

2021 The 3rd Asia Energy and Electrical Engineering
Symposium
第三届亚洲能源与电气工程研讨会
(AEEES 2021)

With workshop of
2021 The 3rd International Conference on Power and
Energy Technology
第三届电力和能源技术国际国际会议
(ICPET 2021)

chengdu
3 月 26-29 日 | 中国成都

Venue : Dading Century Plaza Hotel
成都大鼎世纪大酒店

Add: NO.298 Tianren South Street , Chengdu , China
中国成都市天仁南街 298 号

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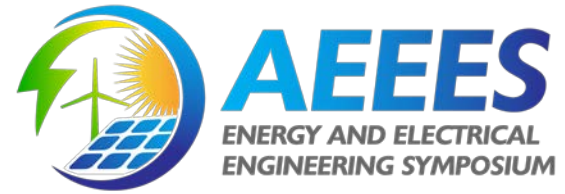


THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND



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WELCOME ADDRESS 欢迎词



We are pleased to welcome you to 2021 The 3rd Asia Energy and Electrical Engineering Symposium (AEEES 2021), which will take place in Chengdu, China during March 26-29, 2021

Followed by the success of AEEES 2020, AEEES 2021 has received over 300 papers. After several rounds of review procedure, the program committee accepted those papers to be published in conference proceedings. We wish to express our sincere appreciation to all the individuals who have contributed to AEEES 2021 conference in various ways. Special thanks are extended to our colleagues in the program committee for their thorough review of all the submissions, which is vital to the success of the conference, and also to the members in the organizing committee and the volunteers who had dedicated their time and efforts in planning, promoting, organizing and helping the conference.

Because of the special situation for these 2 years, AEEES 2021 will be held onsite and online at the same time. In the morning, we are honored to invite three keynote speakers to present onsite, Prof. Jinjun Liu, IEEE Fellow from Xi'an Jiaotong University, China; Prof. Fujin Deng from Southeast University, China and XXX from xxx. While in the afternoon, Prof. Nikos Hatzigiorgiou IEEE Fellow from National Technical University

of Athens, Greece; Prof. Atsuo Kawamura, IEEE Fellow from Yokohama National University, Japan and Prof. Soteris Kalogirou, IEEE Fellow, from Cyprus University of Technology, Cyprus will share their speech virtually.

For the parallel sessions also will be divided into onsite and online. One best presentation will be selected from each session, evaluated from originality; applicability; technical Merit; qualities of PPT; English. The winners of Young Scientist Awards, Best Student Paper Award, Best Oral Presentation Award and Best Poster Award both will be announced at the closing ceremony

Let me, on behalf of the conference committee; cordially invite you to this outstanding conference. We look forward to receiving your paper in either research or development of acquired knowledge in order to disseminate to the wider audience. Join us at this event to see other excellent researchers share their work.

We wish you a successful conference and enjoyable visit in Chengdu!

AEEES 2021
Conference Organizing Committee
Chengdu, China

CONFERENCE COMMITTEES

组委会



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CONFERENCE AGENDA 大会日程



MAR. 24

Online participants Testing 线上参会人员测试

09:30-17:00

S9-S25+ Online Best student paper candidates + Online keynote speakers
全体分会 9-分会 25 作者+线上最优学生论文候选者+线上报告嘉宾

MAR. 26

Venue: Hotel Lobby

地点: 酒店大厅

Onsite Registration 线下签到

10:00-17:00

Collecting conference materials for onsite participants
线下参会人员领取资料

MAR. 27 MORNING

Venue: Banquet Hall C

地点: 宴会厅 C

Meeting Room ID: 966 5429 8645

线上参会房间: 966 5429 8645

Conference Opening and Onsite Keynote speeches 大会开幕以及线下主旨报告

Chair

Prof. Weihao Hu, UESTC, China

09:00-09:05	Opening Remarks Prof Qi Huang, Chengdu University of Technology, China (Vice President of CDUT)
09:05-09:50	Keynote Speaker I Prof. Jinjun Liu, IEEE Fellow, Xi'an Jiaotong University, China Topic: Autonomous Control for Coordination of Parallel Energy Source Converters
09:50-10:35	Keynote Speaker II Prof. Fujin Deng, Southeast University, China Topic: Key Technology of Modular Multilevel Converters
10:35-11:15	Coffee Break and Group Photo
11:15-12:00	Keynote Speaker III
12:00-13:30	Lunch



CONFERENCE AGENDA

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

MAR. 27 AFTERNOON

Venue: Meeting room 203+205

地点: 会议室 203+205

Meeting Room ID: 966 5429 8645

Meeting Room 121: 900 0 127 00 10

Online Keynote speeches 线上主旨报告		
Chair:		
13:30-14:15	Keynote Speaker IV Prof. Atsuo Kawamura, IEEE Fellow, Yokohama National University, Japan Topic: Trend of Very High Efficient DC-DC and DC-AC Power Conversion	
14:15-15:00	Keynote Speaker V Prof. Nikos Hatziaargyriou, IEEE Fellow, National Technical University of Athens, Greece Topic:	
15:00-15:10	Online Group Photo	
15:10-15:55	Keynote Speaker VI Prof. Soteris Kalogirou, IEEE Fellow, Cyprus University of Technology, Cyprus Topic: Renewable Energy Systems: Current Status and Prospects	
15:55-16:10	Break	
Onsite Best Student Paper Competition 线下最优学生论文竞选		
	Meeting Room 203	Meeting Room 205
16:10-18:10	Best Student Paper Competition I	Best Student Paper Competition II
18:10-20:00	Dinner	

MAR. 28

Venue: Meeting room 203+205

地点: 会议室 203+205

Room B Meeting Room ID: 672 7282 0575 (for online)

Parallel Sessions 分会报告			
	Meeting Room 203	Meeting Room 205	Room B 672 7282 0575 (Online)
09:00-10:30	Session 1 The Electricity Market and the Utilization of Clean Energy	Session 2 Power System Load Forecasting and Control	Best Student Paper Competition III
10:30-10:45	Coffee Break		
10:45-12:00	Session 3 Self-Healing and Advanced Protections for Power	Session 4 Demand Response and Direct Load Control for Renewable Energy	Best Student Paper Competition III



CONFERENCE AGENDA

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

	Distribution Systems	Integration into Power Grid	
12:00-13:30	Lunch		
13:30-14:30	Poster Session @ Meeting room 203		
14:30-14:45	Break		
14:45-16:45	Session 5 Power System Simulation and Design	Session 6 Fault Location and System Maintenance	Session 9 Modern Power System Control and Operation
16:45-17:00	Coffee Break		
17:00-18:30	Session 7 Wind Power and Energy Storage Technology	Session 8 Photovoltaic Power Generation and Energy Engineering	
18:30-20:00	Dinner		

MAR. 29

Online Conference

线上会议

Online Parallel Sessions 线上分会报告				
	Room B 672 7282 0575	Room C 644 6585 8778	Room D 643 9745 8814	Room E 638 4089 9730
09:00-10:40	Session 10 Optimization, Control and Protection of Renewable Energy	Session 11 Electrical Equipment Design and Control	Session 12 Power Load Forecasting and Protection	Session 13 Electronic Signal Analysis and Processing
10:40-10:50	Break			
10:50-12:15	Session 14 Risk Assessment and Planning of Power Systems Integrated with High Penetration of Renewable Energies	Session 15 Smart Grid Optimization and Management	Session 16 Advanced Electric Vehicles and Drive Technology	Session 17 Power System and Reliability Analysis
12:00-13:30	Lunch			
13:30-15:30	Session 18 Fault Diagnosis and Maintenance	Session 19 Power and Energy Engineering	Session 20 Electricity Consumption and Market Strategy	Session 21 Intelligent Control and Management of Modern Power and Energy Systems
15:30-16:00	Break			
16:00-18:00	Session 22 Distribution Network Planning and Management	Session 23 Wind and Photovoltaic Power Generation	Session 24 High Voltage Transmission and Insulation Technology	Session 25 Electronics and Circuit System
18:10-18:30	Closing and Award 闭幕式暨颁奖仪式			

TEST DAY ARRANGEMENT

线上测试安排



MAR. 24, 2021 WEDNESDAY
ONLINE TEST DAY

Arrangement for online participants test 线上参会者功能测试安排		
	Room A 966 5429 8645	Room B 672 7282 0575
09:30-10:30	Best Student Paper candidates+ Session 9+session10	Session 11+session12+Session 13
10:30-11:00	Break	
11:00-12:00	Session 14+session15+Session 16	Session 17+session18+Session 19
12:00-14:00	Lunch	
14:00-15:00	Session 20+session21+Session 22	Session 23+session 24+Session 25
15:00-15:30	Break	
Keynote Speaker Test 线上参会专家测试 Room A: 966 5429 8645		
15:30-16:30	<ul style="list-style-type: none">● Prof. Atsuo Kawamura, Yokohama National University, Japan (15:30-15:45)● Prof. Nikos Hatzargyriou, National Technical University of Athens, Greece (15:45-16:00)● Prof. Nikos Hatzargyriou, National Technical University of Athens, Greece (16:00-16:15)	
Note: 1.Please join the test session on time 2.First find your session and join the test room without sign in 3.Please send the message to conference secretary if you really have something emergency, we will arrange your test at other time		

TEST DAY ARRANGEMENT

线上测试安排



Conference Venue



成都大鼎世纪大酒店
DADING CENTURY PLAZA HOTEL

Dading Century Plaza Hotel

成都大鼎世纪大酒店

Add: NO.298 Tianren South Street , Chengdu , China

中国成都市天仁南街 298 号



How to get there?



From the Airport

从机场出发

- **Taxi: about 17 minutes directly to the venue**
出租车: 大约 17 分钟左右
- **Public Transportation: Chengdu Metro Line 10 to Taipingyuan Station and transfer to Chengdu Metro Line 7 to Chengdu South Railway Station (H5 Exit)**
地铁线: 地铁 10 号线 (太平园站转) ➡ 地铁 7 号线 (火车南站 H5 口出)

From Chengdu East train station:

从成都东站出发

- **Taxi: about 15 minutes directly to the venue**
出租车: 大约 15 分钟左右
- **Public Transportation: Metro Line 7 to Chengdu South Railway Station (H5 Exit)**
地铁线: 成都地铁 7 号线到火车南站 H5 口出

TEST DAY ARRANGEMENT

线上测试安排



From Chengdu South train station:

从成都南站出发

- Walk about 8mins(580 meters)

步行 580 米，约 8 分钟



Time

UTC/GMT+8



Weather

The Weather Situation of Chengdu in March

Average daily minimum temperature

11°C

Average daily highest temperature

20°C



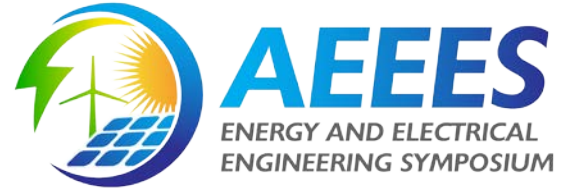
Emergency

Hospital Emergency phone: 999

Fire Service: 119

Emergency Call: 110

ONSITE PRESENTATION GUIDELINE 线下报告说明



Oral Presentations

- **Timing:** a maximum of 15 minutes total, including speaking time and discussion. Please make sure your presentation is well timed. Please keep in mind that the program is full and that the speaker after you would like their allocated time available to them.
- You can use CD or USB flash drive (memory stick), make sure you scanned viruses in your own computer. Each speaker is required to meet her / his session chair in the corresponding session rooms 10 minutes before the session starts and copy the slide file (PPT or PDF) to the computer.
- It is suggested that you email a copy of your presentation to your personal in box as a backup. If for some reason the files can't be accessed from your flash drive, you will be able to download them to the computer from your email.
- Please note that each session room will be equipped with a LCD projector, screen, point device, microphone, and a laptop with general presentation software such as Microsoft Power Point and Adobe Reader. Please make sure that your files are compatible and readable with our operation system by using commonly used fronts and symbols. If you plan to use your own computer, please try the connection and make sure it works before your presentation.
- **Movies:** If your Power Point files contain movies please make sure that they are well formatted and connected to the main files.

