Song Wang, Haoliang Du

Emergency DC Power Support Strategy Based on Coordinated Droop Control in Multi-infeed HVDC System
Ye Liu, Chen Shen, Yankan Song, Jun Yan

The Influence of the Grid Overvoltage on Fully Rated Converter Wind Turbine and an HVRT Control Strategy Based on Reactive Current
Peilin Liu, Xuesong Gao, Lei Ding

Internal Fault Characteristics and Optimized Main Protection Configuration for Asymmetric Winding Generator
Wei Du, Yuguang Sun, Lin gui, Siteng Zhao

Research on modeling and characteristic analysis of arc in DC Circuit Breaker
Xiaorui Zhang, Liang Wang, Sheng Lin

A Novel Method of Power Swing Blocking in Impedance Relay
Hao Wang, Xiaoning Kang, Xinzhou Dong

Experimental Research on Typical Single-Phase High Resistance Grounding Fault Detection Methods in Resonant Grounding Distribution System
Xin Cui, Bin Wang, Xinzhou Dong, Kun Liu

Study on high impedance grounding fault protection for personal safety guard in distribution grid
Kun Liu, Xin Cui, Bin Wang, Xinzhou Dong

The research and prospect of the construction of SG-eIoT
Chao Zhang, Le Liu, Anming Zhu, Xiaonig Kang

Sampling Synchronization Method Using Power System Modeling
Satoshi Takemura, Yasuyuki Tanaka, Shigeto Oda

Optimal Arrester Configuration Scheme for Series Compensation Devices
Ge Jing, Liu Haijun, Song Jieying, ZhaoGuoliang, Zhang Yifan

Robust Unit Commitment in Integrated Electricity and Dynamic Natural Gas System Considering Gas Storage
An Adaptive Multi-criteria Fusion Algorithm based on Transient Signal for Small Current Grounding System on Fault Line Selection
Yubo Zhang, Zhiguo Hao

Low Voltage Ride-through Strategy of Photovoltaic Power Generation Based on State-dependent Riccati Equation Technique
Chao Huo, Ruowei Zhang, Xianbo Ke, Ping Wei, Zhizhen Ma, Boyu Qin, Wanliang Fang

Nonlinear Photovoltaic Controller Design to Suppress Overvoltage at the Sending End of HVDC Transmission Systems
Ruowei Zhang, Ping Wei, Xianbo Ke, Chao Huo, Jing Li

Parameter Tuning and Simulation Analysis of PSS Function in Excitation System with Suppression of Low Frequency Oscillation
Shengyang Lu, Wuyang Zhang, Tong Wang, Yupeng Cai, Xin Sui, Huan Li, Tianyi Zhu, Yining Gang, Yongliang Yu

Research and application for wide-area backup automatic switch system for Smart Substation based on RTDS
Shengyang Lu, Xin Sui, Wuyang Zhang, Tong Wang, Yupeng Cai, Huan Li, Gang Wang, Dongsheng Yang

Fault Ride-Through Strategy of LCC-MMC Hybrid Multi-Terminal UHVDC System
Hong Rao, Guiyuan Li, Runbin Cao, Weihuang Huang, Yan Li

Nataf Transformation based Probabilistic Energy Flow Calculation in Natural gas and Electricity coupled systems
Cheng Fang, Zhizhen Ma, Kai Wang, Boyu Qin

Travelling Wave Propagation Process Analysis in Hybrid Star-connected Multi-terminal LCC-MMC-HVDC Transmission System
Dong Wang, Mengqian Hou

Point Estimation Method Considering Estimator Boundary Constraints to Calculate Probabilistic Power Flow
Cheng Fang, Jing Li, Boyu Qin

Techniques of Optimization for the Protection and Control System in the Smart Substation of China
Luming Wu, Fufeng Chen, Qi Chen, Yutao Qiu, Jingwen Jiang, Sheng Jin
Energy Efficiency Optimal Dispatch for Park-Level Energy Internet
LONG Tao, BIE Zhaohong

A Coordinated Control Scheme to Realize Uninterruptible Power Supply for AC-side system in AC_DC Hybrid Distribution grid
Fei Wang, Qiu Wang, Zikan Fan, Haojie Wang, Wenyuan Cao, Minxiao Han

Analysis of Transient Characteristics in Low and Medium DC Distribution Network During Line Faults
Qiu Wang, Chao Wang, Fei Wang, Minxiao Han, Zikan Fan

Effect Analysis of EV Optimal Charging on DG Penetration in Distribution Network
Zhenjian Xie, Wanchun Qi, Chengchen Huang, Haikun Li

Real-Time Simulation and Close-Loop Testing of Microgrids
Haiyue Wang, Eric Xu

On-line Discrimination Method of Current Transformer’s Polarity Using Line No-load Closing Impulse Current
Yunqi Zhang, Wei Cong, Liangliang Hu, Liqiang Zhang

Study on Power Supply Mode of Distribution Network Based on Three-phase to Single-phase AC_DC_AC Converter
Zhenfeng LIANG, Xiangyu ZHOU, Wei LIU, Huizhi ZHANG

Graded Early-warning Scheme of Transmission Line Galloping Based on Grey Clustering Analysis
Yiwen Jiang, Kui Hua, Lee Li

Early-warning Method of Transmission Line Galloping Based on Random Forest and Grey Relation Projection
Yiwen Jiang, Yunpeng Jiang, Lee Li

Automatic Switchover System Scheme for 20kV Petal-shape Distribution Network Non-communication Protection
Hua Liangliang, Li Siyu

Mechanism Analysis and Prevention Methods of Commutation Failure in LCC-HVDC Transmission System
Jinzhaosong, Yongli Li, Liang Zeng, Yunke Zhang, Zihe Yang

A Novel Bus-bar Protection Principle based on Instantaneous Equivalent Impedance
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis of HVDC Commutation Failure Influence on AC Phase Selector Based on Fault Component</td>
<td>568</td>
</tr>
<tr>
<td>Zihe Yang, Jinzhao Song, Yongli Li, Yunke Zhang</td>
<td></td>
</tr>
<tr>
<td>Research on Control Strategy of Asymmetric Faults on AC Side of Flexible Multi-state Switch</td>
<td>573</td>
</tr>
<tr>
<td>Cao Chengsha, Song Jieying, Lu Zhengang, Gao Zemeng, Zhang Yifan, Wang Chaoliang, Xu Feng</td>
<td></td>
</tr>
<tr>
<td>OUYANG Jinxin, LI Mengyang, YUAN Yifeng</td>
<td></td>
</tr>
<tr>
<td>Transformer Winding Deformation Detection and Fault Identification Based on Distributed Optical Fiber Sensing</td>
<td>587</td>
</tr>
<tr>
<td>Yunpeng Liu, Junyi Yin, Naihao Shi</td>
<td></td>
</tr>
<tr>
<td>Reliability Assessment Method for Power System of Offshore Oilfield Group Based on Load Relevance</td>
<td>591</td>
</tr>
<tr>
<td>Hang Zhang, Xiuli Wang, Qiwen Zhang, Wei Du, Chaoling Shen, Xue Li</td>
<td></td>
</tr>
<tr>
<td>A New Method for Faulty Line Selection in Distribution Systems Based on Wavelet Packet Decomposition and Signal Distance</td>
<td>596</td>
</tr>
<tr>
<td>Jianwen Zhao, Jianan Lou, Jie Sun, Zexin Peng, Pu Li, Mengmeng Gao</td>
<td></td>
</tr>
<tr>
<td>Study on Safety Management System of Power Grid Enterprises</td>
<td>601</td>
</tr>
<tr>
<td>Yan ZHANG, Xin TIAN, Xiaoling JIN, Rui XIANG, Yiwei ZHANG</td>
<td></td>
</tr>
<tr>
<td>A Method for Fault Pole Selection of DC Lines Based on Travelling Wave</td>
<td>606</td>
</tr>
<tr>
<td>Xiaoyuan Xie, Shenxing Shi, Xinzhou Dong, Shaoming Zheng, Tianxiao Huang</td>
<td></td>
</tr>
<tr>
<td>Text Mining in Unstructured Defect Records of Electrical Equipment Based on Deep Learning</td>
<td>N/A</td>
</tr>
<tr>
<td>Yiwen Jiang, Lee Li, Zhensheng Liu</td>
<td></td>
</tr>
<tr>
<td>Fault location of UHV DC transmission line based on variational mode decomposition and energy operator</td>
<td>616</td>
</tr>
<tr>
<td>Meng Ge, Houlei Gao, ZhenLiu, DachuanYu</td>
<td></td>
</tr>
<tr>
<td>Analysis of Governor’s Dead Band on Frequency Stability of System Based on Describing Function method</td>
<td>621</td>
</tr>
</tbody>
</table>
Qingchen Liu, Chongtao Li, Xinyao Song, Qingxu Liu, Yiping Chen

