

**14:00 – 17:30, 19th October 2017****Oral Presentation** (updated on 12 September 2017)**Session A1 Wind Technology**

- 14:00 --- 15:30 **A1.1 (0006)**
Effects of atmospheric stability on wind resource characteristic parameters
Ma Xiaomei, Li Tao, Liu Yongqian, Han Shuang
- A1.2 (0020)**
Study on Application Status of XLPE Insulated Submarine Cable Used in Offshore Wind Farm of China
Hongliang ZHANG, Jianmin ZHANG, Lewis DUAN, Shuhong XIE, Jianlin XUE
- A1.3 (0023)**
A New HVDC Topology Structure Using Existing AC Cable Lines for Integrating Renewable Energy Sources
F Xu, X H Xuan, Y Lu, P Qiu, D Z Jiang, Q Chen
- A1.4 (0048)**
A Method of Wind Power Planning Considering Peak Load Regulation and Economy-social Benefit of Wind Power
Chuan Zhao, Tongxin Zhou, Yang Fu, Mingliang Wu, Shuang Yuan
- A1.5 (0096)**
Numerical Stability Analysis of PMSG-based Wind Energy Conversion System: A Simple Example of Drive System
Hua Ye, Yanan Tang
- A1.6 (0143)**
Analytical model to composite inertia control for wind turbine generators participating in frequency regulation
Shenghu Li, Guowei Zhu, Jiejie Huang, Yun Tan, Chen Chen
- 15:30 --- 16:00 Poster Session and Refreshments
- 16:00 --- 17:45 **A1.7 (0146)**
Modified Modulation Strategy of MMC for Wind Farm Integration
Tiezhu Wang, Lei Wan, Junxian Hou, Yifeng Dong, Yi Wang, Shanshan Wang
- A1.8 (0193)**
Solution of Wind Turbine Blade Doppler and Its Characteristic Analysis
Bo Tang, Fang Zou, Ziang Sun, Hansheng Huang, Li Ye

A1.9 (0247)

Multi-machine equivalent model parameter identification method for DFIG-based wind power plant based on measurement data

K Luo, W H Shi, J X Qu

A1.10 (0309)

Virtual Resistor Circuit-based Control Strategy of STATCOM during Network Unbalance

Qiongfeng Zhu, Qing Li, Jinping Zhang, Peng Cheng

A1.11 (0377)

SSCI Detection and Protection in Doubly-Fed Generator Based on DTFT

Zhenxing Zhang, Shiming Liu, Guofang Zhu, Zhaonan Lu

A1.12 (0405)

A deep-learning-based scenario generation strategy considering the correlation between multiple wind farms

Xu Yuan, Shi Libao, Ni Yixin

A1.13 (0416)

Optimal Layout of Wind Farm for Lightning Protection Based on Lightning Leader Development Model

Wenfang Zhang, Li Zhang, Jingxian Cui, Guozheng Wang, Tong Zhao, Liang Zou, Xinghua Wang

Session D1a Power Systems Integration Issues

14:00 --- 15:30

D1a.1 (0003)

Research on Evaluation Method for Operation Economy and Technology of Regional Smart Energy Grid

YUAN Wenguang, WEI Linjun, LI Yong, CHI Yongning

D1a.2 (0017)

The Frequency Emergency Control Characteristic analysis for UHV AC/DC large receiving end power grid

Hucheng Li, Yubo YUAN, Xiaoyi ZHANG, Chenbo Su

D1a.3 (0021)

An Efficient Approach for Commutation Failure Immunity Level Assessment in Hybrid Multi-Infeed HVDC Systems

H Xiao, Y Li, X Duan

D1a.4 (0088)

A new scheme of UHVDC transmission line protection based on Chebyshev window filter

Zhengxing Li, Hong Tan

D1a.5 (0089)

An Improved BP Neural Network Algorithm to Wind Power Forecast

Zheng Wang, Bo Wang, Chun Liu, Weisheng Wang

D1a.6 (0090)

A method to determine the maximum generation capacity of distribution generation in low voltage distribution feeders

Shixiong Fan, Chen Li, Zechen Wei, Tianjiao Pu, Xingwei Liu

15:30 --- 16:00 Poster Session and Refreshments

D1a.7 (0092)

Research and Implementation of Outage Plan System for Reliability and Clean Energy Consumptive Power Constraint

Li Peijun, Zheng Xiaoyu, Zhang Jiali, Liu Lihua, Zhang Xiaotian, Li Min

D1a.8 (0140)

Study on Stability Mechanism of the Sending-Side Three-Machine-Group System after Multiple HVDC Commutation Failure

Jingzhe Tu, Yan Pan, Jian Zhang, Junchuan Jia, Xiaohui Qin, Jun Yi

D1a.9 (0150)