Poster Presentations

- Maximum poster size is 60cm wide by 80cm high
- Posters are required to be condensed and attractive. The characters should be large enough so that they are visible from 1 meter apart.
- Please note that during your poster session, the author should stay by your poster paper to explain and discuss your paper with visiting delegates.

Dress code

Please wearing formal clothes or national characteristics of clothing

ZOOM USAGE

ZOOM 的使用方法



Network

- ✧ Stable WIFI or Wired network.
- ✧ Equipment be with enough battery or connected with chargers.
- ✧ If your network is not good, please send us presentation videos within 10 Minutes as a back-up.



Time Zone

- ✧ The conference is arranged based on **Beijing Time (UTC+8)**.
- ✧ Please carefully check your presentation time, and join the conference **15 minutes in advance**.



Presentation

- ✧ **Stay online** during Keynote & Invited speeches and your own sessions.
- ✧ **English** only during the conference.
- ✧ **Certificates & receipts** will be emailed to you after the conference



zoom ZOOM Usage

- ✧ Download the **APP ZOOM** on zoom.us or www.zoom.com.cn (**China only**). Turn on your Audio and start your Video. Use headsets/Earphones to enhance the audio effect and avoid the speaker echo or howling. Stay in a quite place without noise.
- ✧ Authors, please rename like **Session Number+Paper ID+Name** as you join the room. E.g.: **S1+E1001+Ashily**.
- ✧ For KN or SC, please rename like KN/SC+ Name
- ✧ Join **TEST DAY** on **March 24**

KEYNOTE SPEAKERS I 大会嘉宾



Date: March 27 Morning
Speech Time: 09:05-09:50
Onsite Venue: Banquet Hall C
Meeting room ID:

Prof. Jinjun Liu
IEEE Fellow

Xi'an Jiaotong University, China

Speech Title: Autonomous Control for
Coordination of Parallel Energy Source
Converters



Biography: Jinjun Liu received a B.S. degree in industrial automation and a Ph.D. degree in electrical engineering from Xi'an Jiaotong University (XJTU), Xi'an, China, in 1992 and 1997, respectively. He then joined the XJTU Electrical Engineering School as a faculty. From late 1999 to early 2002, he was with the Center for Power Electronics Systems, Virginia Polytechnic Institute and State University, USA, as a Visiting Scholar. In late 2002, he was promoted to a Full Professor and then the Head of the Power Electronics and Renewable Energy Center at XJTU, which now comprises 21 faculty members and over 150 graduate students and carries one of the leading power electronics programs in China. From 2005 to early 2010, he served as an Associate Dean of Electrical Engineering School at XJTU, and from 2009 to early 2015, the Dean for Undergraduate Education of XJTU. He is currently a XJTU Distinguished Professor of Power Electronics. He coauthored 3 books (including one textbook), published over 400 technical papers in peer-reviewed journals and conference proceedings, holds over 50 invention patents (China/US/Europe), and delivered for many times plenary keynote speeches and tutorials at IEEE conferences or China national conferences in power electronics area. His research interests include modeling, control, and design methods for power converters and electrified power systems, power quality control and utility applications of power electronics, and micro-grids for sustainable energy and distributed generation.

Dr. Liu received for eight times governmental awards at national level or provincial/ministerial level for scientific research/teaching achievements. He also received the 2006 Delta Scholar Award, the 2014 Chang Jiang Scholar Award, the 2014 Outstanding Sci-Tech Worker of the Nation Award, the 2016 State Council Special Subsidy Award, and the IEEE Transactions on Power Electronics 2016 Prize Paper Award. He served for the IEEE Power Electronics Society as 2015-2019 Executive Vice President and 2020-2021 Vice President for membership, and was elevated to IEEE Fellow in 2018. He is on the Board of China Electrotechnical Society (CES) and a member of DC Transmission and Power Electronics Committee of Chinese Society for Electrical Engineering (CSEE), and was elected the Vice President in 2013 and the Secretary General in 2018 of the CES Power Electronics Society. Since 2013, he has been the Vice President for International Affairs, China Power Supply Society (CPSS) and since 2016, the inaugural Editor-in-Chief of CPSS Transactions on Power Electronics and Applications. Since 2013, he has been serving as the Vice Chair of the Chinese National Steering Committee for College Electric Power Engineering Programs

Abstract: Jinjun Liu received a B.S. degree in industrial automation and a Ph.D. degree in electrical engineering from Xi'an Jiaotong University (XJTU), Xi'an, China, in 1992 and 1997, respectively. He then joined the XJTU Electrical Engineering School as a faculty. From late 1999 to early 2002, he was with the Center for Power Electronics Systems, Virginia Polytechnic Institute and State University, USA, as a Visiting Scholar. In late 2002, he was promoted to a Full Professor and then the Head of the Power Electronics and Renewable Energy Center at XJTU, which now comprises 21 faculty members and over 150 graduate students and carries one of the leading power electronics programs in China. From 2005 to early 2010, he served as an Associate Dean of Electrical Engineering School at XJTU, and from 2009 to early 2015, the Dean for Undergraduate Education of XJTU. He is currently a XJTU Distinguished Professor of Power Electronics. He coauthored 3 books (including one textbook), published over 400 technical papers in peer-reviewed journals and conference proceedings, holds over 50 invention patents (China/US/Europe), and delivered for many times plenary keynote speeches and tutorials at IEEE conferences or China national conferences in power electronics area. His research interests include modeling, control, and design methods for power converters and electrified power systems, power quality control and utility applications of power electronics, and micro-grids for sustainable energy and distributed generation.

Dr. Liu received for eight times governmental awards at national level or provincial/ministerial level for scientific research/teaching achievements. He also received the 2006 Delta Scholar Award, the 2014 Chang Jiang Scholar Award, the 2014 Outstanding Sci-Tech Worker of the Nation Award, the 2016 State Council Special Subsidy Award, and the IEEE Transactions on Power Electronics 2016 Prize Paper Award. He served for the IEEE Power Electronics Society as 2015-2019 Executive Vice President and 2020-2021 Vice President for membership, and was elevated to IEEE Fellow in 2018. He is on the Board of China Electrotechnical Society (CES) and a member of DC Transmission and Power Electronics Committee of Chinese Society for Electrical Engineering (CSEE), and was elected the Vice President in 2013 and the Secretary General in 2018 of the CES Power Electronics Society. Since 2013, he has been the Vice President for International Affairs, China Power Supply Society (CPSS) and since 2016, the inaugural Editor-in-Chief of CPSS Transactions on Power Electronics and Applications. Since 2013, he has been serving as the Vice Chair of the Chinese National Steering Committee for College Electric Power Engineering Programs

KEYNOTE SPEAKERS II 大会嘉宾



Date: March 27 Morning
Speech Time: 09:50-10:35
Onsite Venue: Banquet Hall C
Meeting room ID:



Prof. Fujin Deng
Southeast University, China
Speech Title: Key Technology of Modular
Multilevel Converters

Biography: Fujin Deng is a Ph. D, Chief Youth Professor of Southeast University, IEEE Senior Member and Head of Department of Power Electronics. He pursued his Ph. D degree in Aalborg University, Aalborg, Denmark from 2009 to 2012. From 2012 to June, 2015, he was a postdoctoral researcher in the Department of Energy Technology, Aalborg University, Aalborg, Denmark, where he was an assistant Professor from July, 2015 to April, 2017. He joined the School of Electrical Engineering, Southeast University in 2017. He hosts ten projects such as National Natural Science Foundation of China, Jiangsu Province Double Talents Project, Jiangsu Province Six Talents High-level Project, Jiangsu Natural Science Foundation and other projects. He has published more than one hundred academic papers, and applied for more than thirty invention patents. His main research interests include wind power generation, high-voltage direct-current technology, modular multilevel converters and DC grid.

Abstract: With the development of power electronic technology, the modular multilevel converter (MMC) has become the core technology of medium/high-voltage, large-capacity power electronic converters with its highly modular structure. With the advantages of expansion, low harmonic content, redundant design, the MMC has been widely used in high-voltage DC transmission, motor drive, rail transit, energy storage, etc. This report discusses the key technology of MMC, including capacitor voltage control, fault diagnosis and fault tolerant control, etc.

KEYNOTE SPEAKERS III 大会嘉宾



Date: March 27 Morning
Speech Time: 11:15-12:00
Onsite Venue: Banquet Hall C
Meeting room ID:

KEYNOTE SPEAKERS IV 大会嘉宾



Date: March 27 Afternoon
Speech Time: 13:30-14:15
Meeting room ID:



Prof. Atsuo Kawamura

IEEE Fellow

Yokohama National University, Japan

Speech Title: Trend of Very High Efficient DC-
DC and DC-AC Power Conversion

Biography: Atsuo Kawamura received the B.S.E.E., M.S.E.E., and Ph.D. degrees in electrical engineering from the University of Tokyo, Tokyo, Japan, in 1976, 1978, and 1981, respectively. In 1981 he joined the Department of Electrical and Computer Engineering at the University of Missouri-Columbia as a Postdoctoral Fellow, and was an Assistant Professor there from 1983 through 1986. He joined the Department of Electrical and Computer Engineering at Yokohama National University in 1986 as an associate professor, and became a professor in 1996. He was a dean of College of Engineering between 2013 and 2015. He has served to completion 31 Ph.D and 117 Master's students. He holds 7 patents and has published more than 110 journal papers, 250 international conference papers, 500 domestic conference papers and 5 books.

His interests are mainly in power electronics, digital control, electric vehicles, robotics, and traction control. He received the IEEE IAS Transaction Prize Paper Award in 1988, and the Prize Paper Award of IEE of Japan in 1996, and the IEEE Industrial Electronics Transactions best paper award in 2001 and 2002. Dr. Kawamura became a Fellow of the IEEE in 2002 with the citation, "For Contributions to Real-Time Digital Feedback Control of PWM Inverters."

He was the conference chairperson of the IEEE/IAS and IEEJ/IAS joint Power Conversion Conference (PCC-Yokohama) in 1993. He was an associate editor of IEEE Power Electronics Transactions from 1995 to 2000. He was the program chairman of the 2009 Robotics Society of Japan Annual Meeting, and also the general chairman of International Power Electronics Conference (IPEC2010). He served as president of the Institute of Electrical Engineers of Japan/ Industry Application Society (IEEJ/IAS) from 2012-2013. Dr. Kawamura is a fellow of the IEE of Japan, and a member of Robotics Society of Japan.

Abstract: Extremely high electric power conversion efficiency over 99.5 % has been challenged by the author's group and several results including literature survey will be introduced in this invited talk.

First in the field of DC-DC power conversion, a trend of high efficient power conversion over 99.5 % is summarized including speaker's group research. A new concept of a partial boost circuit for DC-DC converter was introduced and over 99.71% efficiency was verified at the power 100 kW power using 3.3 kV SiC devices. This topology is named to be HEECS chopper by author's group. This approach seems one of the promising among others in special applications.

Second a literature survey of high efficiency DC-AC conversion over 99.5% will be summarized including the speaker's approach. The concept of DC-DC high efficiency approach was extended to the partial power conversion principle of DC-AC. Aiming only at a very high efficiency and discarding the high power density, 99.71% efficiency around 2 kW power range was experimentally measured using a circuit topology of combination of a HEECS chopper and an unfolding inverter with SiC devices. Loss analysis of this type of power conversion will be presented from the view point of further loss reduction, including several kinds of loss measurement for system and individual component loss measurement. Also the accuracy of several measurement methods will be discussed

Finally applications of these power conversion techniques will be added if time is available.