**Influence on AC Power Grid by the Earthing Current of DC Ground Electrode**
Bing Gao, Qing Liu, Aidi Li, Jun Qiao

**Reliability analysis of the closing spring of high voltage circuit breaker**
Zhuo Zhang, Wang Dong, Qin Hao, Zhang Guogang, Liu Yakui, Weifeng Xin, Ma Deying, Lei Wang, Bin Wang

**A Review of On-line Condition Monitoring in Power System**
Chenxi Guo, Ming Dong, Xiaoxi Yang, Wensen Wang

**Crosstalk Analysis between Power Lines and Signal Lines Based on FDTD**
LI Aidi, LIU Qing, YANG Jiayi, ZHOU Ningxin

**Small Signal Stability Analysis and Control Optimization of Y-connected Modular Multilevel Converter for Fractional Frequency Offshore Wind Power Application**
Feng Jia, Yongqing Meng, Jianyang Yu, Shuhao Yan, Rong Ye, Jingwei Xue

**Mechanism and Risk Areas of Cascading Faults_ A Newly Emerging Fault Type in Large-Scale Hybrid AC_DC Power Grids**
Sohrab Mirsaedi, Jinghan He, Xinhou Dong

**A New Analytical Model of VSC for Harmonic Power Flow**
Chao Hong, Yong Zhao, Liang Tu, Ye Zhang, Hao Yuan, Xiaowen Chen, Zaibin Jiao, Jianhua Li

**Location and analysis of partial discharge in GIS based on on-line monitoring and improved signal waveform feature method**
MA Pengchi, WANG Zhijie, SHEN Pan

**Optimized Demagnetization Control Strategy of Double Feed Induction Generator in Fault Ride Through Period**
Jian-Jian Xu, Lei Ding, Xue-Song Gao

**Fault Phase Identification Method Based on Convolutional Neural Network for Double Circuit Transmission Lines**
Yiming Zhu, Yiqing Liu, Kai Wu

**A Novel Topology of Hybrid DC Fault Current Limiter base on novel fault current limitation theory for DC Line Short Fault in HVDC System**
Xiong Zhang, Chaoran Zhuo, Xiaotian Zhang, Xu Yang

**Analysis of DFIG terminal voltage oscillation caused by reactive power**
compensation under weak grid connection
Pai Liu, Lei Ding

DC Fault Transient Characteristics and Fault Ride-through Control Strategy Based on Hybrid MMC-HVDC
Gao Liang, Ning Lianhui, Teng Haodong, Liu Niming, Yin Yanjiao

Missing-operation Risk of Directional Comparison Teleprotection with Photovoltaic Power Integration
Qingrui Tu, Yiquan Li, Wei Liu, Xuyang Deng, Shaolin Jiao, Zengchao Wang, Ziliang Wu, Jianglei Suo, Dongyuan Shi

Personal safety analysis of live working in 10kV distribution network based on finite element method
Zhao Zimo, Zeng Xiangjun, Yu Kun, Zhu Liang, Yang Qi, Wang Zhigang

An Identification Method for Sympathetic Inrush Based on Substation-Area Information
Fang Peng, Yiqing Liu, Xingong Cheng

Dynamic VAR Configuration of Receiving-end Power Grid Based on Improved Trajectory Sensitivity Index
Jiehao CUI, Ancheng XUE, Lei GAO, Weifang LIN, Xiaobo LIU, Xiaoyu REN

On-line Monitoring and State Evaluation For Relay Protection Operating Circuit
Yang Lu, Yongli Li, Jinzhao Song, Yunke Zhang, Zihe Yang

Reliability Model of Submarine Cable Based on Time-varying Failure Rate
Qiwen Zhang, Xiuli Wang, Xue Li, Wei Du, Hang Zhang, Xue Li

Fault Ride-through of Fractional Frequency Offshore Wind Power System Based on Modular Multilevel Matrix Converter
Jianyang Yu, Yongqing Meng, XiXi Pan, Yichao Zou, Ruanming Huang, Mengyao Zhang

Control Scheme of Y-connected Modular Multilevel Converter in Fractional Frequency Transmission System Under Unbalanced Grid Fault
Ting Yu, Yongqing Meng, Jianyang Yu

An Adaptive Restart Method for DC Transmission Line in LCC-HVDC System
CAI Jing, DONG Xinzhou

Estimation of Power Imbalance Size with Consideration of Impact of Emulated Inertia
Qiteng Hong, Campbell Booth, Bin Wang, Xinzhou Dong, Liang Ji

Design of an Open Platform for Real-Time Power Grid Monitoring
Qiteng Hong, Steven Blair, Rhys Williams, Campbell Booth, Max McFarlane and, Rachael Eynon, Nathan Matheson

A Novel Method for Health Level Evaluation of Relay Protection
Lie ZHANG, Zexin ZHOU, Guosheng YANG, Hanfang ZHANG, Wenhuan WANG, Zhijie WANG, Junjie ZHANG, Ancheng XUE

Multi-energy hybrid power generation system based on constant power control
Zeyu Xin, Xinzhou Dong, Xiaoyuan Xie

A Novel Protection Method of Wind Farm Collector Line Based on FCM Clustering Analysis
Zhining Lv, Baifeng Ning, Weifeng Luo, Wei Liu, Wei Deng, Kun Yu, Xiangjun Zeng, Guoxuan Zhao, Zijun Zhao

Average-Value Model of Modular Multilevel Matrix Converter for Fractional Frequency Transmission System
Jing Ge, Hongyang Yu, Zhanfeng Deng, Guoliang Zhao, Boyang Zhao, Xifan Wang, Xiuli Wang, Lianhui Ning

Fault Location Method for Seafloor Observation Network based on Multi-terminal Traveling Wave Time Difference
Mao Yu, Li Yueyu, Zu Yarui, Deng Feng, Zeng Xiangjun, Mei Longjun

A New Method for Grounding Fault Protection of Distribution Networks Based on Fuzzy Measurement Fusion Criterion
Lü Zhining, Ning Baifeng, Luo Weifeng, Liu Wei, Deng Wei, Hu Ziheng, Li Yueyu, Yu Kun, Zeng Xiangjun

Economic Comparison of AC and DC Distribution System
Chen Xi, Han Jun, Zhang Qun, Xie Zhenjian, Wang Qingshan

High-Order Sliding Mode Control of Modular Multilevel Matrix Converter in Fractional Frequency Offshore Wind Power System
Xixi Pan, Yongqing Meng, Sijia Li, Jianyang Yu, Guohua Fang, Ruanming Huang, Mengyao Zhang

