



# 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

## **Session title: Big Data in Support of Arctic Sustainable Development Goals and Pan-Arctic International Cooperation**

**Session Organizer:** International Research Center of Big Data for Sustainable Development Goals (CBAS); University of Chinese Academy of Sciences (UCAS)

### **Short Description**

With the development of Arctic geo-strategic environment and climate changes in recent years, the realization of Sustainable Development Goals (SDGs) in the Arctic has been facing increased uncertainties. In this context, how Big Data promote the Arctic sustainable development and the Pan-Arctic international cooperation? Thus, it makes sense to examine the latest developments of the big data in support of Arctic SDGs and trends in pan-Arctic international scientific cooperation in the foreseeable future.

Big data has unique capabilities in supporting Arctic scientific cooperation, especially in hosting the assessment of sustainable development goals and building information services. It plays a key role in global cooperation in the fields of climate, environment and energy, and provides strong support for developing Arctic scientific cooperation.

Strengthening the implementation of big data in the field of Arctic sustainable development can facilitate good use of the Arctic region's research and data resources and improve the environmental, economic and social conditions of Arctic communities as a whole. So as to better promote the realization of Arctic sustainable development goals and pan-Arctic cooperation.

The session is to focus on the following SDGs as example, aiming to promote peace, collaboration and prosperity in the Arctic region with efficient scientific and technological resolutions. The first is the SDG 13 (climate action) in the Arctic region, highlighting the Arctic amplification effect and its implications for global climate governance as great power competition and cooperation emerges. The second is SDG 3 (good health and well-being) in the Arctic region, examining the efficiency of the One Health program during the COVID-19 Pandemic; The third is the SDG 7 (affordable and clean energy), explaining the variation of the Arctic energy landscape against the background; and the last one is the SDG 4 (quality education) in the Arctic region, involving the international scientific communication, cooperation as well as challenges in the framework of the UArctic.

### **Objectives**

1. To examine the implementation of the SDG 13, SDG3, SDG7 and SDG4 in the Arctic region.
2. To find solutions with Big Data in supporting Arctic sustainable development and the Pan-Arctic international cooperation.
3. Based on these problems and solutions, this session is to promote international scientific cooperation and to provide constructive recommendations to policy-makers.

### **Expected Results**

1. a summary of the session as required;
2. a policy briefer about the session for related sector of the government;
3. potential papers co-authored by some of the panelists for future publication.



# 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

## Agenda

Time 13:15-15:15, September 7th 2023 Room: 307

### Guest Speakers (13:15-13:25) :

**GUO Huadong:** International Research Center of Big Data for Sustainable Development Goals, China

**GAO Feng** Ministry of Foreign Affairs, China

### Moderators:



**QIU Yubao**

**Professor in remote sensing**

**CBAS**

Dr. QIU Yubao, Research Professor at the International Research Center of Big Data for Sustainable Development Goals (CBAS), and the Aerospace Information Research Institute Chinese Academy of Sciences (AIR-CAS). He is currently the director of Digital Environment Division in CBAS, and co-lead (PoC) of the Group on Earth Observations Cold Regions Initiative (GEOCRI) and co-chair to the High Mountain and Cold Regions (HiMAC WG) Working Group of the "Digital Belt and Road" Program.



**XU Qingchao**

**Associate Professor in international relations**

**UCAS**

Ph.D. Associate Professor of University of Chinese Academy of Sciences (UCAS); Research Fellow & Director of the Center



## 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

for Arctic Sustainability Studies at China Institute for Innovation and Development Strategy (CIIDS), Chinese Academy of Sciences (CAS).

### Commentary Experts Invited:



**LI Xin**

**Institute of Tibetan Plateau Research (ITP), Chinese Academy of Sciences (CAS)**

Dr. LI Xin is currently a professor at Institute of Tibetan Plateau Research (ITP), Chinese Academy of Sciences (CAS) and the Director of National Tibetan Plateau Data Center at ITP/CAS. His primary research interests include land data assimilation, remote sensing and integrated modeling of hydrological and cryospheric processes in river basin scale. He received the B.S. degree in GIS and Cartography from Nanjing University in 1992 and the Ph.D. degree in Remote Sensing and GIS from CAS in 1998. He was a member of WCRP GEWEX (World Climate Research Programme/The Global Energy and Water Exchanges) scientific steering committee, and is a member of the International Science Advisory Panel of Global Water Futures programme.