KEYNOTE SPEAKERS VI 大会嘉宾



Date: March 27 Afternoon
Speech Time: 14:15-15:00
Meeting room ID:

Prof. Nikos Hatziargyriou
IEEE Fellow
National Technical University of Athens,
Greece

Speech Title:



Biography: Nikolaos Hatziargyriou received the Diploma in Electrical and Mechanical Engineering from National Technical University of Athens in 1976 and the MSC and PhD degrees from UMIST, Manchester, UK in 1979 and 1982, respectively. Since 1984 he is with the Power Division of the Electrical and Computer Engineering Department of NTUA and since 1995 he is full professor in Power Systems. Since April 2015 he is Chairman and CEO of the Hellenic Distribution Network Operator (DEDDIE). From February 2007 to September 2012, he was Deputy CEO of the Public Power Corporation (PPC) of Greece, responsible for Transmission and Distribution Networks, island DNO and the Center of Testing, Research and Prototyping. He is Fellow Member of IEEE, past Chair of the Power System Dynamic Performance Committee, Honorary member of CIGRE and past Chair of CIGRE SC C6 "Distribution Systems and Distributed Generation". He is co-chair of the EU Technology and Innovation Platform on Smart Networks for Energy Transition. He is member of the Energy Committee of the Athens Academy of Science. He has participated in more than 60 R&DD Projects funded by the EC and the industry and has coordinated among others, "CARE", "MORE CARE", "MERGE", "Microgrids" and "More Microgrids". He is Editor in Chief of the IEEE Transactions on Power Systems and member of the Editorial Board of IEEE Transactions on Sustainable Development and the IEEE Power and Energy magazine. He is author of the book "Microgrids: Architectures and Control" and of more than 200 journal publications and 500 conference proceedings papers. He is included in the 2016 Thomson Reuters' list of the top 1% most cited researchers. H-index 78. Getting more: <https://www.ece.ntua.gr/en/staff/41>

Abstract: Extremely high electric power conversion efficiency over 99.5 % has been challenged by the author's group and several results including literature survey will be introduced in this invited talk.

First in the field of DC-DC power conversion, a trend of high efficient power conversion over 99.5 % is summarized including speaker's group research. A new concept of a partial boost circuit for DC-DC converter was introduced and over 99.71% efficiency was verified at the power 100 kW power using 3.3 kV SiC devices. This topology is named to be HEECS chopper by author's group. This approach seems one of the promising among others in special applications.

Second a literature survey of high efficiency DC-AC conversion over 99.5% will be summarized including the speaker's approach. The concept of DC-DC high efficiency approach was extended to the partial power conversion principle of DC-AC. Aiming only at a very high efficiency and discarding the high power density, 99.71% efficiency around 2 kW power range was experimentally measured using a circuit topology of combination of a HEECS chopper and an unfolding inverter with SiC devices. Loss analysis of this type of power conversion will be presented from the view point of further loss reduction, including several kinds of loss measurement for system and individual component loss measurement. Also the accuracy of several measurement methods will be discussed

Finally applications of these power conversion techniques will be added if time is available

KEYNOTE SPEAKERS VI 大会嘉宾



Date: March 27 Afternoon
Speech Time: 15:10-15:55
Meeting room ID:



Prof. Soteris Kalogirou
IEEE Fellow

Cyprus University of Technology, Cyprus

Speech Title: Renewable Energy Systems:
Current Status and Prospects

Biography: Soteris Kalogirou is at the Department of Mechanical Engineering and Materials Sciences and Engineering of the Cyprus University of Technology, Limassol, Cyprus. He is currently the Dean of the School of Engineering and Technology. In 2011 he received from the University of Glamorgan the title of D.Sc. He is a Fellow of the European Academy of Sciences and Founding Member of the Cyprus Academy of Sciences, Letters and Arts.

For more than 35 years, he is actively involved in research in the area of solar energy and particularly in flat plate and concentrating collectors, solar water heating, solar steam generating systems, desalination and absorption cooling.

He has a large number of publications as books, book chapters, international scientific journals and refereed conference proceedings. He is Editor-in-Chief of Renewable Energy and Deputy Editor-in-Chief of Energy, and Editorial Board Member of another seventeen journals. He is the editor of the book Artificial Intelligence in Energy and Renewable Energy Systems, published by Nova Science Inc., co-editor of the book Soft Computing in Green and Renewable Energy Systems, published by Springer, editor of the book McEvoy's Handbook of Photovoltaics, published by Academic Press of Elsevier and author of the books Solar Energy Engineering: Processes and Systems, and Thermal Solar Desalination: Methods and Systems, published by Academic Press of Elsevier.

He has been a member of World Renewable Energy Network (WREN) since 1992 and is a member of the American Society of Heating Refrigeration and Air-conditioning Engineers (ASHRAE), Institute of Refrigeration (IoR) and International Solar Energy Society (ISES).

Abstract: This presentation examines the current status of renewables in the world. The presentation starts with some facts about the climate change, global warming and the effects of human activities such as the burning of fossil fuels on the climate problem. It then examines the current status of conventional resources of energy such as oil, coal and natural gas and their reserves based on current consumption and known resources, followed by a general outline of the status of renewables in the world, which includes the shares with respect to conventional fuel use for electricity and power and jobs created. Then the basic forms of renewables are examined in some detail, which include solar thermal, both for low and high temperature applications, photovoltaics, hydro power, onshore and offshore wind energy systems and biomass/biofuels. In all these the basic technology is presented followed by the current status as well as the prospects of the technology and new research findings. Finally, some basic facts about the Renewable Energy Journal in which the speaker is the Editor in Chief are presented.

BEST STUDENT PAPER COMPETITION

优秀学生论文竞选



Date: March 27 Afternoon
Speech Time: 16:10-18:10
Venue: Meeting room 203

Best Student Paper Competition I 优秀学生论文竞选 I

Note:

- * The certification of oral presentations will be awarded after each presentation.
- * Each Presenter need to do the oral presentation within 20 minutes
- * The winner will be announced and awarded at the closing ceremony
- * Session Photo will be taken at the end of the session.

Chair:

16:10-16:30	E1131	Adaptive Coordinated Control of Microgrid under Communication Interruption Scenario Ms. Wen Li , Xiaobo Tang, Zhongyu Shen Nanjing Normal University, China
16:30-16:50	E1037	Bridgeless Step-Down PFC Converter Based on Dual-Resonant Switched-Capacitor Structure with Continuous Conversion Ratio Mr. Yubo Han , Yunfeng Wu, Zhangyong Chen, Xiangyu Liu, Zhengdong Lu, Changhua Zhang University of Electronic Science and Technology of China, China
16:50-17:10	E1083	Multi-objective Routing Optimization for Electric Power Communication Network Considering Business Importance Mr. Zhifeng Du , Jian Chen, Yicheng Zhang, Xinyi Jiang, Da Lin Shandong University, China
17:10-17:30	E1102	Low Frequency Oscillation Analysis of VSG Grid-Connected System Mr. Guangyu Wang , Lijun Fu, Qi Hu, Fan Ma, Ruiyang Liuchen, Yunfeng Lin Naval University of Engineering, China
17:30-17:50	E13005	Research on Charging and discharging Strategies of Regenerative Braking Energy Recovery System for Metro Flywheel Mr. Xiaochen Qu , Lijun Tian, Jie Li, Chuang Lou, Tao Jiang Shandong University, China
17:50-18:10	E1012	Learning Voltage Stability with Missing Data Using Phasor Measurements Mr. Haosen Yang , Robert Qiu, Yingqi Liang, Xing He, Qian Ai Shanghai Jiaotong University, China

BEST STUDENT PAPER COMPETITION

优秀学生论文竞选



Date: March 27 Afternoon
Speech Time: 16:10-18:10
Venue: Meeting room 205

Best Student Paper Competition II 优秀学生论文竞选 II

Note:

- * The certification of oral presentations will be awarded after each presentation.
- * Each Presenter need to do the oral presentation within 20 minutes
- * The winner will be announced and awarded at the closing ceremony
- * Session Photo will be taken at the end of the session.

Chair:

16:10-16:30	E1064	An Equivalent Method of Distributed Generation Based on Discharge Behavior of Large-scale Electric Vehicles Mr. Siyang Hu, Jianwei Yang, Kai Liao, Bo Li, Zhengyou He Southwest Jiaotong University, China
16:30-16:50	E1071	Optimal operation of multi-energy complementary microgrid with cooling, thermal and electricity load Ms. Lingling Tan, Panbao Wang, Wei Wang, Dianguo Xu Harbin Institute of Technology, China
16:50-17:10	E1094	Traveling Wave Fault Location and Protection Tester for DC Lines Mr. Haoyu Hu, Shaoming Zheng, Yimin Liu, Huimin Yang, Peng Dong, Shenxing Shi, Xinzhou Dong Tsinghua University, China
17:10-17:30	E1110	Electricity Market Bidding Strategy for Combined Heat and Power Unit Considering Cooperation of Heat Demand Control Mr. Mui Tang, Yi Luo, Weiye Zhu, Yue Han, Bo Hu, Huanhuan Luo Huazhong University of Science and Technology, China
17:30-17:50	E1136	Modeling and Simulation of A New Double Full-Bridge ZVZCS Converter for Beam Supply Mr. Huaijiang Wang, Di Li, Yunfan Huang, Haiying Dong Lanzhou Jiaotong University, China
17:50-18:10	E1137	SOC dynamic balance strategy based on adaptive droop control with variable regulating factor Mr. Lichen Zhang, Teng Li Beijing Jiaotong University, China

BEST STUDENT PAPER COMPETITION

优秀学生论文竞选



Date: March 28 Morning
Speech Time: 09:00-12:00
Meeting Zoom ID: 672 7282 0575

Online Best Student Paper Competition III 线上优秀学生论文竞选 III

Note:

- * The certification of oral presentations will be awarded after the conference by Email.
- * Each Presenter need to do the online oral presentation within 20 minutes
- * The winner will be announced and awarded at the closing ceremony
- * Session Photo will be taken at the end of the session.

Chair:

09:00-09:20	E1030	Design of Draw-out Power Supply for On-line Monitoring System of Three-core Power Cables Mr.Yunpeng Di , Yincheng Gao, Yanchao Wang, Penglei Xu Xi'an Jiaotong University, China
09:20-09:40	E1054	Low Voltage Ride Through Control Strategy Considering Transient Overvoltage in Wind Power HVDC Transmission System Ms. Yaling Zhang , Churan Dong, Qihui Liu North China Electric Power University, China
09:40-10:00	E1068	Electricity Market Bidding Strategy for Combined Heat and Power Unit Considering Cooperation of Heat Demand Control Mr. Zhiyuan Ma , Xianqiang Li, Ji Tian, Chen Wei, Wenchuang Zhou, Ao Wang Wuhan University of Technology, China
10:00-10:20	E1065	A real-time compression method of power system waveform data based on 2-D lifting wavelet transform and Deflate algorithm Mr.Hongwei Ding , Hao Liu, Fangqi Yang North China Electric Power University, China
10:20-10:40	E1086	Cambodia Mid-Term Transmission System Load Forecasting with the combination of Seasonal ARIMA and Gaussian Process Regression Mr. Phornnara Nop , Zhijun Qin Guangxi University, China
10:40-10:50	Break	



BEST STUDENT PAPER COMPETITION

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

10:50-11:10	E1214	<p>Asynchronous Advantage Actor-Critic Based Approach for Economic Optimization in the Integrated Energy System with Energy Hub</p> <p>Dr. Bin Zhang, Weihao Hu, Di Cao, Qi Huang, Zhe Chen University of Electronic Science and Technology of China, China</p>
11:10-11:30	E1128	<p>Multi-regions bundled planning of wind farm, thermal, energy storage with renewable energy consumption</p> <p>Dr. Su Ma, Lu Liu, Heng Zhang, Haozhong Cheng, Xiaohu Zhang, Jianzhong Lu Shanghai Jiaotong University, China</p>
11:30-11:50	E1154	<p>Modeling and HIL Test of a D-PMSG Connected to Power System with Damping Control for Real Time Studies</p> <p>Dr. Jue Hou, Zhou Liu, Shaorong Wang, Zhe Chen Huazhong University of Science and Technology, China</p>
11:50-12:10	E1106	<p>Economic Analysis of User-side Electrochemical Energy Storage Considering Time-of-use Electricity Price</p> <p>Ms. Binhua Dai, Lin Ye, Yilin Li, Caixia Wang, Zhiyong Shi, Qionghui Li China Agricultural University, China</p>

PRESENTATION AT A GLANCE

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PRESENTATION AT A GLANCE

报告速览



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ONSITE ORAL PRESENTATION

线下口头报告



ONSITE ORAL PRESENTATION TIPS

线下口头报告须知

- * The certification of oral presentations will be awarded at the end of the sessions.
- * Each Presenter need to do the oral presentation within 15 minutes
- * The winner will be announced and awarded at the closing ceremony
- * Session Photo will be taken at the end of the session.