An Improved Control Method for Voltage Source Converter-High Voltage Direct Current System
Yimeng Sun, Yingpei Liu
Analysis of Photovoltaic Maximum Accessible Capacity Based on Current Protection
Chang Yang, Jingdong Xu, Qingzhu Shao, Bo Zhang

Optimal Placement of STATCOMs in Multi-infeed Power Electronic Systems based on Small Signal Stability
Hui Yuan, Pan Dai, Qian Xu, Guangjin Shen, Huanhai Xin

A Development Situation Early Warning Method of Distributed Generation in China
HU Jing, HUANG Bibin, MA Kai

Operation Condition Assessment Method and Its Practical Implementation for Protection Systems
Kun Liu, Yiquan Li, Qiaoping Chen, Wei Liu, Yuxue Wang, Shidan Liu, Zengchao Wang, Feng Wang, Ziliang Wu, Jianglei Suo, Liangrong Yuan, Qian Tan

A test method for fast frequency response function of new energy station in Northwest Power Grid
Xiaowei Ma, Xiangyang Guo, Zuibing Xie, Xin Liu, Haichao Xu, Yunlong Chu, Zhiwei Wang

Medium and Long Term Daily Load Forecasting Based on Boot-Feibes and Lisman Disaggregation
Zhao Hongyan, Liu Jun, Liu Jiacheng, Wang Kai, Pan Liangjun

Single Terminal Traveling Wave Method for Hybrid Line Ground Fault Location Based on EEMD and SDEO
ZHAO Jianwen, DUAN Jiaxin, SHI Wei, SHI Xin, ZHAO Ruijie

Concepts for Secured Protection of VSC HVDC Overhead Lines Equipped with Auto Reclosing of DC Circuit Breakers
Reynaldo Nuqui, Jiuping Pan, Jianping Wang

Actual Measurement and Analysis of Fast Response Capability of Photovoltaic Plants Participating in the Frequency Regulation of Northwest Power Grid
Yunlong Chu, Haichao Xu, Song Cheng, Xin Liu, Xiangyang Guo, Zheng Li, Zhiwei Wang

A risk-constrained model for virtual power plants including DGs and coupled electricity-heat supply
Danyang Zhang, Zechun Hu, Xuanyuan Wang
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A preliminary study of prediction method for oil-paper insulation critical breakdown under DC voltage oriented to power transformer protection</td>
<td>835</td>
</tr>
<tr>
<td>LIU Yi, ZHANG Lianxing, DENG Jiangang, DU Zhenbo, WANG Liang, NIE Dexin</td>
<td></td>
</tr>
<tr>
<td>High-impedance Ground Fault Location Based on Phase Current Increment Ratio</td>
<td>841</td>
</tr>
<tr>
<td>Fangqun Liao, Haifeng Li, Jiaquan Chen</td>
<td></td>
</tr>
<tr>
<td>Evaluation of Fault Characteristics in Microgrids Dominated by Inverter-Based Distributed Generators with Different Control Strategies</td>
<td>846</td>
</tr>
<tr>
<td>Md Asif Uddin Khan, Qiteng Hong, Adam Dyiko, Campbell Booth, Bin Wang, Xinzhou Dong</td>
<td></td>
</tr>
<tr>
<td>Research on a Highly Precise Fault Location Method for ±1 100kV UHVDC Transmission Lines Based on Hilbert-Huang Transform</td>
<td>850</td>
</tr>
<tr>
<td>Zhu Xiaoguang, He Chunying, Deng Junbo, Guo Yubo, Chen Xiaohui</td>
<td></td>
</tr>
<tr>
<td>An Accident Analysis of Circuit Breaker in HVDC Converter Station Filter Branch</td>
<td>855</td>
</tr>
<tr>
<td>He Chunying, Zhu Xiaoguang, Deng Junbo, Chen Xiaohui, Guo Yubo</td>
<td></td>
</tr>
<tr>
<td>Research on Reactive Power Optimization Coordination Control of Large-Scale PV Station Suitable For High Altitude Area</td>
<td>850</td>
</tr>
<tr>
<td>Daihai Yu, Hui Yan, Kai Han, Xiaochun Luo, Yunhua Chen, Yongkang Zhen</td>
<td></td>
</tr>
<tr>
<td>A Study on the Protective Coordination Correction of Distribution System in Korea using EFI</td>
<td>868</td>
</tr>
<tr>
<td>Health condition assessment of pole-mounted switch assemblies based on hybrid algorithm</td>
<td>873</td>
</tr>
<tr>
<td>Rongjian Cui, Hui Hou, Jinyuan Zeng, Jinrui Tang, Xixiu Wu, Xianqiang Li</td>
<td></td>
</tr>
<tr>
<td>Influence of Power Factor on Small-Signal Stability of Grid-Connected Converter Systems</td>
<td>878</td>
</tr>
<tr>
<td>Luyao Xu, Minghui Sun, Huanhai Xin, Xiaozhe Song, Chunhua Wang</td>
<td></td>
</tr>
<tr>
<td>The Research and Development of the High-Speed Transmission Line Protection Based on the Transient Information</td>
<td>883</td>
</tr>
<tr>
<td>Qi Xuanwei, Wang Song, Xuan Xiaohua, Wen Minghao, Qi Xuanwei, Li Baowei, Dong Xingtao, Li Baowei</td>
<td></td>
</tr>
<tr>
<td>A generator unit fault classification approach based on Multi-source wide-area feature extraction</td>
<td>888</td>
</tr>
<tr>
<td>Jian Dang, Pengfei Fan, Rong Jia, Jinyuan Wei, Ji li</td>
<td></td>
</tr>
</tbody>
</table>
Closed-Loop Traveling-Wave Relay Testing (TWRT) using RTDS Real-Time Simulators
Ramin Mirzahosseini, Yue Chen, Yi Zhang, Rick Kuffel

Reserve Allocation of Integrated Electrical and Natural Gas System Considering Accurate Modelling for CCGTs’ Mode Transition Trajectories
Chunxiao Wang, Zhaohong Bie, Chao Yan, Can Wang, Gengfeng Li

Undervoltage and Underfrequency Combined Load Shedding Method
Yiming Zhao, Songhao Yang, Baohui Zhang, Ye Li

Control Optimization of PMSG Based WECS with Modified PLL and DC-link Voltage Relaxation
Yichao Zou, Yongqing Meng, Jin Li, Ying Kong, Rong Ye, Zangsui Lin

Long-term Solar Radiation Forecasting using a Deep Learning Approach-GRUs
Muhammad Aslam, Kim Hyung Seung, Seung Jae Lee, Jae-Myeong Lee, Sugwon Hong, Eui Hyang Lee

A New Control Strategy for Capacitor Voltage Balance of Hybrid Modular Multilevel Converter
Xiaoyu Li, Xiaoning Kang, Yanlei Yuan, Mengyuan Zheng

Passive Circuit Model Construction and Application on the Key Structure of Converter Valve
Xiaopeng Li, Xikui Ma, Cheng Luo, Binbin Han

Influence of Governor’s Dead Band on Ultra-Low Frequency Oscillation Based on Damping Torque Method
Qingchen Liu, Chongtao Li, Yiping Chen, Rongzhao Yang

Measurement Error Detection of Electric Power Meter Based on Least Square Method
Yonggang Hu, Tielin Zhang, Yanfeng Chen, Qizhe Pan

Influence of Grid-connection Photovoltaic on Power Quality and Relay Protection of Distribution Network
Tianhua Ye, Long Jin, Ruxia Xue

Application and Development Review of Big Data Technology on Smart Grid Demand Side
Shuo Li, Yanchi Zhang, Zichen Li, Yang Chen
A Novel MMC Based on Series-Parallel Multiplex and Its Control Strategy for Flexible HVDC Application
Guohua Fang, Yongqing Meng, Haitao Zhang, Kaikai Li, Haibo Wang, Zhengchun Du

