DBAR
Digital Belt and Road

The 8th Digital Belt and Road Conference
第八届“数字丝路”国际会议

会议手册
Program Book

22-24 October, 2024
Suzhou, China

Organizers & Sponsors

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Digital Belt and Road Program (DBAR)

Nanjing University

The International Research Center of Big Data for Sustainable Development Goals（CBAS）

Aerospace Information Research Institute (AIR), Chinese Academy of Sciences

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University of Energy and Natural Resources, Sunyani

University of Peshawar, Pakistan

China-ASEAN Regional Innovation Center for Big Earth Data (CARIC)

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Welcome

The year 2024 marks an important milestone in global efforts towards sustainable development with the Summit of the Future highlighting significant progress and aligning strategies and commitments towards a sustainable future, specifically the Global Digital Compact, which sets important goals for use of digital technologies for global sustainability and global prosperity. Moreover, the year 2024 marks the beginning of the International Decade of Sciences for Sustainable Development, declared by the United Nations General Assembly for the years 2024-2033. This decade presents a unique opportunity for humanity to harness the power of science to advance sustainable development, ensuring a secure and prosperous future for all.

The Digital Belt and Road Program (DBAR), launched in May 2016 by Chinese scientists, aims to facilitate the application of digital technology, especially Big Earth Data, to support the achievement of the SDGs in Belt and Road countries. Currently in its second implementation phase, DBAR has made significant efforts to promote digital technologies for sustainable development and is committed to facilitate global actions, particularly in Belt and Road Countries by addressing prevailing asymmetries and knowledge gaps. Over the years, DBAR has become an important platform for the global scientific community, fostering international cooperation and technological innovation in the digital age.

The 8th DBAR Conference (DBAR 2024), scheduled for October 23-24, 2024, in Suzhou, China, presents an important academic platform for scientists, engineers, and decision makers from around the world. This multi-stakeholder engagement will focus on the role of digital sciences and technologies in achieving the SDGs. Under the theme “Digital Routes Towards Global Sustainability”, DBAR 2024 will facilitate in-depth discussions on innovative ideas, novel research, and collaborative efforts to tackle the global challenges hindering sustainable development in the Belt and Road region. Additionally, the conference will also facilitate global dialogue on challenges related to research, capacity-building, reporting, and digital infrastructure. By promoting digital solutions, we aim to enhance informed policy-making and decision support systems, aligning our collective efforts towards the SDGs for a sustainable future.

I extend a heartfelt invitation to experts, scholars, government officials, entrepreneurs, engineers, and all stakeholders worldwide to contribute to the success of this event by sharing their achievements and innovative digital solutions aimed at sustainability transitions. We look forward to hosting you all, and for the opportunity to exchange and discuss ideas on future cooperation to work together to achieve the vision of UN 2030 Agenda for Development and ideals presented in the Global Developmental Initiatives.

GUO Huadong
Chair, Digital Belt and Road Program (DBAR)
Director General, the International Research Center of Big Data for Sustainable Development Goals (CBAS)

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Organization

Conference Chair

GUO Huadong	Digital Belt and Road Program (DBAR) International Research Center of Big Data for Sustainable Development Goals (CBAS), China
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LU Xiancai	Nanjing University, China

Vice-Chair

JIA Gensuo	International Research Center of Big Data for Sustainable Development Goals (CBAS), China Institute of Atmospheric Physics, CAS, China
Thorsten Jelinek	Taihe Institute, Germany

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(in alphabetical order by last name)

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Atta-ur-Rahman	University of Karachi, Pakistan
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DU Xiaoping	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
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Kamal Labbassi	University of Chouaib Doukkali, Morocco
LI Guoqing	Aerospace Information Research Institute (AIR), CAS, China
LI Lanhai	Xinjiang Institute of Ecology and Geography, CAS, China
LI Jianhui	Nanjing University, China
LIN Hui	Jiangxi Normal University, China
LIU Jie	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
Luke E. Mumba	The University of Zambia, Zambia
LI Xiaosong	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
LI Xinwu	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
LU Linlin	International Research Center of Big Data for Sustainable Development Goals (CBAS), China

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Martino Pesaresi	European Commission, Joint Research Center (JRC)
Massimo Menenti	Delft University of Technology, the Netherlands
Mazlan Hashim	Universiti Teknologi Malaysia (UTM), Malaysia
Monthip Sriratana	National Research Council of Thailand, Thailand
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Paul Uhlir	Digital Belt and Road Program (DBAR)
QIN Yuchu	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
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Rosa Lasaponara	Institute of Methodologies for Environmental Analysis, National Research Council, Italy
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Shukri Ahmed	Food and Agriculture Organization (FAO)
Silap Boupha	Asia and Pacific Affairs of the Ministry of Science and Technology, Laos
Valery Bondur	Russian Academy of Sciences, Moscow, Russia
Wang Cuizhen	University of South Carolina, USA
WANG Xinyuan	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
WANG Changlin	International Society for Digital Earth (ISDE)
WANG Juanle	Institute of Geographic Sciences and Natural Resources Research, CAS, China

WU Bingfang	Aerospace Information Research Institute (AIR), CAS, China
WU Tonghua	Northwest Institute of Eco-Environment and Resources, CAS, China
YAN Dongmei	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
ZHANG Li	International Research Center of Big Data for Sustainable Development Goals (CBAS), China

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QIU Yubao	Digital Belt and Road Program (DBAR)
CHEN Kunshan	Nanjing University, China
CHEN Fang	International Research Center of Big Data for Sustainable Development Goals (CBAS), China

Vice-Chair

LIANG Dong	Digital Belt and Road Program (DBAR)
LV Mingyang	Nanjing University, China
Zeeshan Shirazi	Digital Belt and Road Program (DBAR)

Member

(in alphabetical order by last name)

CHEN Bowei	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
Fu Danmin	Chinese National Committee of ISDE
JIA Guoqiang	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
JING Liping	Nanjing University, China
LI Xiaoting	Digital Belt and Road Program (DBAR)
LIU Jiajia	Digital Belt and Road Program (DBAR)
LIU Tong	Chinese National Committee of ISDE
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LUO Lei	International Center on Space Technology for Natural and Cultural Heritage (HIST)
Wang Lei	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
WANG Xiaohui	Digital Belt and Road Program (DBAR)
WU Wenjin	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
XU Wenwen	Nanjing University, China
ZENG Hongwei	Aerospace Information Research Institute (AIR), CAS, China
ZHANG Hao	International Research Center of Big Data for Sustainable Development Goals (CBAS), China
ZHU Lanwei	International Research Center of Big Data for Sustainable Development Goals (CBAS), China

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Keynote/ Invited Speakers

GUO Huadong

Guo Huadong is Director General of the International Research Center of Big Data for Sustainable Development Goals (CBAS), and a professor of Chinese Academy of Sciences (CAS) Aerospace Information Research Institute. He is an Academician of CAS, a Foreign Member of the Russian Academy of Sciences, a Foreign Member of the Finnish Society of Sciences and Letters, a Fellow of the World Academy of Sciences (TWAS), and a Fellow of the International Science Council (ISC). He presently serves as Honorary President of the International Society for Digital Earth (ISDE), Director of the International Center on Space Technologies for Natural and Cultural Heritage under the Auspices of UNESCO, Member of the ISC Global Commission on Science Missions for Sustainability, Chair of Digital Belt and Road Program (DBAR), and Editor-in-Chief of two scientific journals International Journal of Digital Earth and Big Earth Data. He served as Member of UN 10-Member Group to support the Technology Facilitation Mechanism for SDGs (2018-2021), Chairman of the International Committee of Remote Sensing of Environment (2017-2020), President of ISDE (2015-2019) and ICSU Committee on Data for Science and Technology (2010-2014). Prof. Guo specializes in remote sensing, radar for Earth observation, and Digital Earth science. He has published more than 500 papers and 24 books, and is the awardee of 20 international and domestic prizes.

Title:Digital Technology for Belt and Road Sustainability

The Digital Belt and Road (DBAR) initiative, launched in 2016, is a pioneering effort to leverage digital technologies for advancing the United Nations' Sustainable Development Goals (SDGs) across the Belt and Road region. Through fostering international collaboration among 59 countries and organizations, DBAR has created a platform for addressing global development challenges by promoting the use of data-driven solutions. The initiative emphasizes the importance of data-sharing, open science principles, and policy-making informed by real-time, high-quality insights. DBAR facilitates the integration of diverse data sources and disciplines, enabling cross-border cooperation in areas critical to sustainable development.

Since its inception, DBAR has made significant progress in key sectors vulnerable to climate change impacts, including disaster risk reduction, sustainable resource management, urban planning, and agriculture. Through the generation of high-resolution datasets and advanced analytical tools, such as artificial intelligence and digital twin technologies, DBAR delivers tailored solutions for improving resilience and promoting sustainability. The initiative's multidisciplinary approach, drawing from Earth system science, ICT, and socioeconomic fields, has enhanced understanding of complex environmental and socio-economic challenges.

Looking ahead, DBAR will continue to drive the integration of digital technologies with Earth and environmental sciences under a strategic vision termed "digital sciences for sustainable development." This forward-thinking approach aims to revitalize SDG progress by harnessing advanced digital tools and planetary observation data to develop innovative, data-driven methodologies. The initiative will also prioritize global engagement, robust reporting systems, and interdisciplinary knowledge creation. By fostering open science and promoting novel solutions, DBAR seeks to build a fully digitized path toward sustainable development for nations and communities alike, reaffirming its commitment to a more sustainable and equitable future through digital technology.

Gretchen Kalonji

Prof. Gretchen Kalonji has a long-term history of leadership in international collaborations in science for sustainable development, in innovations in science and engineering education, as well as in strategic approaches to strengthening our higher education systems. Kalonji currently serves as Special Advisor to the International Research Center for Big Data for the Sustainable Development Goals (CBAS). In reverse chronological order, she previously served as the Dean of the Sichuan University – the Hong Kong Polytechnic University Institute of Disaster Management and Reconstruction, the Assistant Director General for Natural Sciences at UNESCO, the Director for International Strategy Development for the 10-campus University of California system, as Kyocera Professor of Materials Science at the University of Washington and as Associate and Assistant Professor at MIT. Kalonji is the recipient of multiple honors and awards, including, in 2021, the China Friendship Award, which is the highest honor offered to a foreigner for contributions to the social and economic development of China.