Session 1 -The Electricity Market and the Utilization of Clean Energy

主题分会 1-电力市场与清洁能源利用

Mar. 28th 09:00-10:30 | Venue: Meeting room 203

Chair: Zhi Cai, China Electric Power Research Institute, China

09:00-09:15	E1176	Market Clearing with Participation of Cascade Hydropower Stations Based on Variable Dimension Reduction Assoc. Prof. Zhi Cai , Chuancheng Zhang, Chi Zhang, Yi Sun, Guofang Zhang, Dawei Zhang China Electric Power Research Institute, China
09:15-09:30	E1010	Real-time Estimation of Distributed 380V/220V Photovoltaics Based on Deep Learning Lei Guo, Jun Guo, Yong Zhang, Le Yu, Zhitong Guo, Zhuping Liu, Mr. Bin Feng , Chuangxin Guo Zhejiang University, China
09:30-09:45	E1108	The Mechanism of Virtual Power Plant Participating in the Peak Regulation Auxiliary Service Market Yong Cui, Fei Xiao, Weihong Wang, Ms. Zirun Sun , Qian Ai, Minjie Jin and Yue Yu Shanghai Jiao Tong university, China
09:45-10:00	E1011	Short-term EV Charging Load Forecasting Based on GA-GRU Model Lei Guo, Peiran Shi, Yong Zhang, Zhengfeng Cao, Zhuping Liu, Mr. Bin Feng Zhejiang University, China
10:00-10:15	E1207	Electricity value-added service business model under energy Internet Siyin Wang, Xu Zhou, Xiangnan Meng, Prof. Yan Yan , Juan Su China Agricultural University, China
10:15-10:30	E1130	Optimal Planning and Operation of Typical Rural Integrated Energy Systems Based on Five-level Energy Hub

ONSITE ORAL PRESENTATION

线下口头报告



		Mr. Xubin Wang , Peng Li; Jun Zhang; Yongle Zheng; Huixuan Li; Wenmin Hu State Grid Energy Research Institute Co., Ltd, China
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Session 2 -Power System Load Forecasting and Control 主题分会 2-电力系统负荷预测与控制 Mar. 28 th 09:00-10:30 Venue: Meeting room 205 Chair: Bowen Zhou, Northeastern University, China		
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09:00-09:15	E1044	Composite Load Equivalent Modeling of Traction Power Supply System Ms. Chunjing Lu , Xinran Li, Shulin Chen Hunan University, China
09:15-09:30	E1105	An Optimal Scheduling Strategy of Spinning Reserve Considering Coordination Between Source and Load for Power System Mr. Zhaoguo Yu , Ziqiu Song, Yang Hu, Hanyu Feng North China Electric Power University, China
09:30-09:45	E1162	Inverse time zero sequence protection based on traveling wave startup information Mr. Zeyu Xin , Haozong Wang, Xinzhou Dong, Xuan Ren Tsinghua University, China
09:45-10:00	E1111	Analysis of the Influence of Large-Scale Integration of Centralized Energy Storage into the Power Grid on Voltage Security and Stability of Power System Baomin Fang, Ms. Xiaoyu Ren , Weifang Lin, Hongzhi Li, Guoqing He, Wei Zhou North China Electric Power University, China
10:00-10:15	E1021	Regional Wind Power Forecasting Based on Hierarchical Clustering and Upscaling Method Mr. Ke Wang , Yao Zhang, Fan Lin, Yang Xu Xi'an Jiaotong University, China
10:15-10:30	E1127	A Fuzzy-Based Evaluation Approach for Metering Schemes of Medium-Low Voltage DC Distribution Network Mr. Wei Liu , Qun Jiang, Chaoliang Wang, Zhewei Zhang, Jinghan Zhao, Miao Yu State Grid Zhejiang Marketing Service Center, China



ONSITE ORAL SESSION

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

Session 3 -Self-Healing and Advanced Protections for Power Distribution Systems

主题分会 3- 配电系统的自愈和先进保护

Mar. 28th 10:45-12:00 | Venue: Meeting room 203

Chair:

10:45-11:00	E1076	WLS state estimation method of distribution network topology partition based on Phase Measurement Unit Shenghe Wang, Weidong Kang, Wenzhi Han, Wenping Li, Xiaolong Tang, Dr. Kunpeng Li Anhui Nanrui Jiyuan Electric Power System Technology Co., Ltd, China
11:00-11:15	E1144	Design of 10kV Dry Transformer Monitoring and Control System Ms. Xiaoyu Chen , Yao Yao, Tao Guan, Yangjue Huang, Wenhui Liu, Chunyao Lin Electric Power Research Institute of Guangdong Power Grid Co. Ltd. China
11:15-11:30	E1057	Line protection setting and configuration scheme for cascaded multi-terminal UHVDC transmission system Liangliang Hao, Ms. Chang Liu , Zhengguang Chen, Xingguo Wang Beijing Jiaotong University, China
11:30-11:45	E1147	Discussion on Application Research of Preparing Natural Ester Insulating Oil with Drain Oil Jinfeng Wang, Ms. Yao Yao , Yang Jin, Peng Chen, Yuemei Zhou, Yangjue Huang, Mingbang Guo Electric Power Research Institute of Guangdong Power Grid Co. Ltd.
11:45-12:00	E1216	Research on Short-Circuit Force of Distribution Transformer Based on Short-Circuit Test by Single-Phase Power and Three-phase Power Mr. Xiaoxiao Luo , Qianbo Xiao, Qian Wang, Wenyan Gan, Baojia Deng State Grid Chongqing Electric Power Research Institute, China

Session 4 -Demand Response and Direct Load Control for Renewable Energy Integration into Power Grid

主题分会 4- 高比例新能源电力系统的需求响应和直接负荷控制技术

Mar. 28th 10:45-12:00 | Venue: Meeting room 205

Chair:

10:45-11:00	E1224	Power-Voltage Coupling Characteristic Analysis of Power Grid Integrated with Distributed Energy Resources Ms. Jingjing Wang , Liangzhong Yao, Wei Cui, Zhenan Zhang, Fangbing Liu Peng Xu,
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ONSITE ORAL SESSION

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Beilin Mao, Zhang Wen Wuhan University, China
11:00-11:15	E1006	AC/DC Hybrid Renewable Energy System Coordinated Control and Test Platform Wei Deng, Wei Pei, Ningning Li, Guowei Zhang, Mr. Li Ding , Li Kong Electric Power Research Institute of Guangdong Power Grid Co. Ltd. China
11:15-11:30	E1194	A Multi-dimensional Status Evaluation System of Battery Energy Storage for Efficient Operation and Maintenance Decision-making Jinhui Zhou, Chao Chen, Liangzhong Yao, Deping Ke, Siyang Liao, Mr. Yunxin Liu . Wuhan University, China
11:30-11:45	E1157	Research on Capacity Optimization Configuration of Hybrid AC/DC Microgrid Based on Wind, Solar and Storage Mr. Hao Gao , Meiyi Hou, Tianliang Huyan, Aijun Yin, Zhengkun Cao, Guangliang Chen Shandong University, China.
11:45-12:00	E1045	Load Forecasting Method for Building Energy Systems Based On Modified Two-Layer LSTM Dr. Yeyan Xu , Liangzhong Yao, Wei Cui, Zhenan Zhang, Fangbing Liu, Peng Xu, Beilin Mao, Zhang Wen Wuhan University, China

Session 5 - Power System Simulation and Design

主题分会 5-电力系统仿真与设计

Mar. 28th 14:45-16:45 | Venue: Meeting room 203

Chair:

14:45-15:00	E1056	Hybrid H2 / H∞ Robust Decoupling Control of VSC-MTDC Haiying Dong, Mr. Weiwei Zou , Kaiqi Liu; Miaohong Su ;Xiping Ma. Lanzhou Jiaotong University, China
15:00-15:15	E1142	Identification of Key Transmission Lines Based on Super Efficiency Data Envelopment Analysis Model Lingxu Guo, Yuan Zeng, Cheng Yao, Xin Wang, Mr. Wenxu Zhang , Waiying Guo Tianjin University, China
15:15-15:30	E1175	Hydraulic Pressure Simulation of Disc Insulators Considering Bolt Preload Mr. Zhijun Wang , Jibin Zhu, Yapei Liu, Yongqi Yao, Hao Zhang, Yingqian Du PINGGAO GROUP CO., LTD., China
15:30-15:45	E1159	Research on comparison of fault current fitting methods for VSC-HVDC grids

		Ms. Wenxin Wang , Botong Li, Tao Liu, Chunbo Li, Bin Li, Weijie Wen Tianjin University, China
15:45-16:00	E1235	Analysis of a 1.5kW Induction Motor Through Electromagnetic and Thermal Simulations Dr. Chengliu Ai , Xian Cao, Haifeng Wang Chinese Academy of Sciences, China
16:00-16:15	E13020	Quantitative Design of Virtual Impedance for LVRT Strategy of VSG Liu Hang, Wang Yue, Liu Yonghui, Ms. Peng Yang , Shu Sirui, Liu Zengzhe Xi'an Jiaotong University, China
16:15-16:30	E1152	Optimal Design of PCB Layout Based on Thermal Analysis Using Taguchi Method Ms. Sun Wei , Li Ye, Zhang Shaokun, Shi Qibiao Chinese Academy of Sciences, China
16:30-16:45	E24001	Design of Intelligent IoT Sensing Module Based on Topology Recognition Zhi Zhang, Ms. Xi Zhao , Zhiru Chen, Liang Guo, Zhen Jin State Grid ShanDong Marketing service center(metrology center), China

Session 6 -Fault Location and System Maintenance

主题分会 6-故障定位与系统维护

Mar. 28th 14:45-16:45 | Venue: Meeting room 205

Chair:

14:45-15:00	E1018	Multi-Port Balancing Controller for Flexible Interconnection of Transformer District Wei Deng, Wei Pei, Mr. Li Ding , Guoju Zhang, Wenxiang Xue. Institute of Electrical Engineering of the Chinese Academy of Sciences, China
15:00-15:15	E1081	Simulation Analysis of Voltage Fluctuation at the Sending End of UHVDC System Caused by Commutation Failure Mr. Yukun Niu , Jun Wen, Shujie Wang, Limin Ma North China Electric Power University (Beijing), China
15:15-15:30	E1085	A Summary of the Latest Research Progress of Pulse Electroacoustic Method Mr. Hong Rao , Baorong Zhou, Fan Zhang, Yuan Xu, Chao Hong, Jian Yang. China Southern Power Grid, China
15:30-15:45	E1093	An Improved LMS harmonic current detection algorithm