Economic Dispatching Strategy Based on Multi-Time Scale Complementarity of Heterogenous Energy

Q Liu, Z Guo

D1a.10 (0197)

Inbreded GA for optimal DR allocation in distribution systems

N Kanwar, N Gupta, K R Niazi, A Swarnkar

D1a.11 (0208)

An Adaptive Protection Scheme for Distributed Systems with Distributed Generation

XH Song, Y Zhang, S Zhang, SZ Song, J Ma, WB Zhang

Session D1b: Power Systems Integration Issues

14:00 --- 15:30 **D1b.1 (0219)**

Microgrid Multi-Source Coordination Optimal Control Based on Multi-Scenarios Analysis

Changchun Cai, Haolin Liu, Hao Zheng, Feng Chen, Lihua Deng, Qianqian Xu

D1b.2 (0234)

Probabilistic Forecast for Aggregated Wind Power Outputs Based on Regional NWP Data

Zhao Wang, Weisheng Wang, Bo Wang, Shuanglei Feng

D1b.3 (0257)

Stochastic expansion planning of interconnected distribution networks with renewable sources considering uncertainties and power transfer capability

J Liu, H Z Cheng, Q Xu, Z Lan, P L Zeng, L Z Yao

D1b.4 (0264)

Design of Micro Automatic Weather Station for Modern Power Grid Based on STM32

Hao Li, Ochani Manesh Kumar, Hengxu Zhang, Lei Zhang

D1b.5 (0292)

A coordinated charging strategy of PEVs for maximizing the distributed energy based on time and location

Zhihui Wang, Shixiong Fan, Baozhu Liu, Xingwei Liu, Zechen Wei

D1b.6 (0318)

Capacity Value Evaluation of Demand Response in Smart Distribution Systems Considering Customer Willingness Factor

B Zeng, J Feng, X Wei, Z Liu

15:30 --- 16:00 Poster Session and Refreshments

D1b.7 (0349)

A Very Short-term Prediction Model for Photovoltaic Power Based on Improving the Total Sky Cloud Image Recognition

Zhu Xiang, Wu Ji, Zhou Hai, Ding Jie, Cui Fang, Zhao Xin

D1b.8 (0360)

An Improved Power Flow Algorithm for Hybrid AC/DC Grid With Reactive Power Control

Qian ZHOU, Ningyu Zhang, Xinyao Zhu, Jingbo ZHAO, Zhe Chen

D1b.9 (0372)

Framework Planning of Active Distribution Network Considering Active Management

P Gao, H K Chen, X Zheng, B Wu

D1b.10 (0374)

Analysis of the HVDC Grid's Influence on Short-circuit Current Level of AC system

Yingbiao Li, Shanshan Wang, Guangquan Bu, Yan Chen Yang, Bing Zhao, Tiezhu Wang

D1b.11 (0401)

Method for Diagnosis of On-load Tap Changer Based on Wavelet Theory and Support Vector Machine

X Duan, T Zhao, T Li, J Liu, L Zou, L Zhang

Session B: PV Systems Technology

B1.1 (0045)

General dead-time elimination PWM for voltage source inverters

Chunwei Song, Wangqing Lin, Jinying Ni

B1.2 (0063)

Global MPPT Algorithm with Coordinated Control of PSO and INC for Rooftop PV Array

Jinhua Liu, Junyin Li, Jianan Wu, Wenhui Zhou

B1.3 (0069)

Study on Electromechanical Transient/Electromagnetic Transient Hybrid Simulation of Photovoltaic Grid-connected System

Hang Meng, Wenzhuo Liu, Mingyu Yang, Xiaohui Ye, Xinli Song, Tao Liu

B1.4 (0249)

Identification of the Photovoltaic Model parameters using the Crow Search algorithm
A S Omar, H M Hasanien, M A ELgeny, M AL Badr

B1.5 (0277)

An Improved Maximum Power Point Tracking Algorithm with Cuk Converter for PV Systems
S Zongchang, Y Zhoujun

15:30 --- 16:00 Poster Session and Refreshments

16:00 --- 17:45

B1.6 (0293)

Research on Non-Directional Voltage Ride-through Control Technology of Household PV Grid-Connected Inverters
Kun Chen, You bin Zhou, Hua an Xu, Bo Wen, Jun He

B1.7 (0495)

An Ultra-short term PV power forecasting based on ELM segmentation model
Bo Jing, Zheng Qian, Yan Pei, Jingyi Wang

B1.8 (0594)

Research on Power Loss of Distribution Network with Photovoltaic Access
Rundong Han, Qi Wang, Tianzheng Wang, Yaxuan Zheng, Shaoping Guan

B1.9 (0777)

