

2021 International Symposium of Resilient City & The 21st Annual General Meeting of UK-CARE 3rd Conference Circular

Background

In October 2019, the first World Young Scientist Summit (WYSS) was successfully held in Wenzhou. Chinese President Xi Jinping sent a congratulatory message to the summit, accurately pointing out that "the future of science and technology is dependent on our young. World's common aspirations are to exchange in science and technology, and to promote innovation and cooperation among young people". In October 2020, the WYSS 2020, which was successfully held in Wenzhou, received a message from UN Secretary-General António Guterres. In his message, Guterres indicated that the declaration adopted by WYSS is an important expression of support for the role of science in advancing human well-being and in overcoming the COVID-19 pandemic.

WYSS is aiming at building a better platform for international cooperation in innovation and technology. With the theme of "gathering talents from all over the world to create a better future", it also intends to unite outstanding young scientists from around the world, establish an open and cooperative exchange platform, promote the exchange of ideas between young scientists and entrepreneurs, lead economic and social development with scientific and technological innovation, and jointly create a better future for human development.

2021 International Symposium of Resilient City is planned to be held during WYSS 2021.

Information

Name:

**2021 International Symposium of Resilient City
& The 21st Annual General Meeting of UK-CARE**

Theme:

Constructing A Safe, Green, And Livable Digital Resilient City By Adapting To Local Conditions

Organizational Structure

Patronages:

China Association for Science and Technology (CAST)
The People's Government of Zhejiang Province
China Geological Survey

Sponsors:

Zhejiang Association for Science and Technology
Wenzhou Municipal People's Government
Nanjing Geological Survey Center of China Geological Survey
Young Earth Scientists (YES) Network
UK China Association of Resources and Environment (UK-CARE)

Host Organizations:

Wenzhou Association for Science and Technology
The 11th Geological Team of Zhejiang Geological Exploration Bureau
Engineering Innovation Center for Urban Underground Space Exploration and Evaluation of
Ministry of Natural Resources of the People's Republic of China
Deep Earth Exploration Center of Chinese Academy of Geological Sciences
Urban Geological Research Center of Coordinating Committee for Geoscience Programmes in
East and Southeast Asia (CCOP)
Geological Society of Jiangsu Province
Associated Research Centers for the Urban Underground Space (ACUUS)
Zhejiang Huakun Geological Development Co., Ltd.
Wenzhou Construction Residue Utilization and Development Co., Ltd
NavInfo Co., Ltd.

Support Organizations:

International Cooperation Center of National Development and Reform Commission
Chinese Embassy in the UK
Global Sustainable Cities and Communities Society
Working Committee on Habitat Think Tank, China International Association for Promotion of
Science and Technology
Youth Working Committee of Geological Society of China
Youth Working Committee of Chinese Geophysical Society
Youth Working Committee on Science and Technology of Seismological Society of China
Jiangsu Underground Space Society
Professional Committee on Environmental Geophysics of Chinese Geophysical Society
Short-period Dense Array Technology and Equipment Sharing Union
State Key Laboratory for Geomechanics & Deep Underground Engineering of China University
of Mining and Technology
Zhejiang University
Shandong University
Southeast University
Shenzhen University
Wenzhou University
Shanghai Jiao Tong University
Jilin University
Nanjing Normal University

Beijing Normal University
 University of Science and Technology Beijing
 China University of Geosciences, Beijing
 China Academy of Art
 China State Construction Engineering Corporation
 GeoTeck Co., Ltd.
 Environment Agency
 The UK Embassy in China
 British Geological Survey
 Association of British Chinese Professors
 University of Bologna
 University of Siena
 University of Nottingham
 University College London (UCL)
 University of York
 Bristol University
 University of Leeds
 University of Portsmouth
 University of Aberdeen
 Exeter University
 Birmingham University
 Virtual Earth Consultancy Ltd
 Shanghai Coordination Center of World Cities Day (SCCWCD)

Date and venue

Parallel Session 1:

Date	Time	Schedule
November 2, 2021	All Day	Arrival and Check-in
November 3, 2021	Morning	Arrival and Check-in
	Afternoon	Opening Ceremony
November 4 - 5, 2021	All Days	Official Meetings and Field Trip

Venue:

Offline: Shangri-La Hotel, Wenzhou, Zhejiang, China

Online: Zoom

Parallel Session 2:

Date	Time	Schedule
December 16, 2021	All Day	Arrival and Check-in
	Evening	Opening Ceremony & Welcome Dinner
December 17, 2021	All Day	Official Meetings
December 18, 2021	Morning	Field Trip

Venue:

Offline: Xinyang, Henan, China

Online: Zoom

Scientific Committee

President: Chen Xiangsheng**Members:**

Chen Jun Chen Xiaofei Chen Xu Chen Weizhong Chen Yang Dai Qiang
Gao Shiming Guo Huadong Fan Yiqun Gu Jincai Huang Jinhui Jia Haifeng
Jiao Yuyong Jin Zhenmin Jiang Jun Jin Qiang Li Shucai Li Xianhua Li Xiaojun
Li Xiaozhao Li Xiang Lin Hui Lu Yaoru Ma Yan Ning Jieyuan Qian Qihu
Song Ruixiang Song Yehao Wang Fang Wang Chengshan Wang Fuming
Wang Yanxin Xia Jianghai Xia Zhujiu Xing Lixia Xiao Wenjiao Xue Aimin
Wu Gang Yang Shufeng Yuan Ye Zhang Hongtao Zhao Jianjun
Andreas Sicklinger David Butler Dimitris Kaliampakos Dragan Savic
Fu Guangtao Han Dawei Jacques Besner Kang Jian Luo Kaihong
Maarit Saresma Markus Schaefer MIYACHI Yoshinori Natalie Kieboom
Philipp Schmidt Samer Bagaeen Stuart Marsh Wang Lei Ye Zhen
Young Joo Lee

Secretary: Xu Zhenhao**Vice Secretary:** Wu Yi Amy Li

Organizing Committee

President: Ge Weiya

Vice President: Yuan Bo Wang Lei Liang Feng Su Jingwen

Members:

Chen Yiheng Dong Wenjun Fan Yiqun Fang Lihua He Qingcheng Jiang Hao
Jiang Jun Li Junlun Li Yu Liu Kai Liu Yihong Luan Bo Ni Hongsheng
Qian Rongyi Wang Fei Wang Meng Wang Yibo Xu Chenhua Xu Zhenhao
Yang Qin Yuan Genghao Yuan Ye Zhan Gengshen Zong Zhaoyun Adam Roberts
Alex Furman Amy Li Andreas Sicklinger Batsaikhan Bayartungalag Chen Jiye
Du Sichan Elita Yunyue Li Fu Guangtao Guo Bing Gusai Yousif Han Dawei
Hu Yihua Ismail Farjia Joy Chiadika Li Peng Li Yuanyin Mehdi Rouholamin
Tanvi Arora Zhuo Lu

Secretary: Yuan Bo**Members of Secretariat:**

Amy Li Chen Bin Li Ji Li Yuanying Lu Hui Xie Daying Fu Sizheng

Proposed Topics

01. Exploration, Evaluation, Planning and Key Technologies of Urban Underground Space

Focusing on the key scientific issues in the exploration and evaluation planning of urban underground space, new methods and technologies of shallow exploration in strong interference areas of cities, and monitoring, observation and evaluation technology system, this meeting will display the innovative geological theory of urban underground space, and new high-precision detection methods and technologies, monitoring, detection and perception system technologies of the urban underground, to promote the development of urban detection, evaluation and methods and technologies.

Convened by:

Liang Feng, SinoProbe Center, Chinese Academy of Geological Sciences;
Wang Yibo, Institute of Geology and Geophysics, Chinese Academy of Science;
Qian Rongyi, China University of Geosciences (Beijing);
Zong Zhaoyun, China University Of Petroleum (East China);
Fan Yiqun, Urban Transportation & Underground Space Design Institute, Shanghai Municipal Engineering, Design Institute (Group) Co., Ltd;
Li Junlun, University of Science and Technology of China;
Liu Kai, SinoProbe Center, Chinese Academy of Geological Sciences;
Elita Yunyue Li, National University of Singapore;
Tanvi Arora, National Geophysical Research Institute, India;
Alex Furman, Technion Israel institute of Technology.