ONSITE ORAL SESSION

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Yanbo Zhou, Wenquan Shao, Yuan Cheng, Xuexiang Yan Xi'an Polytechnic University, China
15:45-16:00	E1124	Recognition and reconstruction of photovoltaic output abnormal data based on geographic correlation Mr. Shiman Lin, Peiqiang Li, Wenqi Xue, Xuexian Tang, Jifei Wang Hunan University, China
16:00-16:15	E13001	Stability Analysis and Research of Compensation method for DC Microgrids Heng Xu, Yi Liu, Guojing Dong, Ms. Xiaoxin Sun Inner Mongolia Electric Power Group Co., Ltd., China
16:15-16:30	E1182	Research on Dynamic Characteristics of UHV DC Bypass Switch Drive System Yingqian Du, Yongqi Yao, Zhijun Wang, Yingjie Sun, Mingqin Guo, Yapei Liu, Hao Zhang PingGao Group, China
16:30-16:45	E1202	The Influence of Terrain on Propagation Loss of V2I Network in High Altitude Mountainous Area Mingmin Liu, Jiayong Liang, Huaifu Li, Yanmei Jing, Wenxue He Yunnan Normal University, China

Session 7 -Wind Power and Energy Storage Technology

主题分会 7-风力发电及储能技术

Mar. 28th 17:00-18:30 | Venue: Meeting room 203

Chair: Bowen Zhou, Northeastern University, China

17:00-17:15	E1042	Research on Optimal Rolling Scheduling with Over/Under-estimated Cost of Reserve Based on Chance Constrained Programming Liu Qi, Zhou Haiquan, Mr. Xiao Shiqu Xihua University, China
17:15-17:30	E1069	Research of CDKF Based on Spectral Decomposition of Symmetric Matrix in SOC Estimation of Lithium-ion Cell Mr. Yu Lei, Rui Li, Jialing Yu, Juan Liu, Yingchao Zhang, Fan Liu Army Engineering University of PLA, China
17:30-17:45	E1107	A Second-Order Harmonic Circulating Current Injection Method for Capacitance Reduction of MMCs in Offshore DC Wind Turbines Dr. Xiangjie Xie, Hui Li, Hongtao Tan, Tian Yang, Jie Zheng, Wei Yang. Chongqing University, China



ONSITE ORAL SESSION

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

17:45-18:00	E1158	A New Method for Optimal Dispatch Considering System Flexibility in Wind Farm Ms.Luyang Gou, Yiliang Li, Zheng Tong, Qian Li, Anan Zhang Southwest Petroleum University, China
18:00-18:15	E1005	Short-Term Voltage Stability Assessment of Multi-Infeed HVDC Systems Based on JMIM and XGBoost Linlin Yu, Wanxun Liu, Ruihua Si, Pengxiang Xing, Mr. Mingzeng Huang , Yunfeng Wen Hunan University, China
18:15-18:30	E1008	An Estimation Algorithm for Oscillation Frequency under Power Oscillations Xiaopeng Li, Xiangxi Duan, Fuchuan Hao, Ling Yu, Mr. Siyu Xiong , Jiuyuan Song, Ling Fu Southwest Jiaotong University, China

Session 8 -Photovoltaic Power Generation and Energy Engineering

主题分会 8-光伏发电与能源工程

Mar. 28th 17:00-18:30 | Venue: Meeting room 205

Chair:

17:00-17:15	E1148	Second-order Cone Relaxation based Optimization Method of Optimal Operation of Distribution Systems with Integrated Energy Fengzhang Luo, Mr. Zheng Jiao , Liangzhong Yao, Lingzhi Zhu, Dawei Zhao, Minhui Qian Key Laboratory of Smart Grid of Ministry of Education Tianjin University, China
17:15-17:30	E13004	The Method for Photovoltaic Module Temperature Short-term Forecasting Based on Numerical Weather Prediction Mr. Xu Cheng , Ji Wu, Deng-xuan Li, Xiang Zhu China Electric Power Research Institute, China
17:30-17:45	E13014	Prediction of Industrial Power Consumption and Air Pollutant Emission in Energy Internet Xin Wang, Dr. Xinmin Li , Dandan Qin, Yu Wang, Li Liu and Liang Zhao Southwest University of Science and Technology, China
17:45-18:00	E24002	Discussion on the Security Mechanism of Energy Internet in 5G network Mr. Hao Yao , Qi-ge Ye, Xiao-ling Yan, Dong-na Jiang, Zong-shun Tang Guangzhou Electric Power Design Institute Co.,Ltd, Guangzhou, China.
18:00-18:15	E1180	Electrolytic Aluminum Load Participating in Power Grid Frequency Modulation



ONSITE ORAL SESSION

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Method Based on Active Adjustable Capacity Coordination Lingfang Li, Yixuan Chen, Xinchun Zhu, Ms. Qingfang Yu , Xueyi Jiang, Siyang Liao Wuhan University, China
18:15-18:30	E13009	Reactive-Voltage Coordinated Control of Offshore Wind Farm Based on Deep Reinforcement Learning Dr.Hongtao Tan , Hui Li, Xiangjie Xie, Tian Yang, Jie Zheng, Wei Yang Chongqing University, China

ONSITE POSTER PRESENTATION

线下海报张贴报告



ONSITE POSTER PRESENTATION TIPS

线下海报展示须知

- * The certification of poster presentations will be awarded at the end of sessions.
- * Each Presenter need to put your poster at the specific place and show up at the session to answer the question if chairs asked
- * The winner will be announced and awarded at the closing ceremony
- * Session Photo will be taken at the end of the session.

Poster Session 海报展示

Mar. 28th 13:30-14:30 | Venue: Meeting room 203

Chair: Prof.

1	E1090	Review on the Design of Flexible DC System to Improve the Operation Performance of 220 kV Subdivision Power Grid Mr.Limin Ma, Jun Wen; Yukun Niu, Shujie Wang North China Electric Power University(Beijing), China
2	E1138	Distributed Control Strategy of Renewable Energy Clusters Considering the Uncertainty of Output Mr.Yue Han, Yi Luo, Minhui Qian Huazhong University of Science & Technology, China.
3	E1153	Simulation Analysis of 550 kV 80 kA SF6 Gas Circuit Breaker's Interrupting Capability in T100a Test Mr. Hao Zhang, Jianying Zhong, Jibin Zhu, Zhijun Wang, Yongqi Yao, Yapei Liu, Yingqian Du Pinggao Group Co., Ltd, China
4	E1190	A Mesh Analysis Model and the Coherent Evaluation Index System for Urban Distribution Network Planning Ms. Kaiyu Zhang, Ruijin Zhu, Ruochen Song, Fangdi Shi, Shanshan Shi, Chen Fang State Grid Shanghai Municipal Electric Power Company, China
5	E1222	Co-simulation and parameter sensitivity analysis of high voltage switch bus insulation and current flow Mr. Hao Zhang, Jibin Zhu, Zhijun Wang, Yongqi Yao, Yingqian Du, Yapei Liu

		Pinggao Group Co., Ltd, China
6	E1055	Research on IoT-based Operation Support System for Safety and Economic of Power Distribution Station Clusters Shizhan Song, Sen Li, Hui Gao, Mr. Yongzhi Yan , Zhenshu Wang, Wei Xu Shandong University, China
7	E1097	A universal MISCR based on network topology Mr. Shujie Wang , Jun Wen, Limin Ma, Yukun Niu North China Electric Power University(Beijing), China
8	E1080	Urban Distribution Network Planning Considering Block Loads Mr. Zhen Fang , Mingqiang Wang, Jianying Li, Zhixin Wang Shandong University, China
9	E1151	Line protection setting and configuration scheme for cascaded multi-terminal UHVDC transmission system Kaiyan WANG, Mr. Chengwen ZHOU , Rong JIA, Jiao WANG, Zhengmian WANG Xi'an University of Technology,School of Electrical Engineering, China
10	E1100	A Transmission & Generator Expansion Planning Model Considering Flexibility and N-1 Contingency Mr. Weilun Wang , Mingqiang Wang, Ran Li Shandong University, China
11	E1198	Optimal scheduling of integrated energy system considering distributed photovoltaic power fluctuation Kun Shi, Dezhi Li, Yuanfei Li, Mr. Yi Wu , Liangzhong Yao , Siyang Liao Wuhan University, China
12	E1063	Research on multi-parameter data monitoring system of distribution station based on edge computing Shizhan Song, Sen Li, Hui Gao, Jingyu Sun, Zhenshu Wang, Mr. Yongzhi Yan Shandong University, China
13	E1163	Risk Assessment of Cascading Failure in Urban Power Grid based on Probabilistic Power Flow Zufeng Hou, Guanxin Qiu, Jiantian Chen, Chao Wang, Ruifeng Zhao, Bo Li, Mr. Junji Bin , Bo Li Southwest Jiaotong University, China
14	E1089	Small-signal stability analysis of different outer-loop control combinations under AC/DC

		decoupled control frame for hybrid MMC Xiaojun Lu, Dr. Mengbo Li , Jun Xiao, Lei Ye, Xiangyuan Pan Changjiang institute of survey, planning, design and research, China
15	E1095	Research on Evaluation Method of Power Transformer Supplier's Comprehensive Ability Dr. Jinneng Chen State Grid Materials Co. Ltd., China.
16	E1165	Simulation and Analysis of DC Magnetic Bias in Zhejiang Power Grid Ren Tang, Mr. Shanzhong Ju , Wei Chen, Taiying Zheng Zhejiang University, China
17	E1168	Resilience Enhancement of Power Grid Considering Optimal Operation of Regional Integrated Energy System Under Typhoon Disaster Jiangxin Zhou, Wanjian Zhao, Shiwei Zhang, Yangyang Liu, Jinxia Gong, Mr. Yao Ye . Shanghai University of Electric Power, China
18	E1215	Multi-Day Load Forecasting Method In Electricity Spot Markets Based On Multiple LSTMs Dr. Guang Yang , Songhuai Du, Qingling Duan, Juan Su China Agricultural University, China
19	E1220	An efficiency optimization control method for three-phase interleaved DC-DC converter Jinxin Wang, Renyong Peng, Chen Cai, Haitao Yu, Meiyuan Chen, Yiyi Liu, Ke Wu, Shihan Tang, Hongyang Wei, Jie Chen Nuclear Power Institute of China, China
20	E13008	Theoretical analysis and Calculation of Arc Contact Erosion of High Voltage Circuit Breaker Dr. Gong Chen , Zhuang Cheng, Tao Duan, Weiwen Zeng Changjiang institute of survey, planning, design and research, China
21	E1191	Electricity Price Elasticity Model under Electricity Market Transaction Mode Dr. Chengliu Ai , Xian Cao, Haifeng Wang China Agricultural university, China
22	E1195	A Two-stage Electric Energy Scheduling Strategy for Pelagic Island Microgrid Clusters Dr. Quan Sui , Fanrong Wei, Xiangning Lin, Zhengtian Li Huazhong University of Science and Technology, China
23	E1208	Short-term Load Combination Forecasting Model Based on Causality Mining of Influencing Factors



ONSITE POSTER SESSION

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Songhuai Du, Prof. Tian Gao , Juan Su, Guang Yang, Shu Fang Chinese Academy of Sciences , China
24	E1232	Droop Control Design of MTDC Systems with Large-Scale Renewable Integration based on ANFIS Prof. Haiying Dong, Kaiqi Liu, Miaohong Su, Weiwei Zou, Xiping Ma Lanzhou Jiaotong University, China
25	E1025	Construct Fine-grained Energy Big Data using NILM Technology Yan Liu, Ruiming Yuan, Xiaokun Yang, Bo Liu, Mr. Ruiqi Zhang . Tianjin University China
26	E1197	Optimal dispatch of integrated energy system considering source-load-storage interaction Dezhi Li, Kun Shi, Xichao Zhou, Mr. Yi Wu , Liangzhong Yao, Siyang Liao Wuhan University, China
27	E1101	Robust Unit Commitment with CVaR of Wind Power Ms. Ran Li , Mingqiang Wang, Weilun Wang. Shandong University, China

ONLINE PRESENTATION 线上报告



ONLINE PRESENTATION TIPS 线上口头报告须知

- * The certification of oral presentations will be awarded after the conference by Email.
- * Each Presenter need to do the oral presentation within 15 minutes, you can prepare a video or present online. But both of them need you to show up.
 - * if you prepare a video, you need to play it by yourself.
- * The winner will be announced and awarded at the closing ceremony
- * Session Photo will be taken at the end of the session.