Thermal Analysis and Reliability Evaluation of Cascaded H-Bridge Multilevel PV Inverter for Grid connected Applications
G Ranjith kumar, Z Guo-Rong, L Jianghua, C Wei, L Bo

B1.10 (0837)

Study on charge and discharge control strategy of super-capacitor in photovoltaic system
Wei Yongqing, Zhang Xiaofeng, Yu Fei, Zhu Peng

Invited Sessions

1/2/3/9/10/11

14:00 --- 15:30

SESSION 3**IV1.1 (0047)**

Wind Turbine Model Validation Based on State Interval and Error Calculation
Q Li, J He, S Y Qin, X N Shi

IV1.2 (0186)

Modelling of PV module and its Application for Partial Shading Analysis—Part I: Macro-model and Parameter Estimation of PV module
Mao Zhang, Weiping Zhang, Peng Mao, Shunan Zhong, Yanlong Sun

IV1.3 (0188)

Modelling of PV module and its Application for Partial Shading Analysis—Part II : Partial Shading Analysis and Simulation Approach of Large Scale PV Array
Mao Zhang, Weiping Zhang, Peng Mao, Shunan Zhong, Yanlong Sun

IV1.4 (0735)

Average Value Model of Grid Side Converter in PMSG for System-Level Studies
Yankan Song, Ying Chen, Shaowei Huang, Zhitong Yu, Yuan Qiao

IV1.5 (0772)

Modeling and validating solar power inverter model for power system stability analysis
J Ma, D W Zhao, M H Qian, L Z Zhu, H Geng

IV1.6 (0862)

Modal Analysis of a Grid-Connected DFIG-based WT Considering Multi-Timescale Control Interactions
Minhui Wan, Jiabing Hu

SESSION 1**IV1.7 (0577)**

Linear Demagnetizing Strategy of DFIG-based Wind Turbines for Improving LVRT Responses
Yuanzhu Chang, Xiangping Kong

15:30 --- 16:00 Poster Session and Refreshments

16:00 --- 17:45 **SESSION 9**

IV1.8 (0367)

Impact of Series Compensation on Operation Performance of Large-scale PV Plants
G.F Lu, M Miao, X YU, C Liu, Y LI, W.H Chen

IV1.9 (0471)

Study on Active Power Steady-State Security Region Considering TCSC
B P CHEN, T LIN, R S CHEN, X L XU

IV1.10 (0525)

Large Disturbance Stability Evaluation of Interconnected Multi-Inverter Power Grids with Virtual Synchronous Generator Model
Keyou Wang, Chen Qi, Xin Huang, Guojie Li

SESSION 2**IV1.11 (0769)**

Short-term Photovoltaic Power Probability Forecasting Based on OLPP-GPR and Modified Clearness Index
Fen LI, Chunyang LI, Yong YANG, Quanquan YAN, Jinbin ZHAO, Lijuan WANG

SESSION 10**IV1.12 (0347)**

Analysis of the Influence of Renewable Energy Generation on Market Power
Nan Shang, Li Guo, Yi Ding, You Lin, Lei Liu, Changzheng Shao, Yonghua Song

IV1.13 (0474)

Optimal dispatch model considering the bidding uncertainty of wind power in deregulated power system

Xiang Xia, You Lin, Jianliang Fang, Wei Jiang, Yingjing He, Nan Shang, Yi Ding

SESSION 11**IV1.14 (0658)**

Study on resonant control of grid-side converter in wind power system under voltage distortion

xuemei zheng, He Li

09:30 – 13:00 & 14:00 – 17:30, 20th October 2017

Oral Presentation (updated on 12 September 2017)

Session A2: Wind Technology

09:30 --- 11:00

A2.1 (0422)

Dynamic Striking Distance and Electrical Geometrical Model of Wind Turbine Blades Based on Lightning Physics

Y Zhang, L Zhang, K Zhang, G Wang, T Zhao, L Zou

A2.2 (0476)

A review on the model validation and parameter estimation approaches of wind power generators

Yi-Liang Hu, Yuan-Kang Wu

A2.3 (0479)

Research on Capacity Configuration Method of Concentrated Reactive Power Compensator for Wind Farm LVRT Capability

J He, Q Li, J Ma, WB Zhang, Y Zhao

A2.4 (0537)

Maximum Energy Yield Oriented Turbine Control in PMSG based Wind Farm

J Tian, D Zhou, C Su, F Blaabjerg, Z Chen

A2.5 (0576)

Design and operation of DSTATCOM for power quality improvement in distribution systems

Manish Kumar, Anil Swarnkar, Nikhil Gupta, K. R. Niazi

A2.6 (0617)

The impacts of PMSG on SSR of DFIG and series-compensated power system based on the impedance characteristics