02. Urban Geological Survey and Its Application

Focusing on urban geological theory, urban geological survey, urban geological monitoring, urban geological evaluation, urban geological zoning and urban geological smart service, this meeting will show results and examples of urban geological theory research progress, new technologies and methods of urban geological survey, key technologies of transparent geological modelling of urban underground space and urban geological information system construction, evaluation methods of the environmental carrying capacity of urban geological resources and land space suitability, technological methods of urban geological security risk prevention and control, and application and services of the urban geological survey to support urban development and safety.

Convened by:

Ge Weiya, Nanjing Geological Survey Center of China Geological Survey;
Su Jingwen, Nanjing Geological Survey Center of China Geological Survey.

03. Disaster Prevention and Safe Operation and Maintenance of Urban Underground

Focusing on disaster prevention and safe operation and maintenance of urban underground, disaster mechanism, forecast and early warning, prevention and control of urban underground space, as well as the safety of underground space structure, disaster escape and smart management, this meeting will discuss research results and examples of disaster mechanism methods, forecast, identification, risk assessment and early warning system, disaster prevention and treatment technology, health state perception and repair technology of underground space structure during

operation and maintenance period, disaster escape and rescue safety management system, equipment information management system and smart decision-making service system.

Convened by:

Xu Zhenhao, Shandong University;

Fang Lihua, Institute of Geophysics, China Earthquake Administration.

04. Theory and Technology of Smart Cities Construction

Facing the key fields of the digital economy, spatio-temporal big data, digital twins, cloud computing, 5G communication technology, vehicle infrastructure cooperation, autonomous & controllable, etc., this meeting will discuss the application progress of urban information model and resource evaluation, smart traffic management, BDS location service, smart networked vehicle, information and infrastructure security, emergency management and satellite internet promoting smart city construction and new technological collaborative innovation, improving urban flexible governance capacity and refined service level, and Serving the sustainable development of green and low-carbon cities.

Convened by:

Jiang Hao, NavInfo Co., Ltd;

Batsaikhan Bayartungalag, Mongolian Academy of Sciences;

Yang Qin, Beijing University of Aeronautics and Astronautics.

05. The Construction of Resilient City Under the Background of "Carbon Neutrality and Emission Peak "

Based on the theme of enhancing urban resilience, ensuring urban safety, and the new urban construction and development under "carbon neutrality and emission peak", this meeting will focus on innovative development concepts, technologies and projects about low-carbon livable, resilient and sustainable cities, with a view to building a new town for 2060.

Convened by:

He Qingcheng, Chinese Academy of Geological Sciences;

Amy Li, ACUUS;

Adam Roberts, Nanyang Technological University;

Wang Meng, Chinese Academy of Sciences;

Ismail Farjia, African Youth Climate Hub;

Joy Chiadika, Renewable Energy & Environmental Sustainability (REES) Africa.

06. Heritage Maintenance & Urban and Rural Renewal

The spatial heritage spread throughout urban and rural areas is an empirical evidence of the development of human civilization, which continues the history and culture in a formal or informal way. Owing to the urban and rural construction model that adapting to local conditions and keeping pace with time, the spatial heritages have become retention of technology, social organization and conceptual model. On one hand, the integration of new technologies such as big data and AI enriches the level of heritage maintenance, on the other hand, on the other hand, the trade-off between protection and renewal of spatial heritages reflects the evolution of human history and self-concepts. The work that combing traditional local knowledge and new intelligent

technologies to protect the resilience of formal and informal spatial heritage in urban and rural areas, sustainable conserving and activating material and intangible cultural heritages, comprehensively considering the resilient construction of urban and rural areas from planning, design, construction and maintenance, requires the joint efforts and collaborative work of planners, designers, urban builders and scientific researchers.

Convened by:

Jiang Jun, Institute of Society and Strategic Research, China Academy of Art;

Liu Yihong, Institute of Society and Strategic Research, China Academy of Art.

07. Resilience of Urban Critical Infrastructure Facing Extreme Weather

The frequency and severity of extreme weather have been increasing as a result of climate change, which may threaten the services and functions of Critical Infrastructures (CIs) as well as harm the social economy due to the interconnectedness of urban systems. The research on urban CIs' resilience concerning extreme weather mainly include CIs related to transportation, communication, electricity, water and other CIs with service function; Quantification of the extreme weather that directly and indirectly affects the management of CIs; Safety, reliability and risk decision of CIs; Advanced numerical analysis techniques and simulations; Validations of existing techniques; Advances in sustainable and resilient CIs; Socioeconomic impacts made by the service interruption of CIs; Good practice in crisis response and recovery capability.