Session 9 -Modern Power System Control and Operation

主题分会 9-现代电力系统控制与运行

Mar. 28th 14:45-16:45 | Meeting Zoom ID: 672 7282 0575

Chair:

14:45-15:00	E13013	Current Situation and Achievements of Flexible Transformation of Thermal Power Units in China Dr. Chen He , Bian Jiayu, Wang Xingang, Xin chaoshan, Yu Zhiyong, Tian shoutao China Electricity Council, China
15:00-15:15	E1156	Fatigue Life Analysis of the Pump Head of Silent Reciprocating Piston Air Compressor Zhenghao Ge, Ms. Congrui Lei , Linlin Wei, Demin Chai Shaanxi University of Science and Technology, China
15:15-15:30	E1052	Optimal Design of PCB Layout Based on Thermal Analysis Using Taguchi Method Ms. Sun Wei , Li Ye, Zhang Shaokun, Shi Qibiao Institute of Electrical Engineering, Chinese Academy of Sciences , China
15:30-15:45	E1022	An Emergency Control Strategy of Synchronous Condenser to Reduce the Risk of HVDC Continuous Commutation Failure Mr. Jie Lei , Yu Wang, Hongli Zhang, Xuelian Wu, Zhongqing Sun, Jianliang Gao NARI Group Corporation (State Grid Electric Power Research Institute), China.
15:45-16:00	E1223	Damping Control of a Power System with DFIG Based on MPC for Inter-area Oscillations Lu Sun, Ms. Siyao Yu , Shuo Diao, Haoxin Zhang Northeast Electric Power University, China

16:00-16:15	E13016	Research on the harmonic transfer mechanism of VSC based on Bessel function and control equation Li Xinpeng, Diao shoubin, Cao Xin, Li Jian, Du Peixiang, Ms. Qin shanmeng Shandong University, China
16:15-16:30	E2005	Research on multi-point temperature control method in the heating system of 3D glass hot bending machine Mr. Zhaobo Xu , Pingfa Feng, Huiting Zha, Chao Xu, Yuan Ma, Feng Feng Tsinghua University, China
16:30-16:45	E1150	A New Method of Maintenance and Repair of Secondary System in Intelligent Substation Ms. Yan Yang , Guangmin Jin, Bin Yin, Zhikun Liu, Lei Qi, Qin Liu, Yanan Geng Wuhan Electric Power Technical College, China

Session 10 -Optimization, Control and Protection of Renewable Energy

主题分会 10-优化, 控制和保护可再生能源

Mar. 29th 09:00-10:30 | Meeting Zoom ID: 672 7282 0575

Chair: Jinbo Wang, Kunming University of Science and Technology, China

09:00-09:15	E1171	An Improvement Algorithm for Online Identification of Thevenin equivalent parameters Ms. Xinnan Chen , Yuan Sun, Rui Yin Shanghai Dianji University, China
09:15-09:30	E1119	Accuracy improvement of short-term photovoltaic power forecasting based on PCA and PSO-BP Mr. Kangzhuang Guo , Xingong Cheng, Jie Shi University of Jinan, China
09:30-09:45	E1169	Active Control Strategy for Wind Farm Systems to Prevent Sub/super- Synchronous Oscillations Dr. Haijiao Wang , Chun Liu China Electric Power Research Institute , China
09:45-10:00	E1219	Inter-regional learning curve model of renewables in the context of technology spillover Ms. Yiru Dai , Yipu Zeng Tongji University, China

10:00-10:15	E13010	Sizing Optimization of wind-hydro combination system based on frequency division Jingwen Cai, Jinrui Guo, Jie Shi, Mr. Kangzhuang Guo University of Jinan, China
10:15-10:30	E13015	Development Status and Measures to Promote the Development of Renewable Energy in China Bian Jiayu, Wang Xingang, Xin chaoshan, Yu Zhiyong, Tian shoutao, Dr. Chen He China Electricity Council, China

Session 11 -Electrical Equipment Design and Control

主题分会 11-电气设备设计与控制

Mar. 29th 09:00-10:30 | Meeting Zoom ID: 644 6585 8778

Chair: Kei Eguchi, Fukuoka Institute of Technology, Japan

09:00-09:15	E1002	Design of Sub-synchronous Oscillation Damping Controller for SSO Suppression Mr. Li Shupeng , Huo Xianxu, Liu Yun, Sun Gang State Grid Tianjin Electric Power Research Institute, China
09:15-09:30	E1061	An Economic Operation Method of Distribution Transformer Considering Switching Cost Shizhan Song, Sen Li, Hui Gao, Wei Xu, Zhenshu Wang, Jingyu Sun Shandong University, China
09:30-09:45	E13018	Research on the harmonic transfer mechanism of VSC based on Bessel function and control equation Li Xinpeng, Diao shoubin, Cao Xin, Li Jian, Du Peixiang, Ms. Qin shanmeng Shandong University, China
09:45-10:00	E1210	BPA based Selection Method for MMC Reactive Power Control Mode Mr. Xiao Yu , Guangquan Bu, Shanshan Wang, Bing Zhao China Electric Power Research Institute, China.
10:00-10:15	E13017	An LED Driver Connecting a Nested-type SC Converter and an SI Buck-Boost Converter in Parallel Assoc. Prof. Kei Eguchi , Akira Shibata, Wanglok Do, Farzin Asadi Fukuoka Institute of Technology, Japan
10:15-10:30	E1160	An Impedance-Based Parameters Identification Method for Grid-Connected Inverter Haijiao Wang, Dr. Yu Lei China Electric Power Research Institute, China



ONLINE SESSIONS

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

Session 12 - Power Load Forecasting and Protection

主题分会 12-电力负荷预测与保护

Mar. 29th 09:00-10:30 | Meeting Zoom ID: 643 9745 8814

Chair: Jinrui Tang, Wuhan University of Technology, China

09:00-09:15	E1166	Maximum daily load and its occurrence time forecasting of distribution network based on Hausdorff distance and ElasticNet Mr. Wangfeng Zhou , Yong Li, Yixiu Guo, Xuebo Qiao, Wei Deng Hunan University, China
09:15-09:30	E1016	Short-Term Load Forecasting for an Industrial Park Using LSTM-RNN Considering Energy Storage Feng Li, Xiaowei Xu, Xin Tian, Mr. Zilong Zhao Wuhan University of Technology, China
09:30-09:45	E1132	Review on analysis of steel production load characteristics and adjustable potential Haijing Zhang, Zongjie Liu, Aiqun Zhang, Dr. Feixiang Gong , Songsong Chen, Guanghua Guo, Jie Song, Xiao Zhang State Grid Shandong Electric Power Company Department of Power Consumption, China
09:45-10:00	E1155	The Influence of Electric Heating Equipment on the Load Characteristics of Jilin Province Baoju Li, Ms. Wenting Wang , Yong Sun, Pupu Chao, Xueguang Zhang, Weixing Li Harbin Institute of Technology, China.
10:00-10:15	E1192	Design and Application of Automatic Test System for Series Compensation Protection Mr. Ma Zhihao , Zheng Shaoming, Liu Miao, Liu Yimin, Huang Tianxiao State Grid Jibei Electric Power Research Institute(North China Electric Power Research Institute Co. Ltd.),China
10:15-10:30	E12002	Simulation Research on Grounding Mode of Modular Multilevel Converter Based Medium Voltage DC Distribution System Ms. Fan Nali Naval University of Engineering, China

Session 13 -Electronic Signal Analysis and Processing

主题分会 13-电子信号分析与处理

Mar. 29th 09:00-10:30 | Meeting Zoom ID: 638 4089 9730

Chair: Prof.

09:00-09:15	E1135	An Overview on Small-Signal Modeling and Stability Analysis Methods of Voltage-Source Converter Grid-Connected System Haijiao Wang, Huadong Sun, Dr. Xinyu Lu China Electric Power Research Institute, China
09:15-09:30	E2012	The influence of EMI power filter's layout on the measurement of mains terminal disturbance voltage Mr. Li Jun , Zhou Yi, Xie Jinxiong Shenzhen Academy of Inspection and Quarantine, China
09:30-09:45	E1084	Research on Recognition of High Frequency Signals of Cable Based on Wavelet Energy Distribution Xiangqing Kong, Ying Zhai, Yang Yu, Qian Sun, Shufen Yao, Mr. Chong Sun Shandong University, China
09:45-10:00	E1087	Research on harmonic detection method based on wavelet neural network with a new structure Mr. Ming Zhang , Yang Wang, Chen Cheng, Jiaxiong Xu, Shunfan He, Yisheng Hu Wuhan Textile University, China.
10:00-10:15	E1230	Design of Magnetically Coupled Resonant Wireless Power and Signal Synchronous Transmission System Based on Digital Frequency Modulation Assoc. Prof. Kun Li , Ai Guo, Bin Hu, Ling Li, Taifeng Zhang, Fengjun Xue Tianjin University of Technology, China
10:15-10:30	E1088	Optimal design of passive harmonic filter with high power factor Mr. Ming Zhang , Chen Cheng, Yang Wang, Jiaxiong Xu, Shunfan He and Yisheng Hu Wuhan Textile University, China

Session 14 -Risk Assessment and Planning of Power Systems Integrated with High Penetration of Renewable Energies

主题分会 14-电力系统风险评估与规划

Mar. 29th 10:45-12:00 | Meeting Zoom ID: 672 7282 0575

Chair: Bo Hu, Chongqing University, China

10:45-11:00	E1024	Comprehensive Risk Assessment Method for Distribution Network Dispatching Considering Equipment Risk Wei Xin State Grid Fujian Electric Power Co., Ltd., China
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ONLINE SESSIONS

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

11:00-11:15	E1031	Development of Rwanda's Future Energy Scenarios for Long-Term Investment and Planning Mr. Emmanuel Mudaheranwa , G. Masengo, Ye-Obong Odokah, Liana Cipcigan, Carlos E. Ugalde-Loo Cardiff University, UK
11:15-11:30	E1048	Fault Analysis of The Distance Protection Overreach Caused by The Power Transmission Lines Ring Closing with A Wrong Phase Sequence Ms. He He , Hongbin Wang, Ruiling Huang State Grid Chongqing Electric Power CO. Electric Power Research Institute, China
11:30-11:45	E1189	Optimal Planning of SNOP Considering Natural Disaster Shuyi Shen, Dong He, Yingjing He, Songyan Wang, Mr. Jingru Zhang Heilongjiang Industrial Technology Research Institute, Harbin, China
11:45-12:00	E1213	Distribution Network Planning Considering loss with new linearization expression Yang Ge, Wenhao Gao, Mr. Xiaoyang Lian , Mingqiang Wang, Liqun Han, Baoyu Zhang, Tong Zhou Shandong University, China