Y Li, H Liu, W Ning, H Jiang, Y Li

- 11:00 --- 11:30 Poster Session and Refreshment
- 11:30 --- 13:00 **A2.7 (0627)**
 Study of the impact on SSR in series-compensated wind farms from different structures of power grid
 Y Li, H Liu, W Ning, X Xie, Y Li
- A2.8 (0676)**
 A Combined Active and Reactive Power Control Strategy to Improve Power System Frequency Stability with DFIGs
 Congwei Tu, Jun Cao, Lei He, Ye Fang
- A2.9 (0679)**
 Phase Error Correction Method of Wind Field Modeling Over Complex Terrain
 Z P Song, S L Jin, W L Jiang, S L Feng, B Wang
- A2.10 (0702)**
 The Optimal Scheduling Model of Wind Power Generation Considering the Participation of Electric Vehicle Batteries
 Feng Liang, Wu Kuihua, Wu Jian, Sun Wei, Yang Bo, Wang Jian, An Peng
- A2.11 (0730)**
 A Robust Optimal Shunt Dispatch Method in Wind Farm Integration Area
 Fengda Xu, Qinglai Guo, Hongbin Sun, Boming Zhang, Lin Jia
- A2.12 (0747)**
 Improved Virtual Inductance Based Control Strategy for DFIG under Weak Grid Condition
 R Fang, W J Chen, X G Zhang, D G Xu
- A2.13 (0781)**
 Positive and Negative Sequence Control of DFIG based Wind Turbines and its Impact on Grid Voltage Profile Concerning Converter Control Capability
 Lun Yan, Xiaoming Yuan
- 13:00 --- 14:00 Poster Session and Lunch
- 14:00 --- 15:30 **A2.14 (0797)**
 Voltage stability enhancement by the coordinated operation of OLTCs in the presence of wind turbines using Taguchi method
 Saurabh Ratra, Rajive Tiwari, K R Niazi
- A2.15 (0805)**
 The Study on Optimal Site Selection of a Met Mast in Interconnected Wind Farm
 X M Zhang, Y Liu, K Bai, P Song, J B Liu, Y Cui, S X Zhou
- A2.16 (0854)**
 An Advanced Control Strategy and Its Controllable Area for Doubly Fed Wind Farm Integrated into Power Systems with VSC-HVDC Transmission under Grid Fault
 J Ouyang, T Tang, D Zheng, R Yu, X Zhang, X Xiong

A2.17 (0855)

A new heuristic algorithm for the problem of vessel routing optimization for offshore wind farms

Rafael Dawid, David McMillan, Matthew Revie

A2.18 (0858)

Wind Speed Optimization Method Of Numerical Prediction For Wind Farm Based On Kalman Filter method

Shenbing Hua, Shu Wang, Shuanglong Jin, Shuanglei Feng, Bo Wang

A2.19 (0877)

Ultra-short-term wind speed forecasting method based on spatial and temporal correlation models

Zhou Haiqiang, Xue Yusheng, Guo Jizu, Chen Jiehui

A2.20 (0878)

RENEWABLE ENERGY INTEGRATION CAPACITY ASSESSMENT IN REGIONAL POWER GRID BASED ON AN ENHANCED SEQUENTIAL PRODUCTION SIMULATION

Yan ZHANG, Xianzhong DAI, Xinyang HAN

15:30 --- 16:00 Poster Session and Refreshments

16:00 --- 17:30

A2.21 (0898)

Inertial Response Analysis of PMSG-based WECS with VSG control

Jiangbei Xi, Hua Geng, Geng Yang, Shaokang Ma

A2.22 (0902)

The investigation of the mechanism of SSI caused by the inter-harmonics in DFIG

Tao Wen, Yao Huang, Dawei Zhao, Lingzhi Zhu, Xitian Wang

A2.23 (0906)

Voltage and Reactive Power Optimization of Offshore Wind Farms Based on Terminal Voltage Control mode of Double-Fed Induction Generator

Baichao Chen, Xuanyao Luo, Xin Yan, Jiabin Yuan, Cuihua Tian

A2.24 (0920)

Voltage Balance Optimization among Subsystems of Wind-PV-ES Hybrid Generating System

H Wu, Y Li, Z Lu, H Tang

A2.25 (0926)

Inertial and primary frequency response model of variable-speed wind turbines

M Krpan, I Kuzle

A2.26 (0940)

Control and operation of a hybrid HVDC integrating wind farm based on SB-MMC and LCC

Shida Sun, Wang Xiang, Liangzhong Yao, Yan Li, Jinyu Wen

A2.27 (0964)

Study on the Dynamic Reactive Power Characteristics of MMC-MTDC for Wind Farm Integration