Convened by:

Han Dawei, Bristol University;

Zhuo Lu, The University of Sheffield;

Luan Bo, Peking University Shenzhen Institute.

08. Long Run Risk Modelling and Built Asset Management in Coastal Infrastructures

Risk modelling provides a critical forecasting framework for life-cycle based, built asset management systems in the coastal infrastructure. Long term risk factors such as climate change and demographic transition (ageing population and migration) pose significant risks to the existing financial and asset management systems, hence need to be fully incorporated and developed into a multi-disciplinary, long-run risk framework and scenario-based analysis, aiming at understanding full implications for financial, ecological and human sustainability and resilience along global coastal regions.

Convened by:

Ye Zhen, University College London; Xiamen University;

Jin Qiang, Shanghai Jiao Tong University.

09. Smart Water City facing the Changing Climate

Due to climate change, the frequency and intensity of extreme weather events have shown an increasing trend, which raises global concern. The water system is the fundamental part of a city's infrastructure that guarantees the functionality of a city. The increase of extreme weather events severely threatens the operational safety of urban water systems. Taking the water supply system and drainage system in the urban water system as the two starting points, focusing on the safety of urban water system operation under extreme weather conditions (drought, heat waves, cold waves,

storm surges, floods), using new technologies such as big data, Internet of Things, artificial intelligence, digital twin and blockchain to ensure the safety of urban water systems.

Convened by:

Chen Yiheng, Shenzhen Research Institute of Nan Kai University;

Li Yu, Shenzhen Research Institute of Nan Kai University;

Huang Jinhui, Nan Kai University;

Han Dawei, University of Bristol;

Guo Bing, Centre for Environmental Health and Engineering (CEHE), University of Surrey;

Dai Qiang, Nanjing Normal University.

10. Early Warning System of Geological Disasters for Urban Resilience Facing Extreme Weather

Global climate changes frequently bring extreme weather such as severely heavy rainfall, which causes many destructive geological and geotechnical disasters, e.g., landslides, riverbank collapse and geotechnical slope failure. These disasters induced extensive human suffering and financial losses to cities and suburbs in the last few decades. An early warning system of geological and geotechnical disasters (EWSGD) is urgently needed for enhancing urban resilience to extreme weather. The research on urban EWSGD concerning extreme weather mainly includes: advanced predictive numerical approaches to forecast geological and geotechnical disasters under heavy rainfall; numerical models of terrains to simulate individual geological disasters, including landslides, riverbank collapse and geotechnical slope failure; network of early warning systems to issue an early warning of geological disasters; geological and geotechnical modelling for predicting failure initiation and propagation and potential damage area due to individual geological disaster; hydro geotechnical modelling considering heavy rainfall; geotechnical decohesion models considering heavy rainfall and slope terrains' saturation; artificial intelligent algorithm to analyse collected data of historic geological and geotechnical disasters; mitigation systems for decision making of administration.

Convened by:

Chen Jiye, University of Portsmouth;

Mehdi Rouholamin, University of Portsmouth;

Gusai Yousif, University of Portsmouth;

Zhao Jianjun, State Key Laboratory of Geohazard Prevention and Geoenvironment Protection (Chengdu University of Technology);

Wang Fei, Chengdu University of Technology;

Stuart Marsh, University of Nottingham.

11. Low Carbon Resilient City Power Supply

The electric power supply is one of the most important infrastructures in modern cities. The frequency and severity of extreme weather have been increasing as a result of climate change, which may threaten the city power supply security. With the popularization of electric vehicles (EVs) in the cities, large-scale deployment of distributed generation (DG) and energy storage (ES) as part of the city infrastructure will become a reality. Therefore, it is promising and urgent to develop a universal type and quick-acting energy router that can integrate the EVs, renewable

power generation, diesel generators, and other available sources to allow the uninterrupted power supply to the critical loads, especially during a power outage due to extreme weather conditions. The use of such an energy router is expected to offer up to 24 hours of backup power to critical sectors, which will benefit the emergency repair services and the city's recovery. This meeting will focus on the innovative development of concepts, technologies and solutions for the rapid deployment of energy routers.