Title: Strengthening International Collaborations on Digital Sciences for Sustainable Development

Digital sciences provide critically important tools for addressing the multiple challenges of sustainable development. To maximize the effectiveness of these tools, however, we need to greatly strengthen the quality of our international partnerships. In this talk we address strategic questions concerning the pragmatics of international partnerships, questions which have profound implications for collaborations on digital sciences. In general, a focus on unlocking the latent potential of branches of our communities that have not been sufficiently engaged to date is urgently needed. We place particular attention on our universities, which can be among the most important players in advancing the sustainability transformation, but which are often very resistant to change. We describe a central strategic approach through which our universities and research institutions can do better jobs through more effective integration of our efforts in research, education, service and international collaboration. Additional approaches which have proved effective in strengthening partnerships in science and engineering for sustainable development include: strengthening leadership from youth organizations, e.g. the U-INSPIRE Alliance and the World Young Earth Scientists Network; building collaborations with intergovernmental science programs, e.g. the Intergovernmental Hydrological Program (IHP) of UNESCO; building collaborations with professional societies, such as the World Federation of Engineering Organizations; linking with internationally agreed initiatives, e.g. the Forum on China – Africa Collaboration (FOCAC), and the Pan-African Great Green Wall initiative, and with; existing multi-sectoral partnerships, such as the High-Level Experts and Leaders Panel on Water and Disasters (HELP). Lessons drawn from these examples on the pragmatics of partnerships on digital sciences for sustainable development will be elucidated.

FANG Xiaomin

Xiaomin FANG, geomorphologist and physical geographer, Academician of the Chinese Academy of Sciences (CAS), Fellow of the Geographical Society of China and Professor at the Institute of Tibetan Plateau Research, CAS. He is also Vice Chairman of the Chinese Society for Sustainable Development and of the Chinese Association for Quaternary Research, leading the Commission on Tectonics and Climate. His research mainly focuses on tectonic uplift of the Tibetan Plateau (TP) and its impacts on geomorphology, climate, environment and ecology, using extensive knowledge and information from geomorphology, soil and sedimentology, basin analysis, paleomagnetism and environmental magnetism, geochemistry and biology. He has made remarkable contributions to the study of the timing of the TP uplift history and the evolution of the Asian monsoon-aridity and erosion-weathering and their impacts on regional and global climate, biology and ecology. He has published more than 300 high-impact academic papers in Science and Nature and their series, PNAS and other top journals, which have been cited more than 20,000 times. He has been awarded twice the Second Class Prize of the National Natural Science Award of China, respectively in 2011 and 2007, and has been selected as one of the Elsevier's Highly Cited Chinese Researchers, and one of the World's Top 2% Scientists by Stanford University. He has been acknowledged by the Reuters as among the World's Top 1000 Climate Scientists.

Title: Uplift of Tibetan Plateau and the coevolution of geomorpholoy, climate, ecological environment and biology in the Belt and Road region

The uplift of the Tibetan Plateau (TP) has reorganized the Asian geomorphology and climate, and exerted a profound impact on the evolution of the ecological environment and biodiversity in Asia and Africa and even the global climate. The exact co-evolution processes and possible driven mechanisms, however, remain unclear. In this report, we summarize our recent research results. We found that in the early Cenozoic, the central and southern TP was a lowland in the tropical monsoon region, covered by tropical-subtropical evergreen forests, whereas the northern TP and the vast Asian continent were prevailed by the subtropical high and developed a desert ecology under a dry-hot climate. At ~41 Million years (Ma), with the continued collision between the Indian and Asian plates resulting in the closure of the Tethys and Para-Tethys seas along the southern and northern rims of the TP, the central and southern TP witnessed a rapid uplift with a wide Lunpola lowland valley within it. This geomorphological change might have driven the intensification of the tropical monsoon to expand northward into the southern subtropical zone, leading the early dry-hot desert areas in the Southeast Asia ~26 ° N to turn into subtropical monsoon forests at that time. Since ~26 Ma ago, this wide valley began a rapid uplift, together with a synchronous fast rise of the Himalayas and the northern TP. This might have resulted in a reorganization of the Asian topography from the early "west lowland-east highland" to the late "west highland-east lowland" at that time. The subtropical monsoon thus expanded further northwestward into the present-day monsoon front of the temperate zone to form a modern-like monsoon. All those might have jointly led to the transition of the dry-hot northern TP and East Asia to the monsoonal forest - forest grassland and the great intensification of the Asian biodiversity at that time.

Around 15-8 Ma ago, the northeastern TP joined the rest of the TP into a rapid uplift phase, triggering a significant transition in the ecological environment and the overall acidification across the TP. Specifically, the main part of the TP witnessed a transition from forest to shrub, alpine grassland, and desert grassland, and the northeastern TP and Asia interior from forest to forest-steppe, steppe and desert. A tele-connection might thereupon be established to cause the drying in the equatorial East Africa featuring evolution of from an early forest ecology to the late Savanna. The Savanna fauna initiated in the northeastern TP might thus have been attracted to migrate to the Africa, inducing probably the evolution and appearance of the human species. Accompanied by this aridification and ecological change were also increased erosion and dust release, and desert formation and expansion in the TP and Asian interior, which ultimately gave rise to the continuous accumulation of the thick Chinese loess and a profound impact on ocean and land biodiversity and global cooling.

PUAL F. Uhlir

PAUL F. UHLIR, J.D., is a consultant in information policy and management to governments, international organizations, and universities. He was founder and Director of the Board on Research Data and Information at the U.S. National Academy of Sciences in Washington, DC in 2008-2015, and worked at the NAS in various senior capacities beginning in 1985. Before joining the NAS, he worked in the general counsel's office at the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce. He has written numerous books and articles and speaks worldwide on research data issues. For more detailed information about his professional activities, see: www.paulfuhlir.com.

Title：The Future of Big Earth Data and Artificial Intelligence

In the second decade of this century, we entered what may best be called the era of big data in all the sciences, and for remote sensing and surface-based networks, Big Earth Data. The focus properly shifted from space-based technology to the data and information technology on Earth. The United Nations Sustainable Development Goals (SDGs) and other major international and national objectives focusing on the natural and constructed environment became predominant. DBAR was formed soon after the SDGs to help implement those goals within China and internationally. Now, in the 2020s, we have the rise of generative Artificial Intelligence, or AI. It is not an overstatement to say that we are fundamentally at the dawn of a new era—a true paradigm shift—building on, but completely transformative of, the digital networks and the WorldWideWeb that began 30 years ago, and which constituted a paradigm shift in their own right. AI requires massive amounts of factually accurate data and information, like Big Earth Data, to succeed. The data-intensive sciences to which we have become accustomed will be the fuel that drives AI and its limitless applications. But if the advances we are about to make are unlimited and profound, so are the dangers posed by the technology that world leaders—especially in the development of AI technology itself—are warning us about. This presentation is mostly about those dangers and what to do about them.

LI Jianhui

Jianhui Li is the Deputy Director General of the International Research Center of Big Data for Sustainable Development Goals (CBAS) and a professor at Nanjing University. From 2019 to 2023, he served as the Vice President of the Committee on Data of the International Science Council (CODATA, ISC). Since 1999, Jianhui has been dedicated to developing data infrastructure, managing data systems, and advancing data-intensive computing. For over a decade, he has led key research initiatives in scientific data infrastructure and open data within the Chinese Academy of Sciences (CAS), contributing significantly to national, regional, and global open science efforts.

Title：Global Open Science Cloud (GOSC) Initiative for DBAR

The Global Open Science Cloud (GOSC) initiative aims to enhance the connectivity and interoperability of global research e-infrastructures, advancing scientific collaboration and driving innovation. In addressing global challenges, GOSC is committed to fostering the open sharing of data, knowledge, and resources to tackle critical issues such as climate change, disaster risk reduction, and sustainable development. In alignment with the vision of the Digital Belt and Road (DBAR) program, which leverages Earth observation and digital technologies to support sustainable development across Belt and Road regions, this report offers a comprehensive overview of GOSC's achievements. It highlights progress in policy development, technical and infrastructural advancements, and disciplinary and cross-disciplinary demonstrations, showcasing GOSC's scientific and social impact in contributing to the UN Sustainable Development Goals (SDGs). The report also outlines the next steps for deploying GOSC pilot nodes, with the goal of ensuring mutual benefits for Global South stakeholders and advancing long-term sustainable development through open science collaboration.

Amos T. Kabo-Bah

Amos T. Kabo-Bah, Dean International Relations Office, University of Energy and Natural Resources Ghana/PIFI Fellow, AIRCAS/Co-Chair Programme Board Group on Earth Observation (GEO)

Title:Digital Innovation for African ICoEs and SDG Achievement

This abstract explores the transformative approach to achieving the UN's 2030 Agenda through digital technologies and collaborative research, focusing on the role of the Group on Earth Observation (GEO) Land Degradation Neutrality (LDN) flagship helpdesks in supporting existing structures of International Centers of Excellence (ICoEs) in Africa. The initiative aims to leverage digital technologies for knowledge innovation, evidence-based reporting, and capacity building for SDG achievement. GEO LDN helpdesks, with their focus on Earth observation data for land degradation assessment, provide specialized support to African ICoEs. By integrating these helpdesks into a broader framework of digital innovation for sustainable development, the program enhances its capacity to address land degradation challenges in Africa. This collaboration strengthens the ability to deliver timely and consistent Earth observation data for SDG monitoring, aligning with the goal of developing a global SDG satellite observation constellation. The synergy between digital innovation initiatives and GEO LDN helpdesks promises to accelerate progress towards SDG achievement in Africa by combining cutting-edge technology with targeted support for land degradation neutrality. This approach empowers African ICoEs to lead in sustainable development practices through advanced digital tools and Earth observation techniques.

Massimo Menenti

Prof.dr.dott. Massimo Menenti is an internationally renowned scientist in the fields of earth observation and global terrestrial water cycle. He held senior research positions in The Netherlands, France, USA, China and Italy, received research awards in The Netherlands, France, USA and China and led large projects with participants from Europe, Asia, America and Africa. His best known achievements have been attained in the aspects of surface parameter retrievals from remote sensing, remote sensing-based evapotranspiration (ET) estimation, time series analysis of remote sensing data and the application of remote sensing technology in hydrology and climate models. Prof. Menenti initiated the use of RS to assess and monitor crop water requirements and irrigation performance in the late ‘80s. He is one of the earliest researchers in using laser technology to measure surface aerodynamic roughness. He initiated the use of time series analysis of satellite data. He presented the surface energy balance index (SEBI) theory for ET estimation, which is the prototype of the following S-SEBI, SEBS and SEBAL models.

Title：From Monitoring to Mitigate Natural Risks: A Gap Analysis

The last ten years have seen an impressive growth in global data assets documenting the evolving conditions of the Earth system and of its elements. Information extracted from such ever-growing data streams has triggered a likewise impressive growth in knowledge and understanding on land surface processes. A particularly relevant benefit of such progress has been the capability of quasi-real-time monitoring of the impacts and assessment of risks associated with natural hazards.

This capability offers, however, limited help by itself towards mitigation of impacts and risks. The body-of-knowledge accumulated through the continuous observations provides a solid foundation, however, to act on the Earth system, particularly the land-surface, to fill this gap.

Likewise, the growth in our monitoring capabilities, the last few years have seen the emergence of Nature Based Solutions (NBS) to mitigate impacts and risks associated with natural hazards. NBS are local interventions on elements of the Earth system aiming at triggering beneficial changes towards risk mitigation. Typically, real-life risk mitigation requires the deployment of a system of NBS in a large area. The design and validation of NBS prototypes and the deployment and evaluation of a full NBS system require progress in science and the availability of an efficient combination of digital tools. The latter include: solid experimental knowledge on land surface processes in the earth system; spatially and temporally continuous observations of the state of the Earth; accurate synthesis of knowledge in earth system models; reliable predictions by numerical experiments on scenarios and interventions, which add up to digital science for sustainable development.