SSO Analysis of D-PMSGs-based Wind Farm considering the PLL
Xiaofang Wu, Feng Zeng, Xiaotian Yuan, Shuai Gao, Guihong Wu, Chongtao Li, Zhengchun Du

Comparison of Suppression Effect of STATCOM Site on Sub-synchronous Resonance
Yizhen You, Shuai Gao, Xiaotian Yuan, Xiaofang Wu, Yunsheng Wu, Zhengchun Du

Power System Resiliency
Jaeseok Choi, Ungjin Oh, Yeonchan Lee, Jintaek Lim

Research on Calculation Method of Transformer Magnetizing Current Based on Neural Network Fitting
Guoxing WU, Peng WANG, Yonghao REN, Yuanda SONG, Sheng LIN

An adaptive intelligent passive filter with the functions of monitoring and protection
Li Zichen

Research on a Data Desensitization Algorithm of Blockchain Distributed Energy Transaction Based on Differential Privacy
Li Yun, Li NingFeng, Xia YiYu

A Comprehensive Evaluation Model of Renewable Energy Benefits for Power System Planning
Guojun Bao, Qingtao Li, Jianxue Wang, Xuebin Wang, Shujie Zhang

A New Control Method for Three Phase Inverters under Unsymmetrical Voltage Sag Conditions
Jiabin Shi, Liang Ji, Qiteng Hong, Yang Mi, Zhe Cao, Asif Khan, Campbell Booth

An Advance Index to Evaluate the Stability of MMC-HVDC and Offshore Wind Power Generation
Zicong Zhang, Junghun Lee, Changhee Han, Soseul Jeong, Gilsoo Jang

An Amplitude Comparison Protection for Distribution Networks with High Permeability Inverter-Interfaced Distributed Generations
Bin Xu, Houlei Gao, Jiakai Huang
Research on Electric Load Modeling of North China Power Grid
Wang Qi, Zhao Bing, Chen Xi, Tan Beisi, Gao Yucheng, Li Jiahao, Wang Lingkuan

Analysis of heating and cooling loads Based on Auto-encoder for Integrated park
Qirui Qiu, Gengfeng Li, Xiaohu Zhang, Di Shi, Tianxiang Cao, Zhaohong Bie

Seismic Coupling Effect between ±800kV UHV Converter Transformer and Grid-side Equipment
CHEN Xing, XIE Qiang, HE Chang, LI Xiaoxuan, SUN Xinhao

Toward Mitigating Power System Oscillation _ STATCOM Controller With Delay Reconstruction Algorithm
Hyeokjin Noh, Hwanhee Cho, Byongjun Lee, Seungryul Lee

Power Electronic Switching Models for Numerical Simulations of Power System Electromagnetic Transient
Ning Guo, Wenzhuo Liu

Assessment of Wind Power Ramp Events Based on Stacked Denoising Autoencoder
Zhixiang Liang, Yutian Liu, Xiaoming Liu, Xiangyang Cao, Liudong Zhang, Haiwei Wu, Qibing Zhang, Ming Yang

Excitation Methods for EV Charging Process in Community Considering the Degree of User Response
Aixia Zheng, Bo Li, Shihai Yang, Xiaodong Cao, Yuqin Chen, Xiaolong Xu, Penglei Xu

Design and Implementation of Active Disturbance Rejection Controller for Damping SSCI in A Series Compensated DFIG-Based Wind Farm
Hongyang YU, Yingpei WANG, Yunting HU, Guoliang ZHAO, Zhanfeng DENG, Benfeng GAO

Short Term Load Forecasting Based on VMD-DNN
Can Wang, Shaoxiong Huang, Song Wang, Yuan Ma, Jinhui Ma, Jinjin Ding

Emergency DC Power Support Based On the Planning Trajectory
Xinkai Fan, Baohui Zhang

Operation optimization of active distribution network considering maximum consumption of distributed generation
Jianfang LI, Xiaohui Song, Yu ZHANG, Fei GAO
A fault phase and line selection method of the double-circuit transmission line on the same tower based on transient component
Zhen Liu, Houlei Gao, Sibei Luo

Integration Control Strategy of IPOS DC Step-up Type Photovoltaic Power Plant Via MMC-HVDC
FAN YanFang, LI GuangLin, GAO WenSen

A Study on Daily Peak Electric Load Forecasting Using Radial Basis Function Netwrok
Kyuhan Kim, Heungseok Lee, Junghwan Kim, June Ho Park

Study on Vibration Characteristics of Transformer Insulation Ageing
Chenzhao Fu, Wenrong Si, Peng Xu, Lin He, Haoyang Tian, Xiangyi Xu, Shaoqing Wang, Lv Cui, Yuhang Shi, Shengchang Ji

Model Predictive Control for Unbalance Compensation under Three-Phase Four-Wire Power System
Nan Jin, Chao Pan, XiaoQiang Ma, Shaoyu Shi, Yanyan Li

Short-term photovoltaic power generation prediction model based on fuzzy clustering-Elman neural network
MA jinhui, ZHANG Jinjin, Li zhi, YE haifeng, DING Jinjin

Deep Learning based VPP Active Power Dispatching Equivalent Modelling for Global Dispatching Optimization
Chen Xinhe, Pei Wei, Deng Wei, Sun Qian, Sun Hongjian

Anomaly Detection and Processing in Artificial Intelligence for IT Operations of Power System
Yiyu Xia, Jixiang Lu, Yun Li, Bin Zhang, Hao Li, Feng Xie, Shaobo Liu, Chunlei Xu

Long-term remaining useful life prediction of lithium battery based on grey theory
Xie and Shaobo Liu

Condition Assessment on Arc Nozzle of High Voltage Circuit Breaker Through SF6 Decomposition Products
XU YANG, Changhong Zhang, Yunfan Li, Weiguo Li, Zhongkang Huang, Jinwei Chu

Regional Marginal Price Mechanism in the China Northwest Power Grid
Yanzhe Ren, Shiyu Liu, Zhaohong Bie
Coordinated Control Strategy for Grid-Connected Integrated Energy System of Wind, Photovoltaic and Hydrogen
Mengdi Xu, Guogang Zhang, Wenfan Li, Lijia Ge, Zhengxiang Song, Yingsan Geng, Jianhua Wang

Research on Risk Assessment Method of Distribution Network with Distributed Generation Based on Latin Hypercube Sampling
Yu Zhang, Jianfang Li, Fei Gao, Xiaohui Song, Yajie Li, Shanshan Zhao

Droop Control for Multi-Terminal Fractional Frequency Transmission System with Offshore Wind Farm Integration
Boyang Zhao, Xifan Wang, Xiuli Wang, Lianhui Ning, Jing Ge

A Combined Operation Mode of Wind Power, Gas-fired Power and Pumped Storage
ZHOU Haoran, BIE Zhaohong, WANG Ke, XU Keqiang

A Resonance Measurement Method of Grounded Parameters for Distribution Network Considering Damping Resistance
Guoping Yu, Min Yang, Xinqi Chen, Huimian Zhao, Hangjie Han, Siqi Liu, Kun Yu, Xiangjun Zeng

Improvement Measures of Active Intervention Arc Suppression Technology
LI Qingpeng, YANG Qin, ZHANG Rongrong, QI Jinwei

Precise Locating Method of Generator Stator Grounding Fault Point Based on Injected Signal
Han Hangjie, Gao Jun, Zhao Huimian, Li Li, Yu Kun, Zeng Xiangjun

Analysis of adaptive re-closure in AC-DC hybrid power system
Min Xie, Wei Zhang, Ludeng Liu, Xin Jia, Bin Wang, Xinzhou Dong