Convened by:

Hu Yihua, University of York;

Li Peng, University of Aberdeen.

12. Sponge cities in the era of big data and artificial intelligence

The concept of sponge cities has been developed and practised as a new paradigm for urban water management in China in recent years. This encounters the emergence of big data and artificial intelligence (AI) which have already transformed many sectors such as retail and finance in recent years. Undoubtedly, AI will transform the discipline of water management and bring new opportunities and challenges to the development of sponge cities. The following topics will be discussed: sensor development, monitoring system design, data processing, sponge city design and planning, sponge city assessment, urban flood modelling, risk and resilience analysis, water quality management, water supply security, water asset management, climate change impact and adaptation, machine learning application and water digital twins.

Convened by:

Fu Guangtao, Exeter University;

Jia Haifeng, Tsinghua University;

Wang Lei, British Geological Survey.

Abstract

All participants who intends to attend the the conference should submit their abstract (in English) **before October 20, 2021**. The requirements of abstract are as follows:

- (1) The abstract shall be consistent with the theme of the meeting;
- (2) The abstract shall not exceed 400 words;
- (3) The abstract shall include:

- Title
- Author
- Author's unit, address and postal code
- Body
- Keywords (within 3-7 words)
- Introduction to the author (including education, position, main research direction, telephone, mobile phone, and E-mail)

Abstract submission:

Participants can submit their abstracts via the registration website (please see the registration section below. The acceptance of those abstracts for either presentation or poster will be decided

and noticed by the symposium academic committee later. Each attendee should not submit more than one abstract as the first author.

All invited speakers and participants who are chosen by the symposium academic committee to present their work via either oral presentation or poster can submit the PowerPoint or digital posters (in English) to: resilientcity@wyss.org.cn two days before the conference. The digital posters will be exhibited during and after the conference ([such as the poster exhibition of WYSS 2020](#)).

Please be noted that the submission of an abstract is not an essential condition to attend this conference. Special issues of relevant journals, such as Science of the Total Environment, will be arranged for the outstanding studies of the conference delegates. Full paper can be submitted after the meeting.

Meeting Form

The symposium includes keynote lectures of the main venue, oral presentations of the branch venue and posters. All invited speakers and participants who are chosen to orally present their work should make the presentations in English or Chinese within 15minites including Q&A time (simultaneous interpreting will be provided).

Awards

The Best Presentation Awards, The Best Student Presentation Awards, and the Best Poster Awards ([such as the Best Student Poster Awards of WYSS 2020](#)) will be set aside. These Awards will be chosen from the best presentations in each session.

Registration

(1) Registration

Please visit the website below before **October 20, 2021**, click the "registration" button, fill in and submit the participation information.

Website: www.wyss.org.cn/en/ResilientCity/

OR please scan the QR code below to register:



(2) Registration Fee (only for offline-scene participants): (including meeting materials, lunches and dinner).

- Regular: 800 CNY per person;
- Student: 400 CNY per person;
- Entourage: 300 CNY per person; (excluding meeting materials)

(3) Payment information

Account Name: GeoTeck Co., Ltd

Account Number: 630081363

Bank Name: Chengdu Branch, China Minsheng Banking Corp., Ltd

For payment and invoice requirement, please contact: Mr. Lu Hui, by 0086 13776573457, or by e-mail: geo_eu@163.com. To ensure symposium materials, meals and accommodation arrangement for participants, registration fee paid on site is not acceptable.

Contact

Website:

www.wyss.org.cn/en/ResilientCity/

UK-CARE Wechat Official Account



E-mail:

resilientcity@wyss.org.cn

ukcareoffice@gmail.com

Invitation of experts, agenda of the meeting:

Contact: Dr. Ge Weiya

Tel: 0086 18951757337

E-mail: 391743801@qq.com

Contact: Dr. Liang Feng

Tel: 0086 13811327513

E-mail: imr_liangfeng@126.com

Meeting services and accommodation:

Contact: Mr. Yuan Bo

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Contact: Mr. Lu Hui

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WYSS SECRETARIAT

UK-CARE Office

October 19, 2021