Session 15 -Smart grid optimization and management 主题分会 15-智能电网优化及管理

Mar. 29th 10:45-12:00 | Meeting Zoom ID: 644 6585 8778

Chair: Jinbo Wang, Kunming University of Science and Technology, China

10:45-11:00	E1188	Interaction of electrical equipment Datas in IOT Mr. Li Yan Jun , Cui Qiang, Gao Chen Guang, Zhou Yin Ping China Electric Power Research Institute, China
11:00-11:15	E1026	Research on reactive voltage optimization of multi-DC sending power grid based on reinforcement learning Hong Zhou, Shaorong Cai, Mr. Sicong Yu , Jianliang Gao, Li Jiang and Liang Lu NARI Group Corporation (State Grid Electric Power Research Institute), China
11:15-11:30	E1038	Comprehensive Diagnosis Method of Large Power Grid Based on Multi-agent Perception of Local Computer-visualized Power Flow Xingwei Liu, Shixiong Fan, Yanpin Wang, Mr. Jingrui Zhang , Songyan Wang Harbin Institute of Technology, China
11:30-11:45	E1072	Estimation of Inertia Response Power and Primary Frequency Modulation Response



ONLINE SESSIONS

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Power Considering the Equivalent Inertia of Multi-machines Power Grid Mr. Jinlian Liu, Xueqiang Zhao State Grid Shanghai Municipal Electric Power, China
11:45-12:00	E13019	Real-time Amplitude and Phase Detection of Grid Fundamental Voltage Considering Decaying DC Component Mr. Hongqing Liu, Jianxin Zhang, Yang Qian China University of Mining and Technology, China

Session 16 -Advanced Electric Vehicles and Drive Technology

主题分会 16-先进电动汽车及驱动技术

Mar. 29th 10:45-12:00 | Meeting Zoom ID: 643 9745 8814

Chair: Tao Niu, Chongqing University, China

10:45-11:00	E1049	The Assessment of Fuel Cell for a 100-seat Ferry Power Application Mr. Jingyang Wu, Jianxun Xie. University College London, UK
11:00-11:15	E2003	Research on Cascade Utilization and Reconfiguration of Decommissioned Power Batteries based on Flexible Control Technology Yongqiang Zheng, Hejie Xue, Ms. Fengjuan Wang, Dingyuan Chang Zhuhai Watt Power Equipment Co. Ltd, China
11:15-11:30	E1019	An Optimal Dispatching Strategy for Charging and Discharging of Electric Vehicles Based on Cloud-Edge Collaboration Dr. Jing Zhang, Qian Jiang, Aiqiang Pan, Taoyong Li, Zhe Liu, Yuanxing Zhang, Linru Jiang, Xiangpeng Zhan China Electric Power Research Institute Co., Ltd., China
11:30-11:45	E1020	Distributed Charging Control of Electric Vehicles Considering Cooperative Factor in Photovoltaic Charging Station Dr. Zhen Chen, Deming Yu, Mingyu Pan, Jing Zhang, Ruiming Yuan, Xianglu Liu and Sixiang Zhao State Grid Beijing Electric Power Research Institute, China
11:45-12:00	E13021	Inertia and Damping of DC Droop Controlled Electric Vehicle System with PLL Dr. Liancheng Xiu, Mingxian Li, Yue Wang, Jian Lin Wuhan University, China



ONLINE SESSIONS

ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

Session 17 -Power System and Reliability Analysis

主题分会 17-电力系统及可靠性分析

Mar. 29th 10:45-12:00 | Meeting Zoom ID: 638 4089 9730

Chair: Changzheng Shao, Chongqing University, China

10:45-11:00	E1040	Automatic construction of knowledge graph and its application in electric power system Mr. Yuanpeng Tan , Huifang Xu, Dong Yan, Guozheng Peng, Fang Wang. China Electric Power Research Institute, China
11:00-11:15	E1103	Research on Testing Technology of Functional Reliability of Electric Energy MeterBasing on Weak Spot Detection Rui Wang, Yingying Cheng, Jie Du, Feng Zhou, Shishun Tan State Grid Chongqing Electric Power Company Marketing Service Center(Metrology Center), China
11:15-11:30	E1186	Marginal Cost and Benefit Analysis for Distribution System Reliability based on Consumer-Centric Reliability Assessment Mr. Liyang Liu , Jieying Liu, Yuqi Han, Wentao Zhang , Shengyong Ye State Grid Sichuan Economic Research Institute, China
11:30-11:45	E2004	Indicators recommendation algorithm based on information entropy and FP growth for power report system Mr. Yang Yifan , Jin He, Yumeng Zhang, Jian Zheng, Ning Liu State Grid Tianjin Information & Telecommunication Company, China
11:45-12:00	E1196	An Improved Wind Power Scenario Reduction Method Considering Spatial-Temporal Correlation and Cyber Attacks Mr. Dong Liu Hunan University, China

Session 18 - Fault Diagnosis and Maintenance

主题分会 18-故障诊断与维护

Mar. 29th 13:30-15:30 | Meeting Zoom ID: 672 7282 0575

Chair: Prof.

13:30-13:45	E1123	A new modeling method for fault prediction of wind turbine gearbox based on partial least squares regression analysis. Wang Hao, Liu Bing, Liu Huaping, Mr. Zhang Hao
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ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Northeast Electric Power University, China
13:45-14:00	E1133	Permanent and transient fault identification for 10 kV distribution network using wavelet analysis and support vector machine Mr. Yang Liu ,Lisheng Li, Kai Chen, Linli Zhang, Shidong Zhang State Grid Shangdong Electric Power Research Institute, China
14:00-14:15	E1141	Simulation on HVDC Actual Fault and Analysis of Simulation Reliability Ms. Yang Ling , Wang Zhidong, Deng Fengqiang South China University of Technology GuangZhou,China
14:15-14:30	E1143	Performance Analysis of Pilot Zero Sequence Directional Protection for Double Circuit Transmission Lines under Complex Fault Condition Hong Cao , Shuyang Wang, Qiu Xia, Kai Xu, Xingguo Wang, Dingxiang Du China Electric Power Research Institute, Beijing, China
14:30-14:45	E1178	The Analysis and Application of Decentralized Cyber Layer and Distributed Security Control for Interconnected Conurbation Grids under Catastrophic Cascading Failures Mr. Yuqi Han , Jieying Liu, Yunkai Lei, Liyang Liu, Shengyong Ye Sichuan Power Economic Research Institute, China
14:45-15:00	E1204	Fault Diagnosis of Short Circuit in Transmission Line Based on Variational Modal Decomposition and Whale Algorithm Ms. Ruiling Huang , Hongbin Wang, He He, Li Chen State Grid Chongqing Electric Power CO. Electric Power Research Institute, China
15:00-15:15	E1234	A LSTM Line Selection Method of Single-phase Ground Fault Based on Big-data Platform Liu Zhengyi , Deng Changhong, Ying Huamei, Fanhu Wuhan University, China
15:15-15:30	E2009	Research on Fault waveform Recording Testing of Single Phase to Earth for Distribution line fault indicator Prof. Hui Yin , Baikui Li, Ze Wang, Lingyun,Gu, Jingjing Bao China Electric Power Research Institute, China

Session 19 - Power and Energy Engineering

主题分会 19-电力与能源工程

Mar. 29th 13:30-15:30 | Meeting Zoom ID: 644 6585 8778

Chair: Prof.

13:30-13:45	E1126	Lithium battery SOC prediction based on improved BP neural network algorithm Xiaozhou Zhang, Mr. Yan Jin , Ruiping Zhang, Haiying Dong. Northeast Electric Power University, China
13:45-14:00	E1227	Design of an active battery equalization circuit with DC-DC converter Assoc. Prof. Kun Li , Xiao Zong, Qing Liu*, Yanfang Sun, Fengjun Xue Tianjin University of Technology, China
14:00-14:15	E1098	Review on the regulable potential evaluation of industrial load clusters Haijing Zhang, Zongjie Liu, Aiqun Zhang, Dr. Feixiang Gong , Jun Lu, Songsong Chen, Dezhi Li, Xiao Zhang, Kaikai Ren State Grid Shandong Electric Power Company Department of Power Consumption, China
14:15-14:30	E1112	Status perception method of the renewable energy and thermal power coupled system based on operation security region Ms. Bingjie Tang , Ning Chen, Guiping Zhou, Yuanzhu Zhao, Lei Zhang, Qianggang Wang, Hao Yang China Electric Power Research Institute, China
14:30-14:45	E1183	Research on Nearby Consumption of Renewable Energy and Electric Power User Matching Method Based on Energy Blockchain Technology Yun Chang, Kan Feng, Pei Sun, Xin Zhang, Mr. Jinpeng Jiang , Yaqi Zhang, Zheng Chen Inner Mongolia University of Science & Technology, China
14:45-15:00	E1217	Chance-constrained Market Clearing Model for Accommodating Large-scale renewable energy Dr. Li Yao , Jiangtao Li, Jinhui Duan, Xiaocong Liu State Grid Energy Research Institute, China
15:00-15:15	E1228	The Gain Matrix in Input-to-Output Stability Analysis with Applications to Interconnected Energy Systems Dr. Shengyu Wu , Bingqi Jiao, Weiqiang Chen, Bo Zhan State Grid Energy Research Institute CO., LTD., China
15:15-15:30	E2006	Remote real time monitoring system of slope and its application in sustainable mining of open pit coal mine Dr. Dinggui Hou , Xinyue Song, Sifan Li, Chenmei Lu, Kelin Ma, Jianing Li North China Institute of Aerospace Engineering, China



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ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

Session 20 - Electricity Consumption and Market Strategy

主题分会 20-电力消费与市场策略

Mar. 29th 13:30-15:30 | Meeting Zoom ID: 643 9745 8814

Chair: Prof.

13:30-13:45	E1077	Sensitivity Factors-based Congestion Management in Inter-regional Electricity Spot Market Guan Li, Hu Chenxu, Dr. Guo Ruipeng , Huang Wenying. Zhejiang University, China
13:45-14:00	E1129	Electricity Market Price Prediction Based on Differential Evolutionary Algorithm and Neural Network Guichuan Yuan, Mr. Fu Su , Hu Chen, Yi Lu, Zheng Huang, Zhi Cai State Grid Sichuan Electric Power Supply Company, China
14:00-14:15	E2008	Research on the Collaborative Clearing Model of Ancillary Service and Electric Energy Market Fan Zhang, Gaoquan Ma, Zheling Yan, Mengfei Xie, Yunren Liu, Mr. Yaojia Su , Qian Zhang Chongqing University, China
14:15-14:30	E1177	A Method for Accurate Analysis of Reserve Capacity Based on Electricity Spot Market Guichuan Yuan, Mr. Fu Su , Hu Chen, Yi Lu, Zheng Huang, Zhi Cai State Grid Sichuan Electric Power Supply Company, China
14:30-14:45	E1009	Research and Application in Human Resources Information System of Electric Power Enterprises Based on Blockchain Integration Mr. Miao Kun , Zhang Zhibo, Li Tao, Qian Shilin, Huo Mingxia Jiyuan Power Supply Company State Grid, China
14:45-15:00	E1050	A Pricing Method for Demand Response Using Game Theory Ms. Ling Gao , Lihua Ma Tianjin Tianda Qiushi Electric Power High Technology, China
15:00-15:15	E1066	Consecutive missing data recovery method based on long-short term memory network Xiaolong Guo, Ms. Shijia Zhu , Zhiwei Yang, Hao Liu, Tianshu Bi North China Electric Power University, China
15:15-15:30	E1082	Energy Measurement Feature Extraction Based on Association Rule Mining in Integrated Energy System



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ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Qing Zhu, SiYa Wei, XueMing Li, Mr. Zi Xiao Zou Southeast University, China
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Session 21 - Intelligent Control and Management of Modern Power and Energy Systems 主题分会 21-现代电力和能源系统的智能控制和管理