Study on the Influence of Large-Scale Wind Power Integration on Transient Stability of Power System
LIU Mosi, SUN Zhiyuan, LIU Guangshi, LI Mingpo, QIU Xiaoyin

A Control Strategy of the Grid Support for Photovoltaic Inverter Based on Control-hardware-in-the-loop Simulation
LI Shuang, SI Gangquan, QU Kai, YANG Zeyu, HE Guoqing

Testing Cyber Security of Power Systems on Real Time Digital Simulator
Chamara Devanarayana, Yi Zhang, Rick Kuffel

A Distributed Multi Level Protection and Control System Oriented to Power Grid
Li Ziliang, Yu Tongwei
The Research of Practicality Evaluation Index System of New Energy Combined Power Project
Zhang Rui, Li Xiaoming, Dong Jingyuan, Liu KeCheng, Li Anchang

Analysis of Application of Superconducting Current Limiter to AC line of HVDC Invert
Binshu Chen, Xinzhou Dong

Research on flexible control technology of HVDC
Chao Xing, Mingqun Liu, Xin He, Xinze Xi

The reactive power control of variable power controlled LCC HVDC in GW level wind power integration
CAI Rong, YUE Chengyan, HOU Junxian, LI Yan, LIU Chao

Research on DC Line Fault Recovery Sequence of Yongren-Funing HVDC Project
Chao Xing, Mingqun Liu, Xin He, Xinze Xi

Fault Ride Through Capability Enhancement of Doubly Fed Wind Generator Using Hybrid Protection Circuits
Bunan Tipo, Jing Li, Boyu Qin

Simulation and Energy Management Interface of an Autonomous DC Microgrid
Yueqi Wang, Florence Ossart

Control Strategy for Energy Management of Hybrid Wind-PV-Battery System for an Isolated System
Kiran Kumar Nagda, Prof. R. R. Joshi, Komal Nagda

A Novel Transformer Protection Scheme Based on Equivalent Excitation Impedance Characteristics
Xiao He, Baofeng Zuo, Anyang He, Zongbo Li, Hao Qi, Zaibin Jiao

IEC 61850-based smart automation system logic to improve reliability indices in distribution networks
Alessandro Bosisio, Alberto Berizzi, Andrea Morotti, Andrea Pegoiani

Requirements and Methods for Reducing Fault Clearing Times in Smart Grids
A. Apostolov

Remote Testing of Protection Devices and Schemes in IEC 61850 Based Digital Substations
A. Apostolov
Protection Considerations During Fault Induced Delayed Voltage Recovery

A. Apostolov

Commutation Failure Mitigation Method Based on Improved Commutation Area in HVDC system
Haozong Wang, Xinzhou Dong

A Ping-Pong Self-detection based Online No-dead-time Detection Method for the Tripping-and-closing Circuit
Shuang Song, Yi Yang, Chenqing Wang, Shi Chen, Liangliang Song, Lie Zhang

A Novel Fast Simulation Method for MMC in MTDC System Considering the Effect of Output Ripple Characteristics
Chaoran Zhuo, Xiaotian Zhang, Xiong Zhang, Xu Yang

A Discrete System Approach for Short-term Voltage Stability Analysis
Zhuanan Kang, Feng Qian, Minquan Chen, Junlei Liu, Shangyuan Li, Deqiang Gan, Qiuna Cai, Jie Liu

Research on Traveling Wavefront Identification Method Based on the Dominant Frequency Component of Full Waveform
Deng Feng, Zu Yarui, Zeng Xiangjun, Mao Yu, Mei Longjun

On-line Detection of Transmission Line Deterioration Using Power Line Communication Signal in Low-voltage Distribution Networks
Zihan Lai, Tao Zheng

Research on Setting Method of Time Domain Distance Protection
Zhenfeng LIANG, Feiyan Gao, Huizhi ZHANG

Current Transformer Saturation Compensation Based on Deep Learning Approach
SopheapKey, Vattanak Sok, Sun-Woo Lee, Chang-Sung Ko, Soon-Ryul Nam, Nam-Ho Lee

A Robust Reserve Scheduling Method Considering Wind Turbine Generator’s De-loading Control
Aijun ZHANG, Dandan LI, Huadong XING, Zhen WANG, Chaoran SI

The Effect of DFIG on Electromechanical Oscillation with Combined Reactive Power Damping Control and Virtual Inertial Control
Xiaoqian Xu, Danqi Liang, Zhen Wang, Dandan Li, Aijun Zhang, Huadong Xing
Joint Optimization Dispatching for Hybrid Power System Based on Deep Reinforcement Learning
Li Tie, Cui Dai, Jiang Feng, Feng Da, Hu Wei, Qi Yuchen, Wu Shuang

Model Predictive Control of Grid-connected Converter Based on Virtual Synchronous Machine
Li Yanyan, Li Guohao, Qiang Li, Nan Jin, Hu Shiyang, Guo Leilei, Jianshan Liu

Research on Mechanisms and Benefits of Electrochemical Energy Storage Participating in Power System Peak Shaving
Chen Chen, Meifeng Ke, Shiyou Lin, Shaolin Zhu, Jiarui Wei

An Axial Flux Double-Rotor Counter-Rotating Permanent Magnet Machine for Underwater Vehicles
Bo Cheng, Guang Pan, Zhaoyong Mao

Fuzzy Logic Based Algorithm for Wind Energy Prediction
Muhammad Shahzad, Umair Naeem, Rehan Sadiq, Dr. Ejaz Muhammad

Power System Stabilization using Unified Power Flow Controller and Model Predictive Control
Umair Naeem, Rehan Sadiq, Muhammad Shahzad

Low-Voltage Ride-Through Control Strategy for Direct-Driven Wind Power System Based on Quasi-Proportional Resonant Controller
Yang Liu, Meiyi Hou, Guofang Zhu

Research on Outage Risk Assessment of Transmission Aisle as Lifeline Engineering
REN Xi-chun, YANG Jia-lun, LIU Bin, LIU Ya-duo, ZHAN Xue-ping, LI Peng, TAN Ling-feng

Transfer Learning Based Equivalent Magnetization Hysteresis Recognition for Transformer Protection
Xiaopeng Wang, Zongbo Li, Zaibin Jiao

A Review of Cyber-Attack Methods in Cyber-Physical Power System
Feng Li, Xinteng Yan, Yunyun Xie, Zi Sang, Xiaoshu Yuan

Influence Study of VSC-HVDC Interconnection on AC Line Differential Protection
SHI Bonian, SUN Gang, JIN Rui, XIE Jun, WANG Yingying

Traveling waves based fault line selection using sparse representation
Wen Xu, Guangmei Zhang
Current Waveform Similarity Based Line Protection Scheme for Distribution Network of DFIG Wind Power Integration System
Yang Wei, Duan Jiandong, Chen Tong

Multi-objective matching method of bilateral transactions in medium and long-term power markets
Yongqing Wang, Bo Kong, Yufeng Jiang, Lei Zhou, Meng Yang, Yufeng Jiang, Xingzhong Bai

Assessment method and suppression strategy of operational risk in long-term power market considering the large-scale renewable energy
Minghui Zhu, Meng Yang, Lei Zhou, Yufeng Jiang, Yajun Chen, Danhui Chen

Pearson Correlation Coefficient of Current Derivatives based Pilot Protection Scheme for Long-distance LCC-HVDC Transmission Lines
Yunke Zhang, Yongli Li, Jinzhao Song, Xiaolong Chen, Yang Lu, Weikang Wang

Market Potential Analysis for Energy LAN with Heterogeneous Energy Storage
Qian Chen, Qiang Sun, Chanxia Zhu, Yang Chen, Jingdong Wei