The presentation will articulate this argument with the support of results and achievements of two research programs: DBAR(CAS) and OPERANDUM (EU).

04 Programme

DBAR 2024 at a Glance									
	October 21st (Monday)	October 22nd (Tuesday)	October 23rd (Wednesday)				October 24th (Thursday)			
09:00-10:30	/	2024 DBAR STM (invited)	Opening Ceremony SDGSAT-1 Exhibition Keynote Session				AGRI	COAST	DATA (I)	Side Event (Water-Land-Energy Nexus)
11:00-12:30							HiMAC (II)	HERITAGE	DATA (II)	
12:30-13:30	Break									
13:30-15:00	Check-in and Onsite Registration	Special Session (invited)	DISASTER (I)	WATER	ENVI	HiMAC (I)	Invited Presentation Closing Ceremony			
15:30-17:00			DISASTER (II)	URBAN	CADA	Side Event (GEOCRI)	Adjourn			

Programme on October 22nd, 2024

22 Oct 2024 (Tuesday)

2024 DBAR Science Team Meeting

Time: **08:30-12:00 (Beijing local time), 22nd Oct., 2024 (Tuesday)**

Digital Belt and Road Program is an international science program that seeks to harness the potential of Big Earth Data to facilitate regional and global progress towards SDGs. By leveraging innovative data resources, DBAR is working to developing data-driven methods and science-informed policies to address regional and global sustainability challenges. Therefore, DBAR actively seeks partnerships across various scales, from local to regional, engaging both the public and private sectors.

DBAR currently has nine working group focusing on specific foci related to different SDGs and nine International Centers of Excellences (ICoEs) in US, Europe, Africa and Asia. Given the complex nature of DBAR's operations and the diverse stakeholders involved, the DBAR Science Team Meeting (STM) provides an essential platform for coordinating program efforts. STM is organized annually, to allow representatives from different DBAR operations and group to share their progress and future plans related to research, capacity development, and local, regional, and international cooperation.

This collaborative environment enables working groups and ICoEs to discuss ongoing efforts and strategize for enhanced impact. Additionally, the STM serves as a forum for deliberating new proposals and ideas, allowing stakeholders to provide feedback and suggest improvements to DBAR operations. By facilitating efficient coordination and cooperation, the STM ensures that the initiative remains adaptable to emerging needs and continues to advance sustainable development efforts globally.

The STM also provides an opportunity for the Science Committee, the governing body of DBAR, to convenes a closed-door session to review important actions and make critical decisions that shape the strategic direction and ensure the operational efficiency of the program.

The year 2024 marks the 8th STM held annually since 2017, underscoring the program's commitment to ongoing scientific research, collaboration and progress.

The 2nd Special Session on Digital Sciences for Sustainable Development (invited)

Time: **14:00-17:10 (Beijing local time), 22nd Oct., 2024 (Tuesday)**

The UN's Sustainable Development Goals (SDGs) present an ambitious framework for addressing the complex challenges of sustainable development. However, despite significant progress, persistent issues and emerging challenges continue to hinder our collective efforts. There is an urgent need to promote additional knowledge, tools, report and mechanisms to link stakeholders from all levels to provide solutions to these enduring problems and adapt strategies in real-time. Now we call for a combination of digital technologies, earth and environment science, and science of society and economy, named Digital Sciences for sustainable development, as a set of resolutions on the sustainable development to reinvigorate the confidence of various sustainable development stakeholders.

The initial meeting (the 1st) on Digital Sciences for Sustainable Development was held as a special session at the 4th International Forum on Big Data for Sustainable Development Goals (FBAS 2024) in Beijing, China, 7th September, 2024. The special session was reported on the concept of the Digital Sciences for Sustainable Development by Prof. Guo Huadong and discussed key challenges and strategies for achieving the SDGs, focusing on the complexity of SDG interactions, and the role of Big Data and AI. It emphasized the need for basic sciences, digital tools, interdisciplinary collaboration, international community involvement, stakeholder engagement, and education (capacity building) to drive effective sustainability transitions, while also highlighting the importance of cooperation, transparency, and understanding human behavior in these efforts.

As an international programme, the DBAR has been developing for years, and it achieves a great monument for the digital sciences for the SDGs along with the B&R regions. Now, the world, not only the B&R regions, reaches its mid-term of UN SDGs, it is the time to fill the gaps we met in the past. This session will focus on the digital sciences for sustainable development, integrating Earth sciences, Data sciences, digital technologies, and interdisciplinary collaboration. The purpose of this discussion is to further explore the digital transformation required for implementing sustainable development, as well as to engage in forward-looking discussions aligned with the UN's Sustainable Development Goals for 2030.

Programme on October 23rd, 2024

08:00-09:00	On-site registration							
09:00-09:45	Opening Ceremony SDGSAT-1 Exhibition							
09:45-10:10	Break							
10:10-11:30	Keynote Session							
11:30-13:30	Break							
13:30-15:00	Parallel Session	DBAR-DISATER (I): Advances in Water-Related Disaster Risk Reduction and Resilience	DBAR-WATER: Water and Land Management for Sustainable Development	DBAR-ENVI: Environmental Change Assessment and Sustainable Development	DBAR-HIMAC (I): Earth Observations for Snow and Ice			
15:00-15:30	Break							
15:30-17:00	Parallel Session	DBAR-DISATER (II): Digital Technologies for Disaster Risk Reduction and Sustainable Development	DBAR-URBAN: SDGs for Achieving Urban Sustainability	CARIC-CADA: Data and SDG Achieving Using Big Earth Data in ASEAN	Side Event	Side Event (GEOCRI)		

23 Oct 2024 (Wednesday)

On-site registration

08:00-09:00	Venue: International Academic Exchange Center Floor 1, Rui Qing Hall

Opening Ceremony

09:00-09:45	Venue: International Academic Exchange, Center Floor 1, Rui Qing Hall **Opening Remarks & Events**

SDGSAT-1 Image Exhibition

09:45-10:10	Venue: International Academic Exchange, Center Floor 1, Out of Rui Qing Hall

Keynote Session

	Keynote Presentation **Chair: JIA Gensuo,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
10:10-10:30	**Digital Technology for Belt and Road Sustainability** **GUO Huadong,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
10:30-10:50	**Strengthening International Collaborations on Digital Sciences for Sustainable Development** **Gretchen Kalonji,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
10:50-11:10	**Uplift of Tibetan Plateau and the coevolution of geomorpholoy, climate, ecological environment and biology in the Belt and Road region** **FANG Xiaomin,** Institute of Tibetan Plateau Research, CAS, China
11:10-11:30	**From Monitoring to Mitigate Natural Risks: A Gap Analysis** **Massimo Menenti,** Delft University of Technology, the Netherlands

Parallel Sessions I

DBAR-DISASTER（I）：Advances in Water-Related Disaster Risk Reduction and Resilience

Time: 13:30-15:00, October 23rd, 2024 ***Venue:*** Conference Room 108, Floor 1, East of Nan Yong

Co-Chair	***ZHOU Li,*** Sichuan University, China
	Gretchen Kalonji, International Research Center of Big Data for Sustainable Development Goals (CBAS), China
	ZHAO Wenpeng, Yangzhou University, China
Introduction	This session aims to foster dialogue on the latest advancements in understanding, predicting, and mitigating water-related disasters, including floods, storm surges, and flash floods. It will explore the role of big data, digital earth technologies, and AI-driven models in enhancing early warning systems and improving disaster preparedness. The session invites research that integrates hydrological modeling, flood forecasting, risk assessment, and disaster management strategies, particularly in the context of climate change impacts. By leveraging case studies from different regions, especially data-scarce and high-altitude areas, the session will highlight cross-disciplinary approaches to building resilience in vulnerable communities and ecosystems. Contributions discussing the fusion of physical-based and AI-based models for disaster forecasting and management are especially welcome.
13:30-13:45	Title: Assessing the climate change impact on flood over Japan using 150-m RRI model and 5-km d4PDF (online) **CHEN Jiachao,** Kyoto University, Japan
13:45-14:00	Title: The Non-Stationarity of Extreme Rainfalls in The Greater Bay Area Revealed by Multi-Source Merged Gridded Datasets (online) **YAN Haochen,** The University of Hong Kong, China
14:00-14:20	Title: High-Precision Rainfall Prediction and AI-Based Hydrological Simulation Using Multi-Source Data and Deep Learning to Enhance Flood Early Warning Efficiency **ZHAO Wenpeng,** Yangzhou University, China
14:20-14:40	Title: Evaluations of Different Precipitation Products' Performances and Their Effectiveness in Disaster Warning Across the Tibetan Plateau **ZHOU Li,** Sichuan University, China
14:40-15:00	Title: Accuracy Evaluation of Satellite Precipitation Products on the Eastern Edge of the Qinghai Tibet Plateau **ZHOU Chun,** Sichuan University, China

DBAR-WATER: Water and Land Management for Sustainable Development

Time: 13:30-15:00, October 23rd, 2024 ***Venue:*** Conference Room 112, Floor 1, East of Nan Yong

Co-Chair	***JIA Li,*** Aerospace Information Research Institute (AIR), CAS, China
	Kamal LABBASSI, Université Chouaib Doukkali, Morroco
	Amos KABO-BAH, University of Energy and Natural Resources, Ghana
Introduction	In the context of global climate change, population growth, and rapid socioeconomic development, the contradiction between the supply and demand of water and land resources has become increasingly prominent, posing a severe threat to realizing sustainable development Goals. The rise of digital science and emerging technologies has provided an unprecedented opportunity to solve this problem. This conference invites domestic and foreign experts and scholars to conduct in-depth exchanges and discussions on the latest technological achievements, innovative methods, broad application prospects, and current bottlenecks in water resources and land management. The exchanges and discussions are expected to promote the in-depth integration and application of digital technology in the accurate management, efficient utilization, monitoring, and evaluation of water and land resources. Scientific support and strategies will be provided to maintain the sustainable utilization of water and land resources.
13:30-13:45	Invited Title: Water Potential Budgets Infrastructure and Research Outlook in Ghana **Amos KABO-BAH,** University of Energy and Natural Resources, Ghana
13:45-14:00	Invited Title: Mapping Frost risk by retrieving soil damping depth using time series of satellite LST **Hamid Reza GHAFARIAN MALAMIRI,** Yazd University, Iran
14:00-14:15	Title: The synergy and trade-offs among water-food-ecology SDGs in China **YU Junjie, Min CAO,** Nanjing Normal University, China
14:15-14:30	Title: Assessment of Changes in Global Cropland Water-use Efficiency from 2001 to 2020 **JIANG Min,** Aerospace Information Research Institute (AIR), CAS, China
14:30-14:45	Title: Exploring the priority development Path of water-energy-food-ecosystem nexus in China's coastal areas from the perspective of land-sea integration **YUAN Zifeng, CAO Min,** Nanjing Normal University, China
14:45-15:00	Title: A Comprehensive Approach to Integrating Multi-Source Satellite Data for Improved Land Surface Monitoring **Seyedkarim AFSHARIPOUR, JIA Li, Massimo MENENTI,** Aerospace Information Research Institute (AIR), CAS, China