Mar. 29th 13:30-15:30 | Meeting Zoom ID: 638 4089 9730

Chair: Guangdi Li, Northeastern University, China

13:30-13:45	E1078	Multi-index comprehensive evaluation for the river source heat pump energy supply system based on dynamic weighting Mr. Song Guo , Pengpai Feng, Wenbo Hu, ChenguanXu, Jing Xiao, Jingzhou Xu State Grid Electric Power Research Institute Wuhan Efficiency Evaluation Company Limited, China
13:45-14:00	E1122	A short-term load forecasting method based on EEMD-LN-GRU Dr. Hongbo Lian , Shicheng Wang, Ning Gao, Fei Qu, HaiYang Wang, Chengyuan Xie, Bo Yang State Grid Huludao Electric Power Supply Company, China
14:00-14:15	E1047	Research on transient overvoltage control strategy of UHVDC with photovoltaic power plant Mr. Yichao Jia , Linan Qu, Ning Chen, Hongying Zhang, Shuanbao Niu, Chao Huo China Electric Power Research Institute, China
14:15-14:30	E1139	Coordinated Optimization of Multi-Station Integration Systems Considering Uncertainties Dr. Chupeng Xiao , Wenqing Li, Liangliang Zhu, Meng Yu, Chunyan Zhang, Jie Gao, Shimin Bian State Grid Electric Power Research Institute, China
14:30-14:45	E1062	Key technology and engineering application of pre decision system of quasi online dispatching control for massive power grid analysis Xiong Haoqing, Huang Yanhao, Dai Fei, Fu Hongjun, Lv Ying, Wang Buhua, Hao Junjie, Liu Yim, Mr. Li Wenchen China Electric Power Research Institute, China
14:45-15:00	E1125	Research on Optimal Control Strategy of Household Electricity Load Dr. Zhennan Wang , Penghui Li, Zhong Liu, Wei Zheng, Yang Dong, Peng Sun, Bo Yang State Grid Huludao Electric Power Supply Company, China



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ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

15:00-15:15	E1140	Flexible Load Active Management Method in Optimization Operation of Distribution Networks Fengzhang Luo, Ms. Xin Yang , Liangzhong Yao, Lingzhi Zhu, Dawei Zhao, Minhui Qian Key Laboratory of Smart Grid of Ministry of Education Tianjin University, China
15:15-15:30	E1200	An Assistant Decision-Making Method for Power Grid Contingency Management Based on Case-Based Reasoning Dr. Haixiang Gao , Lu Miao, Sijie Liu, Jianing Liu, Xiangning Lin, Yue Zhao Guangdong Power Grid Co., Ltd., China

Session 22 - Distribution Network Planning and Management 主题分会 22-配电网规划与管理

Mar. 29th 16:00-18:00 | Meeting Zoom ID: 672 7282 0575

Chair: Jinrui Tang, Wuhan University of Technology, China

16:00-16:15	E1104	Study on the Harmonic Amplification Influence of DC Inverter Substation With Cable Outgoing Line on the Receiving-end Power Grid Ms. Xiaohong Geng , Guang Su, Wei Lu, Zaibao Xiong, Yu Gao, Xiaohong Bu, Han Yan, Shaofei Du. State Nuclear Electric Power Planning Design & Research Institute, China
16:15-16:30	E1001	Research on distribution Network Reconstruction based on Improved Cuckoo Search Algorithm based on differential evolution Ms. Cheng Lan , Lv Hongfang Shanghai Institute of Electrical Engineering, China
16:30-16:45	E1034	Multi-objective distribution network reconfiguration based on backward/forward sweep-based power flow calculation Mr. Wang Hanlin , Jiang Hao, Han Jun, Cai Chao, Fan Anjie Southeast University, China
16:45-17:00	E1074	An Adaptive Adjustment Solution for Single-phase Line Break Fault in Low-Voltage Distribution Network Cheng Guo, Mr. Hanlin Wang Southwest Jiaotong University, China
17:00-17:15	E1211	A joint planning of DG and distribution network model considering network reconfiguration Yang Ge, Wenhao Gao, Ms. Yuxi Hu , Mingqiang Wang, Liqun Han, Baoyu Zhang, Tong Zhou.

		Shandong University, China
17:15-17:30	E1179	Research on Dynamic Reconfiguration of Distribution Network with High Penetration of DG Weiming Liu, Yi Lin, Shenxi Zhang, Qian Chen, Haozhong Cheng Shanghai Jiao Tong university, China
17:30-17:45	E1201	Power Recovery Strategy of Distribution Network with Distributed Power Xuri Sun, Yanzhen Li, Ms. Mei Cui Shandong University, China
17:45-18:00	E1099	Planning of Soft Open Point Integrated with ESS in Active Distribution Network Zijia Ding, Chunyi Wang, Fei Wang, Liang Feng, Guangxiao Li, Mr. Zhendong Xu Shandong University of Science and Technology, China

Session 23 - Wind and Photovoltaic Power Generation

主题分会 23-风力与光伏发电

Mar. 29th 16:00-18:00 | Meeting Zoom ID: 644 6585 8778

Chair: Prof.

16:00-16:15	E1096	Research on Wind Power Forecasting Error Based on Gaussian Mixture Distribution Model Dr. Peng Yan, Min Shi, Tieqiang Wang, Rui Yin , Yifeng Wang. State Grid Hebei Electric Power Research Institute, China
16:15-16:30	E1170	Analysis of the relationship between inertia and energy of high-proportion wind power grid-connected power system Yuchi Zhang, Assoc. Prof. Cheng Liu, Xiaoyang Zhao, Shuo Diao, Fangtong Yu Northeast Electric Power University, China
16:30-16:45	E13002	Research on Correlation Aggregation Method of Multiple Wind Farms Based on FA-LSTM Mr. Tianpu Zhou, Lin Ye, Mingshun Ma, Yue Fan, Pai Li, Hongshan Zhuang China Agricultural University, China
16:45-17:00	E1046	A New Direction Relay Algorithm of Three-Phase Short-Circuit for The DFIG-Based Wind Farm Outgoing Transmission Line Ms. He He, Yuming Liu, Zhiwei Zhao, Hongbin Wang State Grid Chongqing Electric Power CO. Electric Power Research Institute, Chongqing, China



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ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

17:00-17:15	E1079	Short term photovoltaic output prediction based on singular spectrum analysis Yan Jin , Ruiping Zhang. Lanzhou Jiaotong University, China
17:15-17:30	E1231	Analysis and Discussion on Technical Requirements for Operation of Photovoltaic Power Generation Ning Chen, Linan Qu, Mr. Yichao Jia , Hongying Zhang, Lei Zhang China Electric Power Research Institute, China
17:30-17:45	E13003	Analysis of the impact of the photovoltaic generation on distributed networks considering the fluctuation of its output Mr. Ao Wu , Lijun Tian Shandong University, China
17:45-18:00	E13007	Day-Ahead Photovoltaic Power Forecasting Using Convolutional-LSTM Networks Ms. Yuanyuan Wang , Hanghang Liu, Xiaoxiang Su, Yaobang Chen, Xiaowei Ma, Qi Liu Dongying Power Supply Company, China

Session 24 - High Voltage Transmission and Insulation Technology

主题分会 24-高压传输与绝缘技术

Mar. 29th 16:00-18:00 | Meeting Zoom ID: 643 9745 8814

Chair: Prof.

16:00-16:15	E1033	On-line Monitoring and Positioning of Sheath Grounding for High-voltage Single-core Cable Based on Pulse Difference Method Mr. Jiahui Chen , Renfei Che, Muye Zhang. Shandong University, China
16:15-16:30	E1067	Research on monitoring of tunnel cable insulation layer based on terahertz wave clustering analysis Dr. Zhang Zhonghao , Liu Haiying, Peng Guozheng, Liu Jiabin, Li Sun China Electric Power Research Institute, China
16:30-16:45	E1109	Investigation on Automatic Secondary Reclosing Strategies of Transmission Lines Zhenyu Wang, Jiaqing Liu, Zhengwei Sun, Bin Bao, Kaibai Wang, Mr. Hailong Wu , Jiaqi Niu, Weixing Li Dalian University of Technology, China
16:45-17:00	E1184	Insulator contamination diagnosis method based on deep learning convolutional neural network



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ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Yunpeng Liu, Mr. Tingyu Lai , Jiashuo Liu, Yonglin Li, Shaotong Pei, Jiajun Yang North China Electric Power University(Baoding), China
17:00-17:15	E1145	Electric Field of High Voltage Direct Current Overhead Transmission Lines with Covered Conductors Yuze Jiang, Lefeng Li, Diwen Jiang, Prof. Zhenguang Liang , Fangwei Li Shandong University, China
17:15-17:30	E1187	Influence of Pollution Degree and Humidity on Surface Discharge Characteristics of Insulators Yunpeng Liu, Mr. Jiashuo Liu , Tingyu Lai, Yonglin Li, Jiajun Yang, Shaotong Pei North China Electric Power University(Baoding), China
17:30-17:45	E1225	The Measurement and Analysis of Electromagnetic Environment of DC Transmission Line in High Altitude Areas Quda Tashi, Song Yue, Bujie Duo, Lei Gao, Deji Tenzin, Mr. Liugang Li , Fan Yang. Chongqing University, China
17:45-18:00	E1185	Research on Diagnosis Device of Insulator Pollution Degree based on BP Neural Network Yunpeng Liu, Mr. Jiajun Yang , Yonglin Li, Shaotong Pei, Jiashuo Liu, Tingyu Lai North China Electric Power University(Baoding), China

Session 25 - Electronics and Circuit System

主题分会 25-电子与电路系统

Mar. 29th 16:00-18:00 | Meeting Zoom ID: 638 4089 9730

Chair: Prof.

16:00-16:15	E1035	Research on Current Dispersion of Different Grounding Electrodes Shikuan Chen, Hanwu Luo, Fang Li, Wenzhen Li, Mr. Li Zhu , Fan Yang. Chongqing University, China
16:15-16:30	E1058	Temperature-rise Simulation and Research of a New 252kV GIS Disconnecter Based on Ansys Workbench Ms. Qin Zhengmin , Zhao Yantao, Zhang Lei, Wang Saihao, Ma Zhiqiang Henan Pingzhi High Voltage Switchgear Co., Ltd., China
16:30-16:45	E1092	Analysis of the Hybrid-MMC-HVDC Short-Circuit Current Under MMC ACsystem Symmetrical fault



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ASIA ENERGY AND ELECTRICAL ENGINEERING SYMPOSIUM

		Shengya Sun, Shanshan Wang, Mr. Yuanyuan Sun , Xiao Yu, Rui Yin, Hong Hu, Haoyin Ding, Jianhua Li, Lu Cao Shandong University, China
16:45-17:00	E1117	An Improvement Algorithm for Online Identification of Thevenin equivalent parameters Ms. Xinnan Chen , Yuan Sun, Rui Yin Shanghai Dianji University, China
17:00-17:15	E1164	Improve the Dynamic Breakdown Voltage of SOI LDMOS Devices by Eliminating the Effect of Deep Depletion in Substrate Ms. Yu Cai Chengdu textile college, China
17:15-17:30	E1043	Study on energy absorption characteristics of 220kV cable end arrester Dr. Ren Hongtao , Zhang Ying HuaDong Engineering Corporation Limited, China
17:30-17:45	E1013	Study on the DAC System for 10kV Cable Insulation Testing Based on DC-AC Technology Xuefeng Zhao, Mr. Yincheng Gao , Yuxin Lu, Wei Duan, Futao Jin, Lu Pu, Zeli Ju, Zhe Hou and Haofei Sun. Xi'an Jiaotong University, China
17:45-18:00	E1236	A detection method of electricity stealing behavior of charging pile based on CNN-LSTM Cheng Nuo, Su Yuquan, Zheng Peng State Grid Fujian Power Economic Research Institute, China

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