Mang Jiang, Qinglai Guo, Hongbin Sun, Boming Zhang, Lin Cheng, Shuanbao Niu

**Session D2a:
Power Systems Integration Issues**

09:30 --- 11:00

D2a.1 (0402)

Distribution system planning incorporating distributed generation and cyber system vulnerability

H H Wang, L B Shi, Y X Ni

D2a.2 (0406)

ANALYSIS AND CONTROL STRATEGY OF UNBALANCED POWER IN MMC-HVDC GRID

Yang Yanchen, Ma Shicong, Li Yingbiao

D2a.3 (0407)

Evaluation of solar irradiance on inclined surfaces models in the short-term photovoltaic power forecasting

Wei Liaoliao, Cui Chenggang, Yang Ning, Chen Hui

D2a.4 (0421)

A solution of voltage stability assessment for complicated power system incorporating wind power

Hao Chen, L B Shi, Y X Ni

D2a.5 (0465)

Coordinated Economic Dispatch and Cost Allocation of Cooperative Multi-Microgrids

Hao Xiao, Yan Du, Wei Pei, Li Kong

11:00 --- 11:30

Poster Session and Refreshment

11:30 --- 13:00

D2a.6 (0480)

Research of Active Load Regulation Method for Distribution Network Considering Distributed Photovoltaic and Electric Vehicles

Y Q FANG, R LI, L N WANG, B SONG, E W Li, Q S ZHANG

D2a.7 (0482)

Risk Assessment of Distribution Network Operation Considering Time Dependent Relativity

Tianying XIAO, Wei PEI, Hua YE, Geng NIU, Zhiping QI

D2a.8 (0493)

A Bi-Level Two-Stage Stochastic SCUC for ISO Day-Ahead Scheduling Considering Uncertain Wind Power and Demand Response

NW Gong, XJ Luo, DY Chen

D2a.9 (0499)

Study of shell circulating current and transient ground potential rise in 220KV Gis

Taiyu Chen, Hongshun Liu, Dongyang Hu, Xinghua Liu, Tianxi Xu, Liang Ji, Xiaoshuai Yang

- D2a.10 (0518)**
Modelling and Control of a VSC MVDC Distribution Network with DFIG Wind Farm
P Simiyu, A Xin, G T Bitew, K Wang
- 13:00 --- 14:00 Poster Session and Lunch
- 14:00 --- 15:30 **D2a.11 (0539)**
Modeling and control system design of hybrid distribution transformer
Y B Liu, D L Liang, Q S Wang, Q X Chen, Z Liang
- D2a.12 (0573)**
Distribution voltage control utilising the reactive power capabilities of wind generators
D Danzerl, S Gill, O A Lara
- D2a.13 (0585)**
Analytical Model of Hybrid MMC for Dynamic and Steady Studies
Xiaojun Lu, Wang Xiang, Weixing Lin, Jinyu Wen
- D2a.14 (0590)**
Research on Maximum Allowable Capacity of Distributed Generation in Distributed Network under Global Energy Internet Considering Static Voltage Stability
Lijuan HU, Ke-yan LIU, Wanxing SHENG, Yinglong DIAO, Dongli JIA
- D2a.15 (0597)**
Optimal Scheduling Strategy of Active Distribution System Using Brain Storm Optimization Algorithm
Jiandong Duan, Lupeng Chen, Qian Sun, Jing Wang, Teng Mu, Fuping Yan
- 15:30 --- 16:00 Poster Session and Refreshments
- 16:00 --- 17:30 **D2a.16 (0599)**
Optimal power factor regulation of dispersed wind farm in distribution network system under diverse load and stochastic wind conditions
Hao Liu, Wei Wang, Jia Cui, Fen Tang
- D2a.17 (0653)**
The transmission expanding network planning with consideration of circuits outage
Jiankang Liang, Xiuli Wang, Yifei Wang, Huiyuan Bai
- D2a.18 (0667)**
A Hybrid Transient Simulation Platform for Interconnected Transmission and Distribution System Based on PowerFactory and PSASP
Haiyun Wang, Yankan Song, Shaowei Huang, Ying Chen, Dongsheng Jiao, Yeniu Qian
- D2a.19 (0722)**
A modified R-L model based Protection for VSC-DC Distribution Lines
Ke JIA, Meng LI, Tianshu BI, Bohan LIU, Wei LI, Qixun YANG