DBAR-ENVI : Environmental Change Assessment and Sustainable Development

Time: 13:30-15:00, October 23rd, 2024 ***Venue:*** Conference Room 123, Floor 1, East of Nan Yong

Co-Chair	***LI Xinwu,*** Aerospace Information Research Institute (AIR), CAS, China
	JIA Gensuo, Institute of Atmospheric Physics, CAS, China
Introduction	Environmental change monitoring is crucial for sustainable development because it provides timely and accurate data on the health of Earth's ecosystems. By monitoring environmental changes, governments and decision-makers can assess the impact of human activities on the natural environment, as well as help predict and address potential ecological crises. It supports efforts to protect biodiversity, reduce carbon emissions, and achieve sustainable resource utilization. In this session, we will focus on the application of ecological and environmental monitoring in sustainable development, exploring the opportunities and challenges it presents.
13:30-13:45	Invited Title: Environmental factors that produced an extraordinary 1-in-100 year tropical cyclone in the Northern Arabian Sea (Cyclone Shaheen, 2021) (online) James TERRY, Zayed University, USA
13:45-14:00	Invited Title: Big Data for Riparian Ecosystem Condition Assessment Considering the Impaired floodplain in Congaree Watershed WANG Cuizhen, University of South Carolina, USA
14:00-14:15	Title:A New Way of Characterizing Glacier Surge Behavior – A Case Study in the Karakoram LV Mingyang, Nanjing University, China
14:15-14:30	Title:The ultimate macroecological effect of massive environmental restorations? Case study suggests not asserting but modeling LIN Yi, Peking University, China
14:30-14:45	Title:Debris-covered glaciers mapping based on machine learning and multi-source satellite images over Eastern Pamir Aamir FEROZ, International Research Center of Big Data for Sustainable Development Goals (CBAS), China
14:45-15:00	Title:Monitoring Vegetation Tipping Elements with Moon-based SAR: Characteristics and Impacts of Unstable Scattering GENG Yaqi, Aerospace Information Research Institute (AIR), CAS

DBAR-HiMAC(I): Earth Observations for Snow and Ice

Time: 13:30-15:00, October 23rd, 2024 ***Venue:*** Conference Room 124, Floor 1, East of Nan Yong

Co-Chair	***Matti Leppäranta,*** University of Helsinki, Finland
	LV Mingyang, Nanjing University, China
Introduction	The Arctic and High Mountain Cold Regions, as important components of the cryosphere, are experiencing significant ice and snow changes in the context of global climate change. These regions are not only sensitive areas and amplifiers of the effects of climate change, but also important regulators of global hydrological, ecological and socio-economic systems. Climate warming and intensified human activities are accelerating the retreat of snow and ice systems, with far-reaching impacts on regional climate, water resources, ecosystems and socio-economics. Understanding these changes is critical to the global climate system and to sustainable development. This conference will focus on snow and ice dynamics in the Arctic and High Mountain Cold Regions and their coupling mechanisms with climate change. The conference will bring together international experts and scholars in the field of cryosphere research to share innovative practices and research results in snow and ice change monitoring, remote sensing technology applications, and emerging technologies for climate action. Through in-depth discussions and exchanges, we expect to promote the further application of digital technology and environmental big data in cryosphere research, improve the understanding and prediction of snow and ice changes, and provide strong scientific support for the sustainable development and global climate action in the Arctic and High Mountain Cold Regions.
13:30-13:45	Invited Title: Evolution of lake ice thickness and structure during the melting period Matti Leppäranta, University of Helsinki, Finland
13:45-14:00	Invited Title: Lake and Reservoir Ice Regimes and Environmental Impacts in the Tibtan Plateau: Field Investigations, Priliminary Results, and Future Efforts LI Zhijun, Dalian University of Technology, China
14:00-14:12	Title: Physical Mechanism and Parameterization scheme for Correcting Radar Wave Velocity in Yellow River Ice with Air Temperature and Ice Thickness LI Chunjiang, Inner Mongolia University of Science & Technology, China

14:12-14:20	**Title: Thermokarst landscapes monitoring of the Qinghai-Tibet Plateau based on multi-source remote sensing data** **LOU Peiqing,** Northwest Institute of Eco-Environment and Resources, CAS, China
14:20-14:28	**Title: High-spatiotemporal-resolution monitoring of lake ice in cold regions of the Northern Hemisphere using MODIS data from 2002-2024** **JIANG Zhengxin,** Aerospace Information Research Institute (AIR), CAS, China
14:28-14:36	**Title: High spatial and temporal resolution multi-source remote sensing data for detecting sea ice motion in the Arctic sea ice edge zone** **YU Shuwen,** Aerospace Information Research Institute (AIR), CAS, China
14:36-14:48	**Title: Drone-based observations of the Arctic sea-ice albedo during the freeze-up period (online)** **Roberta Pirazzini,** Finnish Meteorological Institute, Finland
14:48-15:00	**Title: Shipping and shipping-associated atmospheric emissions along the Northern Sea Route (online)** **LV Jinmei,** University of Tromsø – The Arctic University of Norway, Norway

Parallel Sessions II

DBAR-DISASTER (II): Digital Technologies for Disaster Risk Reduction and Sustainable Development

Time: **15:30-17:15, October 23rd, 2024** ***Venue:*** **Conference Room 108, Floor 1, East of Nan Yong**

Co-Chair	***CHEN Fang,*** **International Research Center of Big Data for Sustainable Development Goals (CBAS), China; Aerospace Information Research Institute (AIR), CAS, China**
	Rajib SHAW, **Keio University, Japan**
	WANG Lei, **International Research Center of Big Data for Sustainable Development Goals (CBAS), China; Aerospace Information Research Institute (AIR), CAS, China**
Introduction	**The session will delve into the application of digital technology at every stage of the disaster management cycle, particularly focusing on predictive models that analyze extensive data sets to anticipate disasters and evaluate their potential effects. This information is vital for devising more effective mitigation strategies. By convening a multidisciplinary group of experts, this session seeks to identify innovative ways to employ digital technologies in disaster risk reduction, share insights on best practices, and discuss potential avenues for future collaboration. By combining our collective knowledge and resources, we aim to foster communities that are resilient and robust in the face of natural disasters, thereby contributing to the broader goal of sustainable development through enhanced disaster preparedness and response mechanisms.**
15:30-15:45	**Title: Integrated Observation of Ground Subsidence Using Aerial, Space, and Ground-Based Methods - A Review** **XUE Yong,** Nanjing University of Information Science & Technology, China
15:45-16:00	**Title: Identification and Susceptibility Assessment of Slow-Moving Landslides along the China-Pakistan Karakoram Highway** **BAI Shibiao,** Nanjing Normal University, China
16:00-16:15	**Title: Observing Oil Leakage and Gas Blowout Induced Changes in Upper Assam, India using Multisensors Satellite Datasets: A Challenge to Achieve Sustainable Development Goals** **Biswajit Nath,** University of Chittagong, Bangladesh
16:15-16:30	**Title: Earthquake Prevention and Disaster Reduction: Building Urban Safety Barriers** **WU Weiwei,** Chengdu Institute of the Tibetan Plateau Earthquake Research, China Earthquake Administration, China; Sichuan Earthquake Agency, China

16:30-16:45	**Title: Agricultural Land Use Change and Rice Crop's Growth, Damage, and Loss Assessment in Onshore Coastal Regions Due to Tropical Cyclones in Bangladesh Delta Using Satellite Remote Sensing (online)** **Md SHAMSUZZOHA,** University of Tsukuba, Japan; Patuakhali Science and Technology University, Bangladesh
16:45-17:00	**Title: Quantitatively Modeling Disaster Chain Process under Dynamic Changing Environment within Earthquake Stricken Area** **LI Congrong,** Institute of Geographic Sciences and Natural Resources Research, CAS, China
17:00-17:15	**Title: Identification and Mapping of Multi-Type Flood Hotspots Using an Ensemble Technique in Transboundary of Kabul River Basin** **Zahid Ur RAHMAN,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China

DBAR-URBAN: SDGs for Achieving Urban Sustainability

Time: **15:30-17:15, October 23rd, 2024** ***Venue:*** **Conference Room 112, Floor 1, East of Nan Yong**

Co-Chair	***LU Linlin,*** **International Research Center of Big Data for Sustainable Development Goals (CBAS), China**
	Vilas Nitivattananon, **Asian Institute of Technology, Thailand**
	BAN Yifang, **KTH Royal Institute of Technology, Sweden**
	Martino PESARESI, **Joint Research Centre, European Commission, Italy**
Introduction	**The monitoring and evaluation technology based on spatiotemporal big data provides a new perspective and innovative solutions for urban sustainable development. Through the integration of multi-source data such as satellite remote sensing data and sensor network data, it is possible to achieve high-frequency monitoring of environmental indicators such as urban air quality, water quality, and soil pollution. These data not only provide real-time monitoring data for environmental protection departments, but also provide important basis for the adjustment of urban planning and environmental policies. Secondly, spatiotemporal big data technology also provides support for the monitoring and evaluation of urban economic and social development. By integrating information such as economic statistical data, traffic flow data, and social media data, a comprehensive analysis of urban economic growth, employment status, and traffic congestion can be carried out, providing a scientific basis for urban economic policies and social development plans. This technology can help cities discover problems, formulate policies, and continuously adjust and improve in practice to achieve sustainable development goals.**
15:30-15:45	**Title: Development Pathways for Urban Regions: A Case of Transport and Energy Infrastructure in the Extended Bangkok Metropolitan Region** **Vilas Nitivattananon,** Asian Institute of Technology, Thailand
15:45-16:00	**Title: Assessing fine-scale heat health risk and the role of green infrastructure based on remote sensing and socioeconomic data** **YAO Yu,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China

16:00-16:15	**Title: Impact of Human Activities on Ecosystem Services in National Grassland Nature Parks:A Case Study of Maodeng Pasture, China** **ZHANG Wanqian,** Suzhou University of Science and Technology, China
16:15-16:30	**Title: Advancing Urban Sustainability: The Effects of Urban Form on Travel-related Carbon Dioxide Emissions through Modal Choice as Mediator** **Maricel Dalde,** Asian Institute of Technology, China
16:30-16:45	**Title: Multi-temporal remote sensing analysis of Banana crop – Uthal Town** **Salma Hamza,** Bahria University Karachi Campus, Pakistan
16:45-17:00	**Title: Investigating urban heat-related health risks related to local climate zones** **Muhammad Fahad Baqa,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
17:00-17:15	**Title:Enhancing Urban Building Stability Assessment through Satellite InSAR Interferometry: Contributions toward SDG 11** **YANG Mengshi,** Yunnan University, China