Research on Coordination Control System of Virtual Power Plant Based on Blockchain
Yun Li, Yun Teng, Rongrong Cao, Ningfeng Li

A Review on Management Risk of Virtual Power Plant
Hou Linna, Meng Yingzhi, Su Juning

Research on phase-by-phase adaptive reclosing sequence for transmission lines
Zhenfeng LIANG, Kerun WANG, Wenzheng LI

Dynamic Deformation Analysis of Power Transformer Windings under Multiple Short-Circuit Impacts
Shaoyong Yao, Zhiguo Hao, Jianan Si, Yucheng Zhang

Adaptive Single Phase Autoreclosing Scheme for EHV Transmission Line
Waqar Ahmad Khan, Tianshu Bi, Ke Jia

Fault current characteristics in active distribution networks with integrations of multiple PVs

Assessment of Data Flow Control Methods and their Performance on IEC61850
based Digital Substation
Luoyun Xu, Haiyu Li, Fangfang Dong, Yuhao Zhou

Fading Kalman Filter-based Method for Controlled Fault Interruption
Ziang Li, Zhiguo Hao, Baohui Zhang, Shaogui Ai

Turbine Location Wind Speed Prediction Using Convolutional Neural Network
Tianhu Wan, Hua Li, Chen Wang, Peng Kou

Variable Droop Control for Wind Farm to Participate the System Frequency Regulation
Tianhu Wan, Hua Li, Chen Wang, Chen Wang, Peng Kou

Mathematical Modeling and Simulation of Flow Field of Switching Process of On-Load Tap Changer for Large Capacity Transformer
Jianan Si, Zhiguo Hao, Ya Zhang, Shaoyong Yao, Guocheng Ding, Xingwang Wu

Research on Gas Protection Misoperation Mechanism and Strategy in Switching Process of On-Load Tap Changer for Large Capacity Transformer
Jianan Si, Zhiguo Hao, Ya Zhang, Shaoyong Yao, Guocheng Ding, Xingwang Wu

LVRT Control Method of Flywheel Energy Storage System Based on VSG
Wencan Li, Jingliang Lv, Xinjian Jiang, Xinzhen Zhang, Shuang Sheng

DC Protection System Testing in RTDS-MATLAB Simulation Environment
Hongfei Zhu, Zhou Liu, Lian Liu, Marjan Popov, Peter Palensky

Fault Identification of Hydroelectric Sets Based on Time-frequency Diagram and Convolutional Neural Network
Hui Li, Qiangbin Meng, Xintong Li, Rong Jia, Jian Dang

A Combined SSR-damping Strategy Based on Virtual Impedance Method and SSR Damping Controller in DFIG-Based Wind Farm
Kang Wu, Yongqing Meng, Xixi Pan, Yichao Zou, Rong Ye, Jingwei Xue

Analysis and Comparison of Two Detection Methods for Fundamental Positive Sequence Active Current
Rong Xu, Hang Yin, Tian Lan, Xiang Wu, Yuanliang Lan, Weimei Zhao

Optimization of Fault Current Limiter Configuration Based on Improved Niche Genetic Algorithm
Danyang Li, Zhiguo Hao, Zhihua Zhang, Yizhao Wang
Application of Transfer Entropy Algorithm in Fault Detection for Power System with Wind Turbines
Chen Ziyu, Li Qing, Feng Shouhong, Li Weilin

1465

Station Protection Scheme Based on Logic Judgment
Chang Tan, Mingxin Bu, Yingli Wei, Weigang Chen, Haitao Yue, Peng Gao, Jing Liu

1471

A Study on the Influence of Three-phase Unbalance of AC Side Voltage on the Operating Characteristics of VSC
Hao Qi, Hanwen Gu, Zaibin Jiao, Rui Li, Ming Wu

1476

Prediction and Optimization on Energy Consumption of Data Center Based on Multi-layer Feedforward Neural Network
Song Zhang, Xin Ye, Ying Ren

1480

A section location method for single-phase grounding fault based on wavelet packet and singular value decomposition
ZHAO Jianwen, SHI Xin, ZHAO Ruijie, DUAN Jiaxin, SHI Wei

1484

New Principle of DC Line Back-up Protection for The Whole Process of Fault
Junjie Hou, Guobing Song, Lishuai Yin, Bing Guo, Wei Han

1489

Impedance Modeling of D-PMSG Considering Currents Frequency Coupling
Saijun Yuan, Zhiguo Hao, Hongyue Ma, Jin Shu

1494

A New Principle of DC Distribution Line Over-Current Protection for Solid-State Transformers Based on Current Derivative
Jian Xue, Lei Wu, Chenqing Wang, Xiangping Kong

1498

A Single-Ended Fault Location Method for DC Line Based on Active Signal
Bing Guo, Guobing Song, Junjie Hou, Lei Wu, Wei Han

1503

A fault line selection method based on zero-mode components
Jianwen Zhao, Zexin Feng, Jianan Lou, Jie Sun, Pu Li, Mengmeng Gao

1508

A New Method for Faulty Location in Distribution Systems Based on Wavelet Packet Decomposition and Signal Distance
Jianwen Zhao, Jie Sun, Zexin Feng, Jianan Lou, Pu Li, Mengmeng Gao

1512

Effects of Control Algorithms on Transient Recovery Process in UHVDC Transmission System
Fang Yu, Jie Guo, Yuying Wu, Feihong Yu

1516
Design of Control System for BLDCM without Position Sensor
Wang Yue, Xu Jun, Dong JiangBo, Fang Dan

Selection of DC Voltage Level in household Hybrid AC_DC power supply system
Hongyu Wang, Tao Zhang, Baohui Zhang

Impedance Analysis and Stability Optimization Based on Phase-Optimization PLL
of VSC-HVDC Connected to Weak AC Grids
Kaikai Li, Yongqing Meng, Haitao Zhang, Guohua Fang, Yichao Zou, Zhengchun Du

Parameter identification of grid-connected photovoltaic inverter based on adaptive
-improved GPSO algorithm
Kaisong Dong, Junhui Yan, Weicheng Shen, Shaoyu Li, Xiping Ma, Rong Jia

Rapid Input Control Method of Arc Current Transfer Type Current Limiter
Fan Xie, Zhiguo Hao, Xiuming Hu, Jingdong Xu

Comparative Study of Algorithms for Fast Identification Power Frequency Short-
circuit Current in Short Data Window
Shaogui Ai, Hanhua Zhang, Yongning Huang, Fan Xie, Tengfei Liu, Zhiguo Hao

Ubiquitous Power Internet of Things Architecture Construction Plan
Jian Zhong, Tao Zheng

Design and Implementation of an Automated Test Framework for Electric Power
Data Network based on the unified scheduling of Resources
Ting Hu, Qin Li, Xin Huang, Xiaoyang He

Study on Hysteresis Property Based on Improved Jiles-Atherton Model
Kangkang Han, Zhiguo Hao, Zhiyuan Liu, Xiaojun Yu, Hongxiang Xu

Research on Distributed Energy Application Mechanism and Key Technologies
Based on Hyperledger
Jianjing Song, Yun Li, Wenjie Song, Hui Chen, NingFeng Li

Return on Investment for Smart Building based on Economic Model Predictive
Control
Tianyang Liu, Tao Zheng, Baohui Zhang, Romain Bourdais

Joint bidding strategy for wind-storage systems in the forward power market
Xiang Yu, Yongqing Wang, Jianmei Ma, Lei Zhou, Yufeng Jiang, Meng Yang
Research on Decision-making of Secondary Equipment Maintenance Based on Online Monitoring
Lu Zhihao, Li Jun, Yang Shihao, Han Songjie, Lu Zhengjun