Session D2b: Power Systems Integration Issues

- 09:30 --- 11:00 **D2b.1 (0731)**
Analysis and Modelling of Secondary and Tertiary Control for Frequency Regulation in Power Systems with Renewable Energy Sources Based on Balancing Market
B Jie, T Tsuji, K Uchida
- D2b.2 (0740)**
A New Reliability Evaluation Method for Distribution Network
N B Liu, T T Wu, T Xu, Y Ma
- D2b.3 (0745)**
The Influence of Regional Load on Subsynchronous Resonance of Wind Farm-Series compensated Power Transmission System
X W Chen, Y H Li, H Liu, W Song
- D2b.4 (0766)**
The implementation and value of power hardware in the Loop testing bed for wind turbines integrated into grid
K Luo, W H Shi, H Y Tang
- D2b.5 (0806)**
Mixed Inter Second Order Cone Programming Taking Appropriate Approximation for the Unit Commitment in Hybrid AC-DC Grid
B Zhou, X M Ai, J K Fang, J Y Wen, J H Yang
- 11:00 --- 11: 30 Poster Session and Refreshment
- 11:30 --- 13:00 **D2b.6 (0834)**
DC-DC AUTOTRANSFORMER WITH UN-INTERRUPTED OPERATING CAPABILITY DURING DC FAULT
Mengbo Li, Wang Xiang, Wenping Zuo, Liangzhong Yao, Weixing Lin, Jinyu Wen
- D2b.7 (0844)**
A sub/super-synchronous harmonics measurement method based on PMUs
Sudi Xu, Tianshu Bi, Hao Liu, Chuang Cao
- D2b.8 (0869)**
The Research and Simulation of Control Strategy for Multi-terminal Flexible High Voltage DC Transmission System with Renewable Energy Access
Siliang Jian, Linong Wang, Bin Song, Tianzhu Chen, Xiaochun Li, Yaqi Fang
- D2b.9 (0872)**
Optimized Recovery Stratedy for Microgrid with Distributed Generations
H Q Zhou, J H Chen, D Y Sun, J Z Guo
- D2b.10 (0918)**
Research on Optimal Storage Capacity of DC Micro-grid System in PV Station
WU MING, SUN LIJING, ZHANG HAI, WANG WEI, LUO GUOMIN

13:00 --- 14:00 Poster Session and Lunch

14:00 --- 15:30

D2b.11 (0938)

Research on fault protection of DC grid based on hybrid MMC
Junjie Zhang, Wang Xiang, Weixing Lin, Jinyu Wen

D2b.12 (0957)

Dynamic Characteristic and Interaction Analysis of Synchronous Generator Based on Phase-Amplitude Motion Equation
Luhan Huang, Xiaoming Yuan

D2b.13 (0958)

Wind Farm Aggregation Method Based on Motion Equation Concept: A Case Study
Zhichao Cui, Xiaoming Yuan, Meiqing Zhang

D2b.14 (0959)

A Multiband Filter: Estimator of Different Frequency Components of Grid Voltage
Chenhui Huang, Xiaoming Yuan, Sheng Li

D2b.15 (1002)

IMPACT OF LARGE-SCALE PHOTOVOLTAIC GENERATION INTEGRATION STRUCTURE ON STATIC VOLTAGE STABILITY IN CHINA'S QINGHAI PROVINCE NETWORK
Ding Wang, Xiaoming Yuan, Mingquan Zhao, Yunzhe Qian

15:30 --- 16:00

Poster Session and Refreshments

Session F:

Technology, policy and market options for power system flexibility

16:00 --- 17:30

F1 (0024)

Renewable Energy Investment Decision Indices Based on "Element-Performance-Economic Benefits" Causality Under Global Energy Interconnection
wenjiao zai, bo wang

F2 (0205)

Analysis on the Peak Load Adjustment Adaptability of the existing 300MW Cogeneration Unit manufactured by STC
Haisheng Yang, Shengyang Lu, Wenying Wang

F3 (0516)

Power Supply Company Purchase'Portfolio Optimization Considering Electric Vehicle Charging Load Forecasting
Yahong Li, Hui Ren

F4 (0762)

A Method to Evaluate Comprehensive Economic Benefits of Hybrid Wind Power-Pumped Storage System integration Considering the Carbon Emission Trade.
Y Liu, C Ma, Y Wang

F5 (0910)

A Novel Bidding Method for Wind Generation Company in Nodal Power Market
Yangyang Liu, Tianen Chen, Jianxue Wang, Yan Li, Yunhao Li, Ruifeng Liu