DBAR-CADA: Data and SDG Achieving Using Big Earth Data in ASEAN

Time: **15:30-17:40, October 23rd, 2024** ***Venue:*** **Conference Room 123, Floor 1, East of Nan Yong**

Co-Chair	***XUE Wenchao,*** **Asian Institute of Technology, Thailand**
	JIA Guoqiang, **International Research Center of Big Data for Sustainable Development Goals (CBAS), China**
	DU Xiaoping, **International Research Center of Big Data for Sustainable Development Goals (CBAS), China**
Introduction	**China and ASEAN are interconnected with facing many challenges such as natural disaster prevention, agricultural development, water resources management, marine and coastal zone utilization, and urban development, and are typical regions for the implementation and evaluation of the United Nations 2030 Agenda for Sustainable Development. In 2020, the China-ASEAN Regional Innovation Center for Big Earth Data (CARIC) was launched as a regional center of Digital Belt and Road (DBAR) Program. In 2021, the project "China-ASEAN Big Earth Data Platform and Applications (CADA)" was funded. The session will focus on regional sustainable development applications, use big Earth data to promote technology and data research and development for the Sustainable Development Goals (SDGs), and strengthen the monitoring and evaluation of sustainable development goals to support regional scientific decision-making, management and emergency services.**
15:30-15:45	**Invited Title: Hourly Fine Particulate Matter Concentration over Thailand using Aerosol Optical Depth** **Ekbordin Winiikul,** Asian Institute of Technology, Thailand
15:45-16:00	**Invited Title:Progress on China-ASEAN Geosciences Information Big Data Platform** **ZHANG Hong,** Chengdu Geological Survey Center, China Geological Survey, China
16:00-16:15	**Title: Progress on China-ASEAN Big Earth Data Computing and Analysis System** **DU Xiaoping,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
16:15-16:30	**Title: Application of Open-Source Earth Observation Data in tracking, and assessing SDG 15 "Life on Land" in Thailand from 2000 to 2020** **XUE Wenchao, Roshan Bhandari,** Asian Institute of Technology, Thailand
16:30-16:45	**Title: The Analysis of Spatial and Temporal Distribution of High Energy-Consuming Industries in ASEAN-10 Countries from 2012 to 2021** **DONG Simeng,** Aerospace Information Research Institute (AIR), CAS, China
16:45-17:00	**Title: Remote-sensing-based monitoring of surface water and lake tidal flats variations** **JIA Guoqiang,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China

17:00-17:10	**Title:Heritage Buildings as enablers for Sustainable Living** **Charles Galdies,** Institute of Earth Systems, University of Malta, Malta
17:10-17:20	**Title:Understanding the Pathway of Social Capital for Empowering Garo Women in Agriculture** **Md. Anwarul Abedin,** Bangladesh Agricultural University, Bangladesh
17:20-17:30	**Title:Remote sensing data as a potential resource for estimating indicators within the Water-Food-Ecology nexus in the Casablanca-Rabat region along the Moroccan Atlantic coast** **Yassine labbassi,** Hassan II University, Casablanca, Morocco.
17:30-17:40	**Title:Global BECCS Potential Under Sustainable Water Management Condition** **Zhipin Ai,** Institute of geographic sciences and natural resource reserch, CAS, China

Side Event-GEOCRI

HiMAC WG and GEOCRI for Future Earth Intelligence

Time: **15:30-17:30, October 23rd, 2024** ***Venue:*** **Conference Room 124, Floor 1, East of Nan Yong**

Co-Chair	**Qiu Yubao,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
	Massimo Menenti, Delft University of Technology, the Netherlands

Post2025 GEO for Earth Intelligence

- **Amos T. Kabo-Bah,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
- **YANG Jian,** Shanghai Institutes for International Studies, China
- **Thorsten Jelinek,** Taihe Institute, Germany

Perspective and Projects for observations and applications

- **Hiroyuki Enomoto,** National Institute of Polar Research, Japan
- **Andrea Marinoni,** University of Tromsø – The Arctic University of Norway, Norway
- **Hanna K. Lappalainen,** University of Helsinki, Finland
- **DUAN Fengjun,** The Canon Institute for Global Studies, Japan
- **WU Tonghua,** Northwest Institute of Eco-Environment and Resources, CAS, China

Report from the International Workshops, and Programme

- **Massimo Menenti,** Delft University of Technology, the Netherlands
- **LI Lanhai,** Xinjiang Institute of Ecology and Geography, CAS, China
- **XU Qingchao,** University of Chinese Academy of Sciences, China

Discussion on the GEO CRI for Post 2025 Programme

- **QIU Yubao,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
- **Massimo Menenti,** Delft University of Technology, the Netherlands

Programme on October 24th, 2024

09:00-10:30	10:30-11:00	11:00-12:30	12:30-13:30	13:30-14:30	14:30-15:00
Side Event		Side Event (Water-Land-Energy Nexus)			
Parallel Session		Parallel Session			
DBAR-AGRI: Agricultural Monitoring for Food Security and Sustainable Development		DBAR-HIMAC (II): Digital Environment for Cold Regions			
DBAR-COAST: Sustainable Development and Management of Coast and Ocean		DBAR-HERITAGE: Digital Protection of Natural and Cultural Heritage			
DATA (I): Sharing for Sustainable Development Goals		DATA (II): Open Science and Open Data Policies			
	Break		Break	Invited Presentation	Closing Ceremony

Parallel Sessions I

DBAR-AGRI: Agricultural Monitoring for Food Security and Sustainable Development

Time: 09:00-10:30, October 24th, 2024 **Venue:** Conference Room 108, Floor 1, East of Nan Yong

Co-Chair	***Shukri Ahmed,*** **Office of Emergencies and Resilience (FAO)**
	ZENG Hongwei, **Aerospace Information Research Institute (AIR), CAS, China**
Introduction	**In the face of a growing global population and the increasing frequency of extreme weather events driven by climate change, bolstering the resilience of agricultural systems to such disasters and enhancing food production capacity are critical to realizing the United Nations' Sustainable Development Goal of "Zero Hunger." The rapid advancement of Earth observation and artificial intelligence technologies presents unprecedented opportunities to acquire timely crop production data, assess the impacts of natural disasters on food systems, and inform food security policy decisions. This conference seeks to convene leading experts and scholars from around the world to engage in in-depth discussions on cutting-edge technological innovations, capacity-building strategies, and the current challenges in achieving sustainable agricultural monitoring and food security. Through these exchanges, the aim is to drive the integration of Earth observation and AI technologies into agricultural monitoring practices, offering robust scientific support and actionable strategies to help Belt and Road countries meet the Zero Hunger goal.**
09:00-09:15	**Title: Agriculture Monitoring for Food Security and Sustainable Development Digital agriculture solutions to leapfrog adaptation pathways** **Shukri Ahmed,** Office of Emergencies and Resilience (FAO)
09:15-09:30	**Title: Investigations on sustainable tea production paths of developing countries in Asia and Africa (online)** **QIU Bingwen,** Fuzhou University, China
09:30-09:45	**Title:Climate change fortes risk towards food security and sustainable development: Spatial temporal Intents, Punjab Pakistan** **Muhammad Waqar Yasin,** PMAS-Arid Agriculture University Rawalpindi, Pakistan
09:45-10:00	**Title: Cropland Changes and Driving Force Analysis in Zambezi River Basin since 1980s** **ZHANG Miao,** Aerospace Information Research Institute (AIR), CAS, China
10:00-10:15	**Title: Crop type classification: from post-harvest to early-season mapping (online)** **YOU Nanshan,** Institute of Geographic Sciences and Natural Resources Research, CAS, China
10:15-10:30	**Title:Online Presentation:Modeling crop canopy photosynthesis and its potential applications (online)** **ZHAO Honglong,** Institute of Computing Technology, CAS, China

DBAR-COAST: Sustainable Development and Management of Coast and Ocean

Time: **09:00-10:20, October 24th, 2024** ***Venue:*** **Conference Room 112, Floor 1, East of Nan Yong**

Co-Chair	***ZHANG Li,*** **International Research Center of Big Data for Sustainable Development Goals (CBAS), China**
	Dewayany Sutrisno, **National Research and Innovation Agency, Indonesia**
	Tanjil Sowgat, **Khulna University, Bangladesh**
Introduction	**The United Nations has set a Sustainable Development Goal (SDG) 14, which aims to conserve and sustainably use the oceans, seas, and marine resources for sustainable development. The objective of this goal is to protect and restore ecosystems, conserve coastal and marine areas, increase the economic benefits derived from sustainable use of marine resources, and enhance scientific knowledge, research, and technology for ocean health. Digital technology can play a crucial role in achieving these targets, enhancing our ability to detect and mitigate the impacts of climate change, pollution, and coastal development and advancing proactive conservation efforts in alignment with SDG-14. Moreover, leveraging big data analytics and knowledge extraction techniques provides a comprehensive understanding of the complex interconnections within coastal ecosystems. By integrating these insights into decision-making processes, stakeholders can implement adaptive management strategies that promote ecosystem resilience and the sustainable utilization of marine resources.**
09:00-09:10	**Title: Monitoring Coral Reefs: Assessing An Ecosystem At Risk-A Review Of Rapid Mapping Techniques** **Dewayany Sutrisno,** National Research and Innovation Agency, Indonesia
09:10-09:20	**Title: Towards a More Sustainable Coastal Environment: How Big Earth Data Contributes the SDG14** **CHEN Bowei,** International Research Center of Big Data for Sustainable Development Goals (CBAS), China
09:20-09:30	**Title: Assessment of Coastal Vulnerability in the Era of Sea Level Rise Along Coast of Bangladesh to Promote Sustainable Development** **Riffat Mahmood,** Jagannath University, Bangladesh
09:30-09:40	**Title: Spatio-Temporal Monitoring of Mangrove Cover Extent and Health in Pakistan Using Satellite Imagery** **Syed Ahmed Raza,** Aerospace Information Research Institute (AIR), CAS, China
09:40-09:50	**Title: Vulnerabilities of Marginal Coastal Communities: The Role of Large-Scale Qualitative Data for Delivering Sustainable Development** **Tanjil Sowgat,** Khulna University, Bangladesh

09:50-10:00	**Title: Cyclone Surge Inundation Susceptibility Assessment through Geospatial Techniques and Machine Learning Algorithms: A Case Study from a Mangrove Protected Area on the Bangladesh Coast** **Abdullah Al Mamun,** Aerospace Information Research Institute (AIR), CAS, China
10:00-10:10	**Title: Analysis of fluctuations in vegetation dynamic over Africa using satellite data of solar-induced chlorophyll fluorescence** **JEANINE UMUHOZA,** Xinjiang Institute of Ecology and Geography, CAS, China
10:10-10:20	**Title: An Object-Oriented Fine Extraction Algorithm for Aquaculture Ponds** **HU Yingwen,** Aerospace Information Research Institute (AIR), CAS, China