Optimal Dispatch of Grid-connected Microgrid Considering Incentive-based Demand Response
Chong Shao, Shaohua Zhang

Research on Voltage Sag Suppression Technique based on Artificial Current Zero of FVCB
Kui Ma, Song Wang, Shuhong Wang, Zaibin Jiao, Hexin Huang, Xiaofei Yao

Adaptability analysis of grounding electrode line impedance supervision method for UHVDC project
Xiaopeng Li, Yi Zhuang, Xiao Wu, Cangyang Chen

Determination of proper Blocking tap changer Threshold voltage to Prevent Long-term Voltage Collapse_ Practicable Scenario in KEPCO System
Bohyun Park, Seunghyuk Im, Byongjun Lee

Reliability Analysis of Protective Relaying for 3rd Generation Smart Substation
Lu Zhihao, Yang Shihao, Han Songjie, Liu Zhixiang

Study on SSC of DFIG-Based Wind Farms by Equivalent Circuit Modeling
Tao Zhang, Zhiguo Hao, Saijun Yuan, Jin Shu

Adaptability Analysis of the Directional Relay for the System With Inverter-interfaced Renewable Energy Generators
Zhe Yang, Ke Jia, Zijin Li, He Zhao, Yu Fang, Tao Feng, Bohan Liu

Research on Fault Characteristics of High-Voltage Side in Dual Active Bridge DC_DC Converter
Zichi Wang, Bingyin Lei, Lijun Xu, Xinlu Yang, Botong Li, Weijie Wen

A Conventional Distance Protection for Series-Compensated Lines Considering TCSC Protected by a Metal Oxide Varistor
Woo-Seok Seo, Sang-Hee Kang, Young-Doo Yoon, Jong-Su Yoon

Fault Transfer Characteristics Analysis and Simplified Model of DC System Oriented to Relay Protection
Guobing Song, Lishuai Yin, Junjie Hou, Wei Han

The Effect of Demand Side Management on the Operational Risk of Active
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution Network</td>
<td>1638</td>
</tr>
<tr>
<td>Sijie Ruan, Huili Zhang, Yunsong Yan, Jie Zhou</td>
<td></td>
</tr>
<tr>
<td>Research and development of traveling wave monitoring device for nanosecond precision ground fault based on 4G Data Transfer Unit</td>
<td>1642</td>
</tr>
<tr>
<td>XU Yu, YU Qinxue, GUO Hui, ZHONG Lisheng, LIU Hongwen, WANG Ke</td>
<td></td>
</tr>
<tr>
<td>Precise Load Shedding Scheme Based on Ordered Tree Implicit Enumeration Method</td>
<td>1647</td>
</tr>
<tr>
<td>Zhou Xu, Junfang Zhang, Weijie Cheng, Zuyi Ren</td>
<td></td>
</tr>
<tr>
<td>Real-time Calculation of Transient Ampacity of Trench Laying Cables Based on the Thermal Circuit Model and the Temperature Measurement</td>
<td>1652</td>
</tr>
<tr>
<td>X.W. Wang, J.P. Zhao, Q.G. Zhang, B. Lv, L.C. Chen, Y. Zhang, J.H. Yang</td>
<td></td>
</tr>
<tr>
<td>The Analytical Analysis and Protection Setting of Traveling Wave Protection in Hybrid HVDC System</td>
<td>1657</td>
</tr>
<tr>
<td>Shaojie Cheng, Baohui Zhang, Jiahao Wang</td>
<td></td>
</tr>
<tr>
<td>Coordination Control of Battery Energy Storage and MTGS in An Independent AC Microgrid</td>
<td>1662</td>
</tr>
<tr>
<td>Jiahao Wang, Tao Zheng, Shaojie Cheng</td>
<td></td>
</tr>
<tr>
<td>A Novel Phasor Domain Parameter-Free Fault Location Algorithm on Untransposed Transmission Lines</td>
<td>1667</td>
</tr>
<tr>
<td>Wangjun Zhu, Yu Liu, Dian Lu, Xiaodong Zheng</td>
<td></td>
</tr>
<tr>
<td>Coordinated Restoration Model of Renewable Energy and Conventional Generator Units after Fault</td>
<td>1672</td>
</tr>
<tr>
<td>Zhenyu Zhang, Weizhou Wang, Jia Lyu, Yitong Li, Jun Liu</td>
<td></td>
</tr>
<tr>
<td>Research and Development of High-precision Single-phase Ground Fault Detection and Location System in Distribution Network</td>
<td>1677</td>
</tr>
<tr>
<td>GUO Hui, YU Qinxue, XU Yu, ZHONG Lisheng, LIU Hongwen, WANG Ke</td>
<td></td>
</tr>
<tr>
<td>Simulation and Analysis of Power Transformer Winding Vibration and Deformation under External Short-circuit Faults</td>
<td>1682</td>
</tr>
<tr>
<td>Ya Xu, Chenguang Yan, Xian Zhou, Hao Liu, Che Xu, Yuzhou Wei, Baohui Zhang</td>
<td></td>
</tr>
<tr>
<td>A Unified Scheme for Power System Transient Stability Simulation and Transient Stability Assessment</td>
<td></td>
</tr>
<tr>
<td>Songhao Yang, Xinkai Fan, Baohui Zhang, Zhiguo Hao, Hojo Masahide</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Protection Algorithm for Medium Voltage Collector Feeder in Wind Farm Based on Discrete Wavelet Transform Algorithm of Current Ratio</td>
<td>N/A</td>
</tr>
<tr>
<td>Abdullah Mohamed, Abd-ellatif Sayed, Sabry Moussa, Adel Elsamahy</td>
<td></td>
</tr>
<tr>
<td>Vibration Reduction of Marine Permanent Magnet Propulsion Motor without Position Sensor</td>
<td>N/A</td>
</tr>
<tr>
<td>He Zhongxiang, Zhang Fan, Zhu Lei, Li Shu, Li Chengyang</td>
<td></td>
</tr>
<tr>
<td>Research on the application of traveling wave protection for DC lines in the hybrid HVDC system</td>
<td>1701</td>
</tr>
<tr>
<td>Mengyuan Zheng, Xiaoning Kang, Le Liu, Pengfei Yu, Kun Jiang</td>
<td></td>
</tr>
<tr>
<td>Study and Analysis on Improving Reliability Measures of Security and Stability Control Equipment</td>
<td>1706</td>
</tr>
<tr>
<td>Shaoming Zheng, Yimin Liu, Hongxia Qin, Zhe Li, Jinjun Li, Ruifeng Lei, Huanian Zhang</td>
<td></td>
</tr>
<tr>
<td>Transient Waveform Characteristics Based Current Differential Protection of Wind Farm Outgoing Line</td>
<td>1713</td>
</tr>
<tr>
<td>Zhe Lv, Zengping Wang, Wanyu Xu</td>
<td></td>
</tr>
<tr>
<td>Analysis of HVDC Commutation Failure Influence on AC Phase Selector on Fault component</td>
<td>N/A</td>
</tr>
<tr>
<td>Zihe Yang, Jinzhao Song, Yongli Li, Yunke Zhang</td>
<td></td>
</tr>
<tr>
<td>SREKF Based State of Health Estimation for Lithium-Ion Battery</td>
<td>1724</td>
</tr>
<tr>
<td>Zhiyu Zhang, Fengzhu Zhang, Wentao Ma</td>
<td></td>
</tr>
<tr>
<td>An Diode Clamped Multi-port HVDC Circuit Breaker for HVDC Grids</td>
<td>1729</td>
</tr>
<tr>
<td>Feng Xu, Yi Lu, Peng Qiu, Xiaojun Ni, Chao Ding</td>
<td></td>
</tr>
<tr>
<td>Emergency Power Control of HVDC Interties for Urban Power Grid Resilience Enhancement</td>
<td>1735</td>
</tr>
<tr>
<td>Jiuping Pan, Lisa Qi, Reynaldo Nuqui, Lidong Zhang</td>
<td></td>
</tr>
<tr>
<td>Risk scheduling model of wind turbines failure of Integrated Electrical and Natural-gas System with Power-to-Gas</td>
<td>1739</td>
</tr>
<tr>
<td>OUYANG Jinxin, Li Mengyang, XIONG Xiaofu</td>
<td></td>
</tr>
<tr>
<td>Research on Combined Optimal Dispatch Model of Nuclear-Thermal-Energy Storage with Nuclear Power Participating in Equivalent Peak Load Regulation</td>
<td>N/A</td>
</tr>
<tr>
<td>Xin Sui, Shengyang Lu, Hui Sun, Jinsong Liu, Wei Zhou, Gang Wang, Wuyang Zhang, Ziqian Liu</td>
<td></td>
</tr>
</tbody>
</table>
Joint Modeling and Risk Simulation Analysis Based on Cyber-Physical System in Distribution Network
Tianyuan Kang, Keyan Liu, Xueshun Ye, Muke Bai, Mengze Gao, Wen Zhang