**Session C: Energy storage for renewable sources
& Session E**

- 09:30 --- 11:00 **Session C**
C1 (0110)
PHASOR MODEL SIMULATION OF GRID INTEGRATED VARIABLE SPEED PUMPED STORAGE SYSTEM
B Girmaw Teshager, H Minxiao, M Zhaojun, S Xiaofang, X Jianbing, P Simiyu
- C2 (0187)**
Wind power fluctuation mitigation based low frequency oscillation
sun yushu, ye hua, sun xiaozhe, miao fufeng
- C3 (0210)**
A Battery Management System for Li-ion Battery
FF Zhu, GA Liu, KL Wang, K Jiang
- C4 (0248)**
Coordinated Control Strategy of Hybrid Energy Storage to Improve Accommodating Ability of PV
D.L. Zhang, J.B. Guo, J.L. Li
- C5 (0388)**
Cost-benefit analysis of pumped hydro storage using improved probabilistic production simulation method
Baorong Zhou, Shuhua Liu, Siyu Lu, Xiaoyu Cao, Wenmeng Zhao
- 11:00 --- 11:30 Poster Session and Refreshment
- 11:30 --- 13:00 **C6 (0390)**
Control Method of a Single-Phase AC-DC Converter with Integrated Active Filter
H Z Sun, H Wang, G Q Han, J H Gan
- C7 (0643)**
Analysis of Controllable Capacity for Electric Vehicle Battery Swapping Stations
P P Xie, J Z Zhu, P Z Xuan
- C8 (0688)**
Siting and Sizing of Energy Storage System of Microgrid Based on Power Flow Sensitivity Analysis
Haifeng Wang, Qing Lv, Geng Yang, Hua Geng
- C9 (0725)**
Comparison of Centralized and Distributed Energy Storage Configuration for AC/DC Hybrid Microgrid
ZHU Yongqiang, WANG Tianjing
- 13:00 --- 14:00 Poster Session and Lunch
- 14:00 --- 15:30 **Session E**
E1 (0039)
Techno-economic analysis of a PV-wind-battery-diesel standalone power system in a

remote area
T Adefarati, Ramesh Bansal, J Justo

E2 (0083)

The influence of cogging force on Solar Thermo Acoustic Generation systems
D WANG, Y SHI, T MENG, Y YUAN, C LIU

E3 (0296)

Joint maintenance scheduling of the Municipal Solid Waste Incineration Power Plant and Connected Power System Devices
Yangyang Liu, Zhongqi Shen, Xiaowei Tang, Hongbo Lian, Jiarui Li

E4 (0438)

Design and Control of Portable Fuel Cell Power Supply System
Yang Fu, Chuan Zhao

E5 (0457)

Pumped-storage power generation system based on wave energy
Shao-qian Zhang, Yong-qiang Zhu

15:30 --- 16:00 Poster Session and Refreshments

16:00 --- 17:30

E6 (0555)

A Strategy to Stabilize Power Fluctuation of Distributed Renewable Energy in a Combined Heat and Power Microgrid
Jinxiao Shi, Wentao Huang, Nengling Tai

E7 (0649)

Application of Multi-criteria Decision Analysis tool for design of a Sustainable Microgrid for a remote village in the Himalayas
Abhishek Kumar, Bikash Sah, Deng Yan, He Xiangning, Praveen Kumar, R.C. Bansal

E8 (0798)

Economic Operation Analysis of natural Gas-Power Multi-energy Flow System
Zhilong Wang, Zesen Wang, Jun Cao, Liping Wang

E9 (0927)

Optimisation Procedure for Designing a Magnetic Gear
Ben McGilton, Richard Crozier

E10 (0929)

Energy Management System controller for a Rural Microgrid
Abhishek Kumar, Deng Yan, He Xiangning, Praveen Kumar, R.C. Bansal

**Invited sessions
4-8 & 12**

09:30 --- 11:00

SESSION 4

IV2.1 (0301)

Effective restoration strategies of interdependent power system and communication network

Prabin Baidya, Wei Sun

IV2.2 (0303)

Improving wind power utilization under stormy weather conditions by risk-limiting unit commitment

Ximing Cai, Zhijun Qin, Yunhe Hou

IV2.3 (0857)

Frequency control framework of power system with high wind penetration considering demand response and energy storage

Hanyu Li, Jian Wang, Zhaobin Du, Fang Zhao, Huabin Liang, Baorong Zhou

IV2.4 (0861)

Optimal strategy for distribution system with PV based on voltage violation regulation

Shanhong Jin, Weiguo He, Jingwei Zhang, Xiang Zhu, Haoming Liu

SESSION 6

IV2.5 (0791)

Harmonic Control Optimization Model Considering Power Generation of Microgrid

Wang, Kai Wei, Jie Yuan, Qingquan Jia

IV2.6 (0816)

Hybrid passivity-based control strategy for split-capacitor-based shunt active power Filter

Yu Zhang, Qiming Cheng, Fengren Tan, Jie Gao, Deqing Yu

IV2.7 (0817)

A PCC Voltage Power Quality Restoring Strategy Based on the Droop Controlled Grid-connected Microgrid

Wei Feng, Kai Sun, Yajuan Guan, Josep M. Guerrero, Xi Xiao

11:00 --- 11:30 Poster Session and Refreshments

11:30 --- 13:00

SESSION 5

IV2.9 (0238)