Parallel Sessions II

DBAR-HiMAC (II): Digital Environment for Cold Regions

Time: **11:00-12:38, October 24th, 2024** ***Venue:*** **Conference Room 108, Floor 1, East of Nan Yong**

Co-Chair	***LI Lanhai,*** **Xinjiang Institute of Ecology and Geography, CAS, China**
	Joni KUJANSUU, **University of Helsinki, Finland**
Introduction	**The Arctic and High Mountain Cold Regions, which are acutely sensitive to global climate change, are increasingly becoming a focus of climate change research. In the context of global warming and carbon neutrality, it's vital to investigate how the ecological environment and climate conditions interact. Additionally, understanding the impact of climate change on the carbon budget in cold regions is also essential. These knowledges are crucial for tackling sustainable development goals and gaining a deeper understanding of the global carbon dynamic. The advent of cutting-edge digital sciences and technologies, including artificial intelligence, real-time monitoring network, and satellite remote sensing, has provided us with new ways to understand these intricate relationships. This section aims to bring together a diverse array of experts and scholars from around the world. They will have detailed talks and share thoughts on the latest findings, groundbreaking research methodologies, broad application prospects, and current challenges in digital environmental for cold regions. These exchanges and discussions are expected to catalyze the use of digital technologies in studying environmental and climatic changes in cold regions, providing solid scientific support and strategies for promoting sustainable development in these regions.**
11:00-11:15	**Invited Title: Establishment of Eurasian Permafrost Observation Transect: Progress & Perspective** **WU Tonghua,** Northwest Institute of Eco-Environment and Resources, CAS, China
11:15-11:30	**Invited Title: Changing Energy Landscape in Arctic Nations** **DUAN Fengjun,** The Canon Institute for Global Studies, Japan
11:30-11:42	**Title: Research On atmospheric processes: background and case studies** **Joni Kujansuu,** University of Helsinki, Finland

11:42-11:54	**Title: The behavior of monthly in situ soil thermal conductivity at different land surfaces in the northern Qinghai-Tibet Plateau, China** **LI Ren,** Northwest Institute of Eco-Environment and Resources, CAS, China
11:54-12:06	**Title: Distribution characterization of MPs and DOM in ice-covered season in a saline-alkaline Lake in Daihai** **YANG Fang,** Chinese Research Academy of Environmental Sciences, China
12:06-12:14	**Title: Detection and characteristics of freeze-thaw changes in cold deserts of China** **ZHANG Kun,** Aerospace Information Research Institute (AIR), CAS, China
12:14-12:22	**Title: The Effects of Gas Flaring on Vegetation in Arctic Area** **YAO Peng,** Aerospace Information Research Institute (AIR), CAS, China
12:22-12:30	**Title: Vector dataset of the river and lake for High Mountain Asia in 2020** **WANG Zhaocheng,** Aerospace Information Research Institute (AIR), CAS, China
12:30-12:38	**Title: High-resolution monitoring of 12-day surface water changes in the Kolyma Basin** **YAO Deke,** Aerospace Information Research Institute (AIR), CAS, China

DBAR-HERITAGE: Digital Protection of Natural and Cultural Heritage

Time: **11:00-12:30, October 24th, 2024** ***Venue:*** **Conference Room 112, Floor 1, East of Nan Yong**

Co-Chair	***LUO Lei,*** **International Centre on Space Technologies for Natural and Cultural Heritage under the auspices of UNESCO (HIST)**
	LASAPONARA Rosa, **Institute of Methodologies for Environmental Analysis of the National Research Council of Italy (CNR-IMAA)**
Introduction	**Natural and cultural heritage are precious treasures of human history and the life of the earth. Protecting these heritages not only helps maintain ecological balance and protect biodiversity, but also promotes cultural exchange and social harmony. The session will invite experts and representatives from countries such as China, Europe, Australia, and the United States to share their best practices and innovative cases in their respective fields and explore the challenges and opportunities in digital heritage. Through diverse keynote speeches and discussions, participants will gain a deeper understanding of how to organically integrate heritage conservation with digital technologies, particularly big Earth data, AI, digital twin, and earth observation.**
11:00-11:15	**Invited Title: Earth Observation and Artificial Intelligence for the documentation and preservation of cultural and natural heritage in a changing environment** **LASAPONARA Rosa,** CNR-IMAA, Italy
11:15-11:30	**Invited Title: Progress and practice in Space Archaeology** **WANG Xinyuan,** International Centre on Space Technologies for Natural and Cultural Heritage under the auspices of UNESCO (HIST)
11:30-11:45	**Invited Title: Encroachment study of heritage and monuments sites in Pakistan using spatial techniques: case study of Lahore (online)** **Shahina TARIQ,** COMSATS University Islamabad (CUI), Pakistan
11:45-12:00	**Title: Digital protection of cultural landscape as natural and cultural heritage: consciousness, logicality, and practicability** **KONG Dongyi,** Institute of Geographical Sciences, Henan Academy of Sciences, China
12:00-12:15	**Title: Evaluating Spatial temporal changes in world cultural heritage site Taxila: core zone reduction and conservation approaches** **Najam us Saqib Zaheer Butt,** Aerospace Information Research Institute (AIR), CAS, China
12:15-12:30	**Title: Machine learning based predictive modelling of sites in the Surkhandarya River Basin** **YANG Jia,** Beijing University of Civil Engineering and Architecture, China

Parallel Sessions III

DBAR-DATA (I): Data Sharing for Sustainable Development Goals

Time: **09:00-10:15, October 24th, 2024** ***Venue:*** **Conference Room 123, Floor 1, East of Nan Yong**

Co-Chair	***Thorsten JELINEK,*** **Taihe Institute, Germany**
	DU Xiaoping, **International Research Center of Big Data for Sustainable Development Goals (CBAS), China**
	LI Guoqing, **Aerospace Information Research Institute (AIR), CAS, China**
	WANG Juanle, **Institute of Geographic Sciences and Natural Resources Research, CAS, China**
Introduction	**This session will explore strategies to enhance data interoperability, accessibility, and security, bringing together experts to discuss practical solutions for data collection, sharing, and application in key areas like climate resilience, disaster management, and resource sustainability. By focusing on inclusive participation, the session aims to highlight successful case studies, propose innovative frameworks for efficient data sharing across borders, and provide actionable insights to guide policymakers, researchers, and practitioners in using data for sustainable, resilient solutions. The objectives include improving data governance, harmonizing standards for cross-border sharing, and identifying best practices in using shared data to support SDG goals. Expected outcomes include enhanced collaboration, innovative frameworks for data sharing, policy recommendations, and the exchange of best practices for sustainable development.** **This 2024 DBAR workshop on AI brings together EO practitioners and stakeholders to share their practical experiences in using AI in EO, highlighting opportunities and challenges related to data quality, scalability, risks, as well as governance and interdisciplinary collaboration. The objective of the workshop is to forge a commitment to jointly develop a strategy paper and roadmap on the future of EO that fully utilizes frontier AI, alongside major EO functions and processes, including data acquisition (mission planning and execution), processing (data quality), analysis (data insights), and usage (interpretation, integration, visualization, and reporting). The roadmap should consist of executable and impactful use cases that would benefit most rapidly from AI and agentic architecture as enhanced tools for practitioners, as well as the potential for automation and autonomy. This joint whitepaper will be presented at the 10th Anniversary of DBAR in Chengdu from June 8-11, 2025, supported by real-world application showcases.**

09:00-09:15	**Invited Title:Artificial Intelligence in Earth Observation: Call for Collaboration** **Thorsten JELINEK,** Taihe Institute, Germany
09:15-09:30	**Invited Title: Development, Sharing and Applications of JLS-5M Datasets from CGSTL's Medium-high-resolution Multispectral Satellites** **ZHANG Lianchong,** Aerospace Information Research Institute (AIR), CAS, China
09:30-09:45	**Invited Title: Platform Empowering Disaster Risk Reduction and Regional Sustainable Development of the BRI** **LI Chongrong,** Institute of Geographic Sciences and Natural Resources Research, CAS, China
09:45-10:00	**Invited Title: CASEarth** **SUN Ying,** Aerospace Information Research Institute (AIR), CAS, China
10:00-10:15	**Invited Title: AI Powered Big Earth Data Platform for DBAR: Infrastructure and Prototype** **QIN Yuchu,** Aerospace Information Research Institute (AIR), CAS, China

DBAR-DATA (II) : Open Science and Open Data Policies

Time: **11:00-12:30, October 24th, 2024** ***Venue:*** **Conference Room 123, Floor 1, East of Nan Yong**

Co-Chair	***Paul. F. UHLIR,*** **Digital Belt and Road Program (DBAR)**
	LI Jianhui, **Nanjing University, China**
Introduction	**Open science and open data have become essential tools for addressing the pressing global challenges faced by humankind. With the increasing adoption of advanced digital technologies, such as blockchain, cloud federation, and artificial intelligence (AI), there is tremendous potential to accelerate the stalled progress toward achieving the UN Sustainable Development Goals (SDGs). This session aims to deepen our understanding on the critical role of open science and open data policies in foster global scientific collaboration and innovation. We will discuss the legal and ethical challenges in managing and sharing data across borders, while proposing strategies to enhance openness and policy coherence. Through case studies from selected regions, this session will offer actionable insights and recommendations to support the development of globally aligned data policies. In the panel discussion, our experts will explore collaborative approaches to overcoming data stagnation and present practical solutions to leverage open data in advancing sustainable development. The session's deliverables include a set of best practices and insights to inform future international data governance frameworks.**
11:00-11:15	**Title: Legal and ethical considerations in cross-border data transfers and sharing** **Paul F. Uhlir,** Belt and Road Program (DBAR)
11:15-11:30	**Title: Data Policies for AI Governance** **ZHANG Lili,** China Network Information Center, China
11:30-11:45	**Invited Title: Trend of open science and open data in Malaysia（online)** **Noorsaadah Abd Rahman,** Macao Scientific Publishers, Malysia
11:45-12:00	**Title: How can we support the UN Sustainable Development Goals when open data is stagnant?** **PIAO Yingchao,** China Network Information Center, China
12:00-12:30	**Panel Discussion: Open Science and Data Policies: Bridging Gaps for Global Sustainability.**

Side Event: Water-Land-Energy Nexus

Harnessing Digital Technologies for Sustainable Resource

Time: **09:00-12:00, October 24th, 2024** ***Venue:*** **Conference Room 124, Floor 1, East of Nan Yong**