**CHU Wenbo**

**Work Programme Officer**

**Group on Earth Observations (GEO) Secretariat**

CHU Wenbo is the Work Programme Officer at the Group on Earth Observations (GEO) Secretariat. She coordinates the development and implementation of the GEO Work Programme activities. She coordinated the data sharing efforts within GEO between 2014-2017, first as a seconded expert and later as a staff member. Before joining GEO, she was the Deputy Director of Division of the National Science and Technology Infrastructure Center in China. She led several research projects on policies and mechanisms for Science and Technology resource sharing between 2007-2013. She received a master's degree in Engineering in Tsinghua University in 2007. She is also a certified Project Management Professional.



# 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

## Participants

### Event1 (13:25-13:35)

#### Scientific cooperation and sustainable development



**Paul BERKMAN**

**Faculty Associate, Program on Negotiation at Harvard Law School (Associate Director of Science Diplomacy, Harvard-MIT Public Disputes Program)**

**Harvard University**

Paul Arthur BERKMAN is Faculty Associate, Program on Negotiation at Harvard Law School (Associate Director of Science Diplomacy, Harvard-MIT Public Disputes Program); Fulbright Arctic Chair 2021-2022, United States Department of State and Norwegian Ministry of Foreign Affairs; Professor of Practice in Science Diplomacy, Fletcher School of Law and Diplomacy Tufts University; Director, Science Diplomacy Center, Tufts University. Paul Arthur Berkman is science diplomat, polar explorer and global thought leader applying international, interdisciplinary and inclusive processes with informed decisionmaking to balance national interests and common interests for the benefit of all on Earth across generations.

### Event2 (13:35-13:45)

#### GEO Cold Regions Initiative



**Massimo MENENTI**

**Professor and PoC to GEO CRI**

**Delft University of Technology**

Prof. Dr. Massimo MENENTI/PoC, Professor Optical and Laser Remote Sensing, Department of Geoscience and Remote



## 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

Sensing, Faculty of Civil Engineering, Delft University of Technology Educational background: Physics (Univ. of Rome), Environmental Sciences (PhD Univ. of Wageningen). Research Interests: Land surface processes and remote sensing with emphasis on hydrology and water management. In recent years he has coordinated an EU research project Hydrological Determinants of Agricultural Production in South America: the contribution of numerical crop growth models and remote sensing. He is currently the coordinator of an EU network dealing with Climate Impact on Water and Drylands Agriculture (CLIWARDA). This is a worldwide network with participants from China, India, Argentina, Egypt and Niger besides UK, Italy and The Netherlands. Past investigations include studies of groundwater hydrology in the deserts of Libya and Egypt, the use of advanced Earth Observation sensors systems to improve the performance of atmospheric models and irrigation water management in several countries.

### Event3 (13:45-13:55)

#### Digital Arctic-environment and ecosystem



**LI Yifan**

**Member of the Norwegian Scientific Academy for Polar Research and Director  
UArctic-HIT-TC**

LI Yifan was a Senior Research Scientist with Environment & Climate Change Canada before 2013 and has become a professor at the School of Environment, Harbin Institute of Technology since then. He also held adjunct professor positions in Dalian Maritime University, China, and University of Ryerson and University of Regina, Canada. In 2021, Dr. Li was selected as the member of the Norwegian Scientific Academy for Polar Research. At the present, Dr. Li is the co-Editor of the Springe Book Series “From Pole to Pole”, the Director of the UArctic-HIT Training Centre, the first regional center of the UArctic, the Vice Chair of the Specialized Committee for Polar Environment and Ecosystem, Chinese Society for Environmental Sciences (SCPEE-CSES), the Chief Scientist of the Polar Academy, Harbin Institute of Technology (PA-HIT). His research has focused on long-range transport of persistent organic pollutants (POPs), the emissions, monitoring, and modeling of POPs and Chemicals of Emerging Concern (CECs), and indoor environment and human health. Dr. Li has published more than 330 peer-reviewed papers with more than 16,000 citations and has selected as one of the most Cited Chinese Researchers by Elsevier since 2014.

### Event4 (13:55-14:05)

#### Digital geomorphology and sustainable development of the Arctic



## 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京



**YANG Jian**

**Professor and Vice president**

**Shanghai Institute of International Studies**

Dr. YANG Jian is a senior research fellow at Shanghai Institutes for International Studies (SIIS), Director of the Shanghai Institute for International Organization and Global Governance at Shanghai University of Finance and Economics, Deputy Director of the China-Nordic Arctic Research Center, and Vice Chairman of the Pacific Society of China. He is also a member of the Arctic Circle Mission Council on GlobalArctic and chairman of the academic steering committee of the polar research center at South China Business College.