Frequency Control Capability of Wind Turbine under Different Operation Status

Chen Zhu, Tianshu Bi, Guoyi Xu, Libin Yang, Chunlai Li, Jun Yang

IV2.10 (0490)

The Dynamic Characteristics of DFIG Frequency Oscillation of Wind Turbines with Virtual Inertia Control

J Ma, YQ Shen, YX Zhang

IV2.11 (0821)

Comparative Study on Primary Frequency Control Schemes for Variable-Speed Wind Turbines

Siyang Wang, Jiabing Hu, Shuo Wang, Haiyan Tang, Yongning Chi

IV2.12 (0887)

Study on the adaptation virtual Inertia Control Strategy of DFIG and Assessment of

equivalent virtual inertia time constant of connected power system
Xinshou Tian, Weisheng Wang, Yongning Chi, Yan Li, Chao Liu

SESSION 7

IV2.13 (0357)

Adaptability Analysis of Starting Element for Transmission Line to Wind Farm Integration

J Luo, G B Song, S P Gao, C Q Wang

IV2.14 (0826)

Directional pilot protection based on fault current for distribution network with DG

Wenli Li, Jinghan He, Dahai Zhang, Qiufang Zhang

IV2.15 (0868)

Short-circuit Current Analysis of Grid-connected LCL VSC by Operational Inductance

Jingyi Liu, Jiabing Hu, Yuanzhu Chang, Wangqianyun Tang, Haiyan Tang

13:00 --- 14:00 Poster Session and Lunch

14:00 --- 15:30

SESSION 8

IV2.16 (0123)

Suppression of Synchronous Resonance for Virtual Synchronous Generators

D Yang, H Wu, X Wang, F Blaabjerg

IV2.17 (0180)

Reactive Power Control Strategy of DFIG-Based Wind Farm to Mitigate SSO

X Wu, Y J Guan, W Ning

IV2.18 (0189)

SSO Damping in DFIG Based Wind Farm Integrated by Hybrid Series Compensator

Xinyao Zhu, Qian Zhou, Jiankun Liu, Yubo Yuan, Meng Jin

IV2.19 (0269)

The Mechanism and Characteristic Analyses of Subsynchronous Oscillations Caused by the Interactions between Direct-drive Wind Turbines and Weak AC Power Systems

Wei Liu, Xiaorong Xie, Huakun Liu, Jingbo He

IV2.20 (0275)

A review of emerging SSR/SSO issues and their classifications

L WANG, X XIE, J HE, H LIU, C WANG, Y ZHAN

IV2.21 (0362)

Small Signal Stability Analysis of Parralled-inverters for Multiple Photovoltaic Generation Units Connected to Weak Grid

Q Jia, G Yan, C Cai, Y Li

IV2.22 (0396)

A Method to Suppress Sub-Synchronous Oscillation of DFIG-Based Wind Farms Based on Virtual Impedance

W Ning, X Wu, Y J Guan, F Chen

- 15:30 --- 16:00 Poster Session and Refreshment
- 16:00 --- 17:30 **IV2.23 (0632)**
Sub-synchronous Torsional Interaction with VSC-HVDC affected by Feed-Forward Compensations in Current Controllers
Huafeng Zhou, Jiale Chen, Qixing Liu, Yaping Hu, Jianhang Zhu
- IV2.24 (0646)**
PLL Effect on Sub-synchronous Torsional Interaction with VSC-HVDC
Rong Hu, Jianhang Zhu, Hongtao Liu, Huafeng Zhou, Jiale Chen
- IV2.25 (0712)**
Damping Characteristics of Sub-synchronous Torsional Interaction of DFIG-Based Wind Farm Connected to HVDC System
H Y Xu, G L Zhang, Y T Hu, B F Gao, X W Zhang, R X Zhang
- IV2.26 (0802)**
Analysis of Impedance Characteristics Pertaining to Thermal Power Unit Based on State Space
S Q Zhao, R Li, B F Gao, N Wang
- SESSION 12**
- IV2.27 (0481)**
Operation and coordination control of a DC micro-grid incorporating all-DC wind farm
L B Shi, T Y Shi, Y Zhao, Y X Ni
- IV2.28 (0903)**
Improved Active and Reactive Power Control for Symmetrical Bipolar MMC-HVDC Systems During DC side Pole-to-Ground Fault
Kai Hu, Lei Lin, Zhen He, Chen Xu
- IV2.29 (0950)**
Cost Comparison of AC and DC Collector Grid for Integration of Large Scale PV Power Plants
weilin li, kun he, yaqiang wang
- IV2.30 (1001)**
BEST PATHS Simulation Toolbox for the Grid Connection of Offshore Wind Farms Using HVDC Networks
Sheng Wang, Jun Liang