Management	***The Water-Land-Energy Nexus under DBAR***
Introduction	**The year 2024 marks the mid-point of the "Decade of Action" for the UN's 2030 Agenda for Sustainable Development Goals. Various countries around the world are working to formulate policies to facilitate the process of sustainability in economic, social and environmental aspects. Technological developments in particular the rapid digital transformation since past decade hold tremendous potential in enabling innovative solutions to challenges of sustainable development. African nations face unique and varied sustainability challenges. One of the prominent challenges is the competition between transboundary water resources, agricultural land, and energy demands. Digital solutions can provide crucial insights into the complex relationships within the nexus and enable better decision-making by improving early warning systems, enhancing resource efficiency, and facilitating community-driven approaches that integrate indigenous knowledge with modern methods.** **This panel is continuity of deliberations held during the "Digital Sciences for Sustainable Development" held on September 7, 2024 in Beijing on the side lines of the 4th International Forum on Big Data for Sustainable Development Goals (2024). The side event will advance the discussion with a specific focus on the African context, discussing the challenges and opportunities for digital solutions to address critical resource challenges in Africa and examine how digital technologies and Earth observation data can enhance our understanding and management of these vital resources, aligning with the UN SDGs**
Invited Experts	***Amos T.Kabo-Bah,*** **International Center of Big Data for Sustainable Development Goals (CBAS), China**
	JIA Li, **Aerospace Information Research Institute (AIR), CAS, China**
	LI Xiaosong, **International Center of Big Data for Sustainable Development Goals (CBAS), China**
	QIU Yubao, **Digital Belt and Road Program (DBAR)**
	Others

Invited Presentation

Time: **13:30-14:30, October 24th, 2024**

Chair	**Thorsten Jelinek, Taihe Institute, Germany**
13:30-13:50	**Title: The Future of Big Earth Data and Artificial Intelligence** **Paul F. Uhlir, Digital Belt and Road Program (DBAR)**
13:50-14:10	**Title: Global Open Science Cloud (GOSC) Initiative for DBAR** **LI Jianhui, Nanjing University, China**
14:10-14:30	**Title: Digital Innovation for African ICoEs and SDG Achievement** **Amos T. KABO-BAH, DBAR ICoE Sunyani/Co-chair of Programme Board, Group on Earth Observation (GEO)**

Closing Ceremony

Time: **14:30-15:00, October 24th, 2024**

Venue: **Conference Room 110, Floor 1, West of Nan Yong**

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General Information

Conference Venue

Conference Venue

The 8th Digital Belt and Road Conference (DBAR2024) will be held at the Center for International Academic Exchange Suzhou.

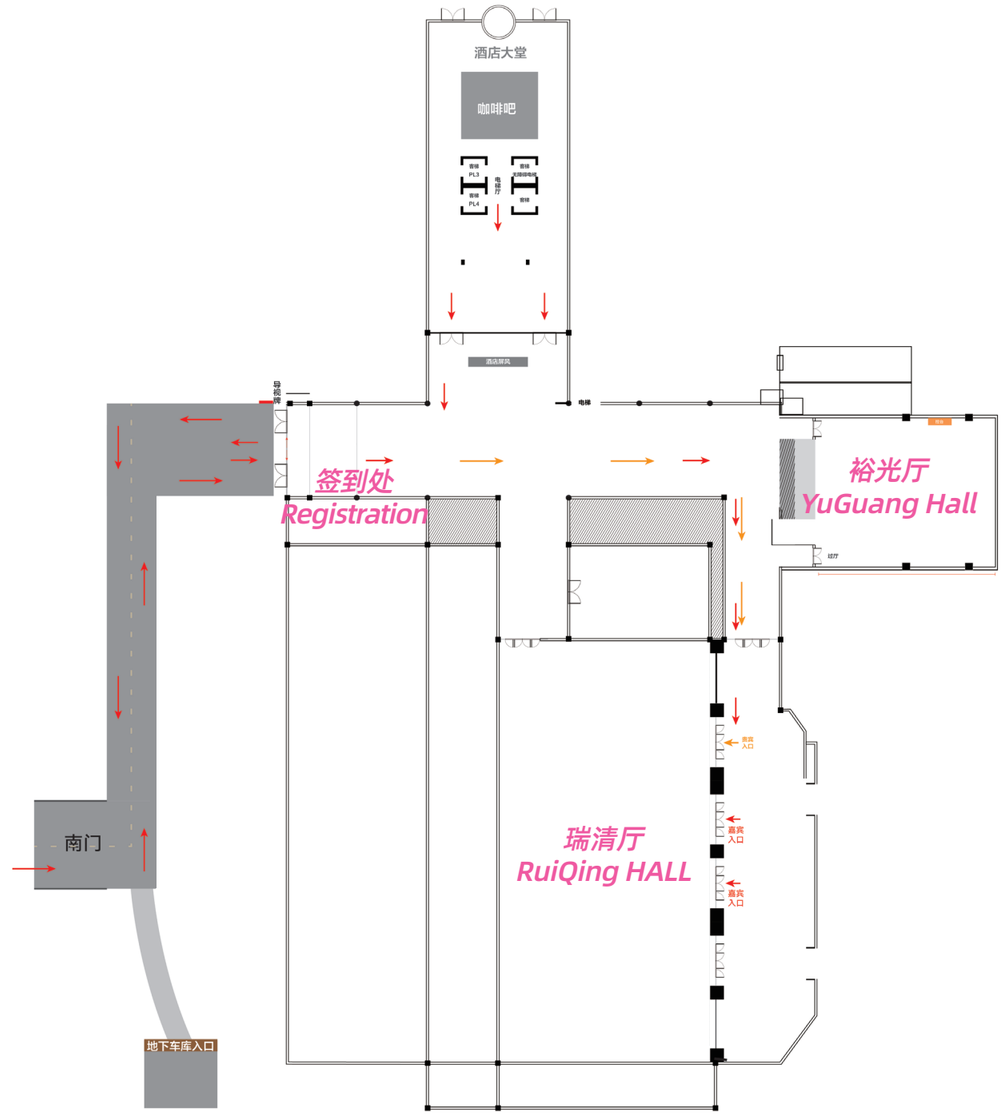
INTRODUCTION

Center for International Academic Exchange Suzhou is located at No. 1520, the Taihu Lake Avenue, High tech Zone, Suzhou, and stands in Nanjing University (Suzhou Campus) with a history of 120 years. By the side of the Taihu Lake Lake and at the foot of Zhuangli Mountain, you can wander between mountains and rivers and soak in the academic atmosphere of institutions of higher learning. The Suzhou International Academic Exchange Center has a large banquet hall with an area of 1500 square meters - Ruiqing Hall, and a professional academic lecture hall - Yuguang Hall, both equipped with P1.8 high-definition curved LED screens, array sound, and professional stage lighting combinations; And 19 multi-functional meeting rooms of different sizes; At the same time, there are full-time restaurants, Chinese restaurants, catering private rooms, lobby bars, and gyms to meet various activity needs.

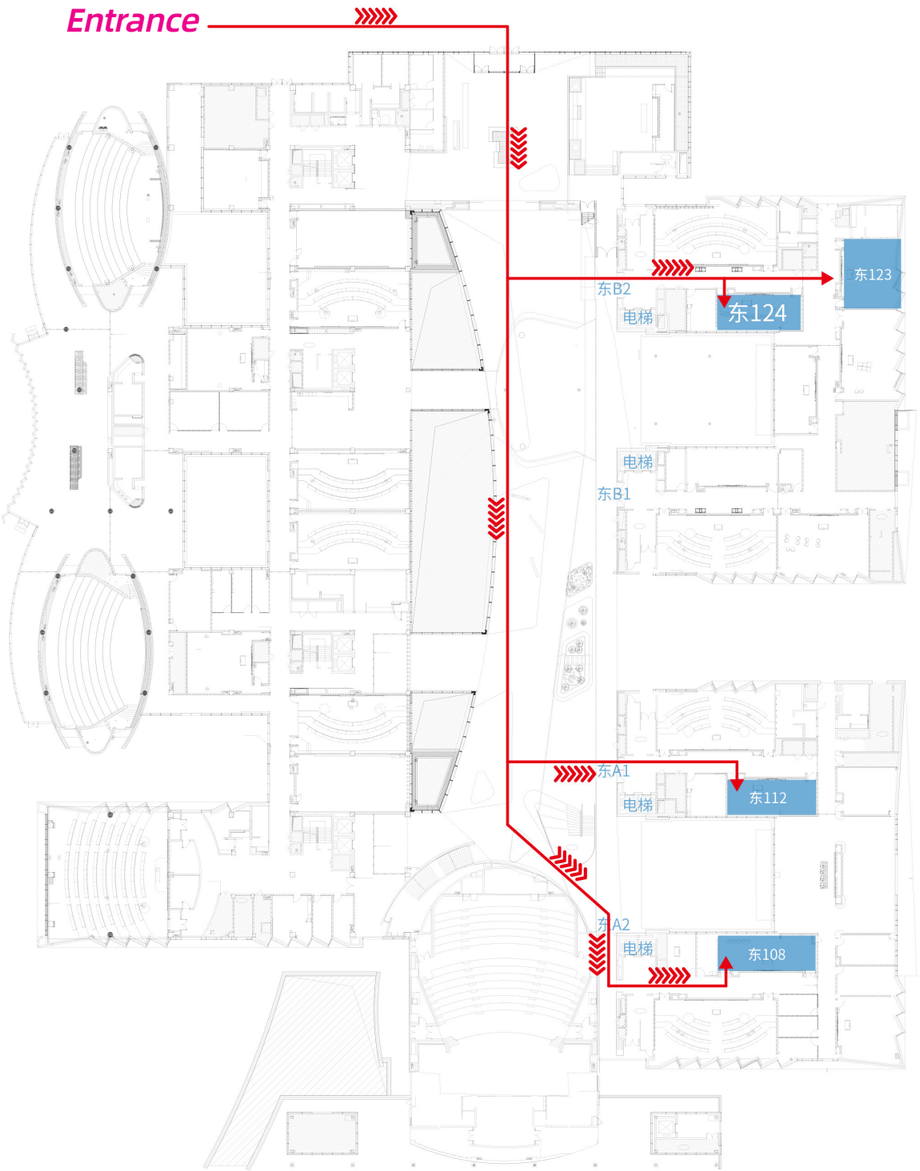
Traffic Information:

- About 900 meters from Longkang Road Station of Tram Line 1.
- About 300 meters from Zhuangli Station of Bus No. 330.
- About 21 kilometers from Suzhou Bus Terminal West, about 30 minutes' drive.
- About 25 kilometers from Suzhou Railway Station, about 30 minutes' drive.
- About 117 kilometers from Shanghai Hongqiao International Airport, about 90 minutes' drive.
- About 163 kilometers from Shanghai Pudong International Airport, about 140 minutes by car.
- About 25 kilometers from Wuxi Sunan Shuofang Airport, about 35 minutes by car.
- About 24 kilometers from Suzhou High Speed Railway Station in Suzhou New District, about 30 minutes by car.

Transportation Map



Venue 1F Floor Plan



Venue 1F Floor Plan，East of Nan Yong

Official Language

The official language of DBAR 2024 is English.

Name Badge

Conference registrants must wear name badges to gain access to all conference activities. Should you misplace your name badge, please gets a replacement at the registration Desk.

Volunteer Assistance

All of our volunteers will be wearing the volunteer shirt for easy identification. Please feel free to ask our volunteers any questions and they will gladly do their best to assist you.