1754

Adaptive Comprehensive Auto-Reclosing Scheme for Shunt Reactors-Compensated Transmission Lines
Chao Xie, Fengting Li

1759

An Improved Frequency Estimation Method Without Iterations
Jinlei Xing, Longhua Mu

1764

A Line Fault Type Detection Method Based on Optimal Sample Support Vector Machine in MMC-HVDC Transmission System
Si-Jie Xiao, Sheng Lan, Yong-Bin Yuan, Mou-Jie Chen, Tao Jin

1769

Accurate switching strategy of shunt reactive power compensation capacitor in 220kv substation
Song Xiangzheng, Guo Chunlin

N/A

Research on Suppression of Ultra-Low Frequency Oscillation of High Hydropower Proportion System by DC Frequency Limiter Controller
Yanhui Xu, Wei Bai

1780

Short-term Load Forecasting Model Based on Attention Mechanism and Gated Recurrent Unit
Song Liu, Pin Lv

1784

Charging Price Determination and Energy Management of EV Parking Lot Considering Price Elasticity
Tong Wu, Gengfeng Li, Zhaohong Bie

1789

Multi-Virtual Inertia Coordinated Control Technology for AC-DC Hybrid Micro-Grid
Lin Yunfeng, Fu Lijun, Xia Li, Gao Xueping

1794

Research on Improved Method of Jiles-Atherton Hysteresis Model Based on Parameter Identification of Genetic Algorithm
Kangkang Han, Zhiguo Hao, Hongxiang Xu

N/A

Study on Operation Characteristics of Wind Power Grid-connected Doubly-Fed AC_DC Hybrid System
Guoqing YANG, Jingjing WANG, Deyi WANG, Shujie ZHANG, Yanhe LI, Yourui XU

1804
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static Security Risk Assessment of Power Grid under Planned Maintenance</td>
<td>1809</td>
</tr>
<tr>
<td>Tieqiang Wang, Peng Lu, Xin Cao, Xiaodong Yang, Wei Wang, Hao Lv, Chunxian Feng, Tong Liu, Shaoyan Li</td>
<td></td>
</tr>
<tr>
<td>Monthly Electricity Forecast Based on Electricity Consumption Characteristics Analysis and Multiple Effect Factors</td>
<td>1814</td>
</tr>
<tr>
<td>Hu Mengying, Duan Jiandong, Hou Zequan, Wang Peng, Fang Shuai, Hou Peijia, Fu Chaoyuan</td>
<td></td>
</tr>
<tr>
<td>Coordinated Control Strategy of Offshore Wind Farm and MMC-HVDC to Improve the Inertia Level of Power System</td>
<td>1819</td>
</tr>
<tr>
<td>Zun Ma, Xiaoru Wang, Song Wu, Xiufeng Zhang</td>
<td></td>
</tr>
<tr>
<td>A K-ESPRIT Based Measurement Method with Wide Frequency Bandwidth</td>
<td>1824</td>
</tr>
<tr>
<td>Xiaowei Ren, Jiaxian Li, Hao Liu, Tianshu Bi</td>
<td></td>
</tr>
<tr>
<td>Implementation of Fast Bus Tripping Scheme using Microprocessor-based Relays</td>
<td>1829</td>
</tr>
<tr>
<td>Research on Traveling Wave Based Fault Line Selection Technology in Distribution System of Petrochemical Industry</td>
<td>1833</td>
</tr>
<tr>
<td>Jie Yuan, Haibo Wei, Guocheng Zou, Jianwen Kang, Qilong Qian, Shenxing Shi, Xinzhou Dong</td>
<td></td>
</tr>
<tr>
<td>Nodal Frequency Performance of Power Networks</td>
<td>1838</td>
</tr>
<tr>
<td>Huisheng Gao, Hui Yuan, Huanhai Xin, Linbin Huang, Changyou Feng</td>
<td></td>
</tr>
<tr>
<td>Risk Assessment of Combined Natural Gas System and Power System with Storage Device</td>
<td>1843</td>
</tr>
<tr>
<td>Yuan Hu, Wang Chunxiao, Xue Song, Zhaohong Bie, Yan Chao, Cai Liang</td>
<td></td>
</tr>
<tr>
<td>Decentralized Voltage Control Method to Regulate Voltage Profile in Distribution Network (Full Paper)</td>
<td>1848</td>
</tr>
<tr>
<td>Donggyun Han, Jihui Hwang, Myeonsong Choi, Seongil Lim</td>
<td></td>
</tr>
<tr>
<td>AC-Protection in the Context of AC_DC-Hybrid Lines</td>
<td>1854</td>
</tr>
<tr>
<td>Jonas Prommetta, Jakob Schindler, Johann Jaeger, Timo Keil, Christoph Butterer</td>
<td></td>
</tr>
<tr>
<td>Fault Protection Strategy and Switching Overvoltage in a ±500 kV MMC-HVDC Grid</td>
<td>1859</td>
</tr>
<tr>
<td>Xue Han, Wenxia Sima, Ming Yang, Licheng Li, Tao Yuan, Zhengzheng Fu</td>
<td></td>
</tr>
<tr>
<td>The Experiences of Decentralized Self-Healing Grid</td>
<td>1864</td>
</tr>
</tbody>
</table>
Characteristics of Short-term Voltage Dynamics Based on Mixed Monotone Decomposition
Minquan Chen, Junlei Liu, Zhuoran Kang, Sijie Liu, Shangyuan Li, Deqiang Gan, Yunxiao Bai, Xiaqiang Peng

Ubiquitous Power Internet of Things Architecture Construction Plan
Jian Zhong, Tao Zheng

Damping inter-area oscillation by fast power modulation of DFIG
Qijia Yang, Yangyang Zhao, Guihong Wu, Yu Zhang, Zheng Yuan, Tingyun Gu, Zhengchun Du

SMA based Reduced-order Model for DFIGs
YuZhang, Yangyang Zhao, Guihong Wu, Qijia Yang, Cong Wang, Tingyun Gu, Zhengchun Du

Optimal Control of MTDC for improving rotor angle stability of AC system
Weihuang Huang, Xiaotian Yuan, Hong Rao, Yan Li, Yujun Li, Faxi Peng

Key Aspects in Modelling Transformers for Real Time Simulation: Open Phase, DC Bias and Internal Faults
Yuefeng Liang, Yi Zhang, Ali Dehkordi

Research on the Developing Mode and its Evaluation Index System for Future Power Systems
Bo Jiang, Hengli Gui, Liu Yang, Zhaohong Bie, Shiyou Liu, Gengfeng Li