**Event5 (14:05-14:10)**

**Data and Knowledge for the Arctic or Data for SDG13 climate actions**



**Paola De Salvo**

**Group on Earth Observations (GEO) Secretariat**

Italian National, after receiving her Master's degree in Environmental Biology cum laude, from the University of Roma Tre, Rome Italy, she started her Geospatial career within the International Institute of Aerospace Survey and Earth Science (ITC) in the Netherlands. She later brought her GIS and Remote Sensing competencies to the United Nations Specialized Agencies of Food and Agriculture Organization (FAO) and World Food Programme (WFP) to ensure Earth Observations are used for decision making in developing countries. After 12 years of applying her skills within the UN System, she transitioned to the private sector where she worked for Esri Inc, as a solution engineer in support of United Nations and NGO GIS / Remote Sensing related projects. Believing in the power of Open Earth Observations Data and Knowledge she joined the Group on Earth Observations (GEO) Secretariat as an Information Technology Officer coordinating GEOSS Platform and GEO Knowledge Hub development, implementation and users uptake.



## 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

Event6 / (14:10-14:15)

Energy transition and sustainability in Arctic Nations



**DUAN Fengjun**

**Senior Research Fellow**

**General Incorporated Foundation, The Canon Institute for Global Studies**

Dr. DUAN Fengjun received his PhD from the Department of Urban and Environmental Sciences of Peking University. He is serving as a senior research fellow at the Canon Institute for Global Studies (CIGS). Before joining CIGS, he has been a researcher at the Center for Spatial Information Science of the University of Tokyo, Japan Science and Technology Corporation, and the Disaster Prevention Center of Kyoto University, an assistant professor at the School of Engineering of the University of Tokyo, a researcher at Ocean Policy Research Foundation. His main research fields include ocean resources development and environment protection, and energy system and climate change.

Event7 (14:15-14:20)

Green Economy modelling tools, reliable metrics and measurements for achieving Arctic Sustainable Development

Goals



**Alina STEBLYANSKAYA**

**Associate professor, School of Economics and Management**

**Harbin Engineering University**

Alina STEBLYANSKAYA, Associate Professor, Doctor of Engineering and Management, Visiting Scholar of Central Institute



## 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

of Economics and Mathematics of Russian Academy of Sciences and Russian Jiaotong University; Director of the Russia-China Committee for Cooperation in Science, Technology and Innovation of the Russian National public social organization "Russian Transport Research Institute", member of the Association "System Economics". He has been engaged in energy economy, environmental economics, Belt and Road digital economy cooperation, green energy finance, complex economics research for a long time. Harbin Engineering University "Green Technology Management and science and technology entrepreneurship Research Center" Xinghai team member.

### Event8 (14:20-14:25)

#### Policy practices of arctic indigenous traditional knowledge



**QU Feng**

**Professor and the founding Director of Arctic Studies Center**

**Liaocheng University**

The founding Director, and Professor of Arctic Studies Center at Liaocheng University, and a professor in archaeology at the Nanjing Normal University, China, He received PhD in anthropology from University of Alaska Fairbanks. He focuses his research on Arctic anthropology and ethnography, environmental history, ecological cosmologies, and TEK.

### Event9 (14:25-14:30)

#### Gap analysis of the existing Arctic Science Co-Operations (AASCO)



**Hanna K Lappalainen**

**Pan-Eurasian Experiment (PEEX) Program Secretary General, Helsinki University, Finland**

PhD, Docent, Pan-Eurasian Experiment (PEEX) Program Secretary General at the University of Helsinki, Institute for Atmospheric and Earth System Research (INAR) (FI) and the Lead of the Atmosphere and Climate Competence Center (ACCC)





## 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

Impact Program. She has a long-term experience of coordinating large-scale research projects and, at the moment she is coordinating the Arena for the gap analysis of the existing Arctic Science Co-Operations (AASCO) project funded by Prince Albert Foundation. She is a Co-Leader of the Universities of Arctic network “Arctic-boreal Hub”. She has received NASA Goddar Team Award EOS-AURA satellite OMI-Team in 2005 and an International Eurasian Academy of Sciences, IEAS, Silver medal in 2015. Lappalainen is a representative of Finland in the SAON ROADS Advisory Board, a national delegate of ISAC - The International Science Initiative in the Russian Arctic (ISIRA), Co-chair of the of the Artic-GEOSS-High Mountain and Cold Regions HiMAC (2020-), Academy Member of IEAS. She obtained her PhD. from the University of Helsinki, Finland, and has been engaged in analysis of the atmospheric biogenic volatile organic compounds and plant phenology.

**Panel Discussion** (14:30-15:00)

**Topic:** Big Data in Support of Arctic Sustainable Development Goals and Pan-Arctic International Cooperation

**Panelist:** All members.

**Audience questions** (15:00-15:10) (onsite only)

**Session Conclusion (Closing)** (15:10-15:15)