06

Host

The Digital Belt and Road Program (DBAR)

The "Digital Belt and Road Program" (DBAR) was initiated by Chinese scientists in May 2016 with the aim to promote the application of digital technology, with a particular focus on Big Earth Data, towards achieving Sustainable Development Goals (SDGs) in the Belt and Road Countries by promoting and enabling sharing of data, technology and knowledge, to facilitate decision-making process in service of the United Nations 2030 Sustainable Development Agenda and the implementation of Global Development Initiative.

DBAR is widely recognized and supported by participating countries and international organizations of the Belt and Road Initiative. It has support of 59 countries, international organizations and global initiatives within its network. DBAR is constituted of the Scientific Committee, under the leadership of DBAR Chair, works as the decision-making body within the Program, supported by 9 professional Working Groups (WG) to carry out research and 9 International Centers of Excellence (ICoE) providing international networking and opportunities for research collaboration. The DBAR Secretariat is hosted at the International Research Center of Big Data for Sustainable Development Goals (CBAS).

COMMENT

Many developing countries, such as Mongolia, have rural economies, so projects that can provide farmers with up-to-date agricultural information are crucial.

Steps to the digital Silk Road

Sharing big data from satellite imagery and other Earth observations across Asia, the Middle East and east Africa is key to sustainability, urges **Guo Huadong**.

Guo HD.
Steps to the digital Silk Road, Nature 554, 25-27 (2018)
DOI: https://doi.org/10.1038/d41586-018-01303-y

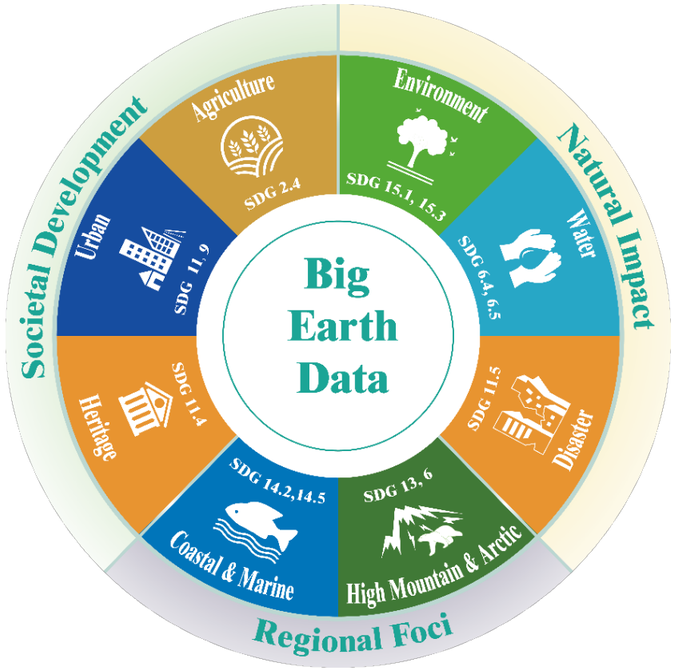
The Belt and Road

Distribution of DBAR ICoEs Worldwide

Through the collaborative efforts of over 300 experts from 26 countries and more than 10 international organizations, formulating the DBAR Science Plan, designed a workflow that allows synergistic exploitation of multiple data streams by developing an integrated data processing and analysis system to extract effective information from the data systems. DBAR encompasses five key actions - linking multiple data streams into an integrated, distributed data repository; designing an ICT infrastructure to support remote discovery, access, processing analysis of EO data in a virtual (cloud-based) environment; conducting research on Earth System Science primarily based on EO data; fostering interaction within communities of scientific and professional stakeholders; and disseminating case studies and outcomes relevant to the Sustainable Development Goals (SDGs).

DBAR Work Flow

The DBAR Foci are centered on Big Earth Data and interconnected through broad theoretical concepts. The foci cover areas where the effects of climate change are more pronounced, including two key comprehensive regions, coastal and marine environments and high-mountain and Arctic environments. The areas of interest also encompass disasters, water resources, urban activity, infrastructure, heritage, and agriculture.



DBAR Foci: from Big Earth Data to SDGs

In February 2018, the Chair of the DBAR Science Committee, Prof. Huadong Guo, published a commentary titled “Steps to the digital Silk Road” in Nature, highlighting the international scientific community's attention to the Belt and Road Initiative and the role of science and technology in its advancement. In October 2023, the Beijing Declaration on Digital Belt and Road jointly released by DBAR and scholars from 25 countries and regions, has been included in the List of Multilateral Cooperation Deliverables of the Third Belt and Road Forum for International Cooperation as one of the 14 “Deliverables of Non-government Cooperation Platforms”.

Over the years, DBAR has signed memorandums of understanding with over 10 international organizations, including UNEP, ISC, CODATA, and AARSE, to promote the construction of the Digital Silk Road at global and regional levels. DBAR has pioneered the development of the Big Earth Data System, which has been included in China’s white paper titled "The Belt and Road Initiative: A Key Pillar of the Global Community of Shared Future". Additionally, a customized CropWatch Cloud platform for Mozambique with Portuguese version has been designed and developed by DBAR, with its findings officially integrated into the country's agricultural reports. Significant results have also been achieved in the application of Earth data in the discovery of archaeological sites along the Silk Road in Tunisia, which has garnered appreciation from the Tunisian government.

As part of DBAR's efforts, the annual International Digital Belt and Road Conference has been successfully held since 2016 in cities such as Beijing, Hong Kong, Tengchong, and Shenzhen, attracting hundreds of experts, scholars, government officials, and stakeholders from various countries. These conferences facilitate the sharing of data, experiences, technologies, and knowledge, promoting the application of Big Earth Data and digital technologies in the sustainable development of Belt and Road countries.

Through years of development, DBAR has become a vital platform for the global scientific community to promote sustainable development along the Belt and Road, playing an increasingly important role in international collaboration and technological innovation.

Nanjing University Suzhou Campus

Nanjing University (NJU), founded in 1902 in the historic city of Nanjing, is one of China's oldest and most prestigious universities. Celebrating over 120 years, NJU is renowned for its educational reforms, interdisciplinary programs across science, engineering, humanities, and social sciences, and its commitment to global challenges. It was a pioneer in both foundational and applied research. NJU maintains robust international collaborations, with partnerships with about 280 institutions worldwide, and is part of the elite C9 League, with 20 disciplines ranking in the top 1% globally. Spread across four campuses, each fostering a unique academic and cultural environment, NJU is able to offer a rich and diverse setting for its community. Under the leadership of notable figures like Tan Tieniu and Tan Zhemin, the university continues to drive innovation and excellence in education and research, striving to attract global talent and contribute to national rejuvenation. NJU's motto, "Sincerity with Aspiration, Perseverance with Integrity," reflects its dedication to high standards and integrity.

Suzhou Campus of NJU, located in the Suzhou High-Tech District, is strategically positioned at the intersection of the "Taihu Science and Innovation Circle" and the "Shanghai-Nanjing Industrial Innovation Belt." Officially opened in September 2023, the campus aims to develop new engineering disciplines and foster interdisciplinary collaboration in areas like artificial intelligence, life sciences, and environmental protection. Six schools, nine research institutes and four research centers have been established to support this vision. The campus is dedicated to becoming a key driver of economic and social development, cultivating top-tier talent, and enhancing NJU's global standing in the new era. By implementing strategic initiatives like the "Gusu Innovation 100 Talents Plan," the campus seeks to attract high-end innovation talent. Advanced research platforms will further promote innovation. Emphasizing intelligence, vitality, and modernity, the campus is committed to creating an aesthetically pleasing environment that supports academic excellence and international collaboration.

International Research Center of Big Data for Sustainable Development Goals (CBAS)

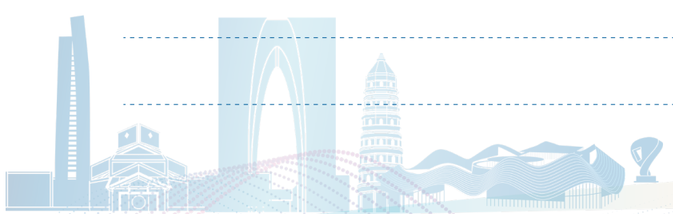
In 2020, Xi Jinping, President of the People's Republic of China at the General Debate of the 75th Session of The UN General Assembly announced that China will set up an International Research Center of Big Data for Sustainable Development Goals (CBAS) to facilitate the implementation of the 2030 Agenda. At the founding conference of CBAS on September 6, 2021, Chinese President Xi Jinping sent a congratulatory letter, expressing the hope that all sides can make full use of the platform provided by CBAS to explore ways of sustainable development supported by big data, strengthen international cooperation, and make joint efforts to contribute to the implementation of the UN 2030 Agenda and the building of a community with a shared future for humanity. UN Secretary-General, António Guterres delivered a video speech, fully affirmed the role of CBAS, and hoped that CBAS would support the UN Global Platform and achieve the sustainable development goals.

CBAS (http://www.cbas.ac.cn/en/) aims to harness big data to serve the United Nations 2030 Agenda for Sustainable Development, featuring multidisciplinary research related to Earth system science, social and economic sciences, as well as sustainability science. It is devoted to the monitoring and evaluation of SDG indicators in the areas where big data plays a key role, including environmental commons, urban and peri-urbandevelopment, food security, and energy decarbonization.

To address the most challenging problems in the implementation of the SDGs, such as technological barriers and lack of data, CBAS provides a range of essential services including data sharing, technology solutions, decision-making support, a think tank, and capacity building for developing countries. CBAS works towards a vision where data is open and accessible across borders and disciplines, technology is available to support the entire policymaking process, and knowledge and ideas are communicated and grown, especially among developing countries.

Aerospace Information Research Institute (AIR), CAS

The Aerospace Information Research Institute (AIR) under the Chinese Academy of Sciences (CAS) was established in 2017 to promote the development of the aerospace information and to inspire technology innovations that can solve issues related to sustainable development. Currently AIR has nearly4,000 employees and runs two schools under the University of the Chinese Academy of Sciences, namely, the School of Electronic, Electrical and Communication Engineering and the School of Optoelectronics, training over 1,800 postgraduate students in total. AIR has 21 national- / CAS- level key laboratories as well as research centers, and conducts research from following aspects: payload and device technology; global Satellite Data Receiving Ground Station Network; remote sensing science and Digital Earth; BeiDou navigation and positioning technology; aerospace information and technology applications.The international S&T cooperation platform hosted by AIR includes: the International Society for Digital Earth (ISDE), the International Centre on Space Technologies for Natural and Cultural Heritage (HIST) under the auspices of UNESCO, the International Programme Office for Integrated Research on Disaster Risk (IRDR IPO) and the CASTWAS Centre of Excellence on Space Technology for Disaster Mitigation (SDIM).



DBAR

Digital Belt and Road

DBAR Secretariat

Address: No.9 Dengzhuang South Road, Haidian District, Beijing 100094, China

Tel: +86-10-82178372

Mobile: 86-17300135070

E-mail: dbar@radi.ac.cn

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