



International Digital Twins of the Ocean Summit 2023

November 9 - 12, 2023 • Xiamen, China



The Second Announcement

CALL FOR ABSTRACTS!

DEADLINE: JULY 31, 2023

INTRODUCTION

The ocean is facing challenges from both climate change and increasing impacts caused by anthropogenic activities. This calls for breakthrough solutions to address the challenges for a shared sustainable ocean future. Digital twins of the ocean (DTOs) are digital representations of the ocean that help to answer “what if” questions.

Endorsed by the UN Decade of Ocean Science for Sustainable Development (2021-2030), the Digital Twins of the Ocean (DITTO) programme was launched in 2021. The vision of the DITTO Programme is to build a world where Digital Twins of the Ocean are used to support ocean protection, ocean governance, and a sustainable blue economy. The DITTO Summit 2022 was held in London and was attended by 500+ participants physically and virtually exploring progress in the development of DITTO capability, considering their requirements for infrastructure, describing potential applications, and defining a path forward.

Taking the great arena of 2023 World Ocean Week in Xiamen, the DITTO Summit 2023 will be co-organised by the Fujian Ocean Innovation Center and State Key Laboratory of Marine Environmental Science (Xiamen University), to gather global participants with the themes focusing on sharing the latest knowledge about DTOs and discussing future actions on advancing and applying them.

We now warmly welcome and encourage everyone who is interested in the topic of DTOs to register for communication, exchange, and collaboration.

ACADEMIC SESSIONS

We sincerely call for abstracts submitting to the following sessions for in-depth discussions on advancing and applying DTOs.

1. Ocean Observations & Data Systems

- New technological developments for implementing observation programmes and refining data systems
- Important advances and key applications of ocean observations and data systems in understanding the mechanisms of regional and global ocean problems and climate variabilities and changes
- Current status, challenges, opportunities, and future collaboration plans for establishing ocean observations and data systems

2. Data Analytics & Model Prediction Engines

- Tailored data analytics and predictive capabilities based on machine learning and AI that provide the digital twin with its necessary functionality
- Model-based simulations and solutions for understanding and predicting the short- and long-term evolution of Essential Ocean Variables at global, regional, and local scales
- Data assimilation solutions and/or their components for improving performance of integrated modelling systems

3. Data Lakes & Interoperability

- Promoting (meta)data interoperability and reducing friction at all levels by transiting the sources and sinks of data flow from unstructured data lakes to integration-on-demand data spaces
- Discussing the position of data lakes within digital twins and standards of data lake products
- Exploring interoperability conventions and advancements that are necessary to link existing data flows to twins

4. Interactive Layers & Visualisations

- Establishing design guidelines for visualisations and data provisioning strategies that accurately depict the required information and meet different users' needs

- Developing adaptable provisioning layers that are generic and feature-rich for creating specific DTOs
- Exploring ongoing activities and the standards and best practices for visualisation engines, data provisioning, and interaction with analytical models, as well as challenges associated

5. Advancing DTO Architectures and Interoperability

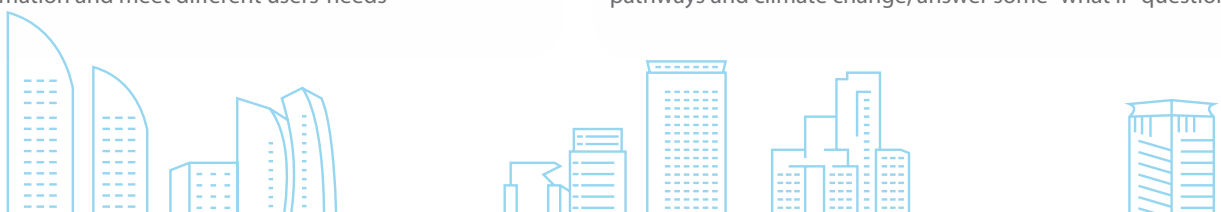
- Discussing what interoperability methods and integrative data management could be applied as the fundamental basis for reusable twins and twin components
- Exploring interoperability, standards, and best practices associated with alternative architectures and frameworks
- Discussing DTO architecture frameworks and associated interoperability approaches for collecting guidelines, recommendations, and best practices for interoperable DTOs

6. Education, Training & Capacity Development

- Advancing the application of the technologies from data acquisition to the stage of interactive visualisation
- Sharing experiences and best practices related to the education, training, and capacity building of DTOs
- Promoting equal and inclusive access to DTO technologies and capacity development

7. Showcase of DTO Applications

- Sharing experiences and best practices of applying DTOs in coastal and open ocean environment, including ocean forecasting, marine conservation, and ecosystem restoration, etc.
- Application of DTOs in ocean observation and modeling, including coastal hazard prevention, ocean carbon cycles, underwater observation, and analysing data obtained with satellites and *in situ* observations
- DTO application in simulating and predicting marine environmental changes across various scenarios of socio-economic pathways and climate change, answer some “what if” questions



MULTI-LEVEL ACTIVITIES

In addition to the parallel academic sessions, the Programme Committee of the Summit designed multi-level activities to enrich communications among participants from around the world, including special event on cross-sectoral collaboration on advancing and applying DTOs, as well as satellite events that provide an arena for you to share and showcase your research and application of DTOs.

Special Event: Cross-sectoral Workshop on Advancing and Applying DTOs

The afternoon of November 9, 2023

Despite topics on DTOs will be fully discussed through the Summit sessions, this special event adopts a novel perspective to bring together cross-sectoral participants, ranging from academia, industry to government, for a wide communication to understand the needs from different users and an in-depth discussion on how to further advance DTO technologies to satisfy those needs. It is expected to foster and build up a novel cross-sectoral partnership for promoting the application of DTOs, as well as for empowering a high-quality development of the blue economy in the region and beyond.

The special event will invite guest speakers from various institutions to share their insights upon invitation and availability. Everyone interested is welcome to join for communication, exchange and collaboration.

Satellite Events

October 9 – November 6 & November 13 – 24, 2023

There is a lot of local, regional, disciplinary, and sectoral but also global interest in the concept of “Digital Twins of the Ocean”. The initiator of the DITTO Programme, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany, is now coordinating a worldwide series of satellite virtual events prior to and after the DITTO Summit 2023 for providing a mean to reach out to and engage the broader community and exchange ideas virtually, as well as supporting the advancement of actions in a broad area of DITTO.

We are now calling for your registration and proposal to host a satellite event on digital twins of the ocean.

Everyone who wants to be engaged in the topic of DITTO is invited to organise and register their own satellite event. Please visit <https://ditto.geomar.de/> or contact Ms. Joana Kollert (satellites.dittosummit@gmail.com) for satellite event registration.

More activities will be updated in the next announcement. Register on the website now and stay tuned!

REGISTRATION

How to submit an abstract?

Please submit your abstract through the official website of the Summit (<https://ditto-summit2023.scimeeting.cn>) by July 31, 2023.

If you have any questions, do not hesitate to contact us via email (dittosummit2023@chinastargroup.com).

Fees

1. Early-bird Registration

Student: 1200 CNY / 180 USD

Standard: 2000 CNY / 300 USD

2. Regular Registration

Student: 1500 CNY / 210 USD

Standard: 2500 CNY / 350 USD

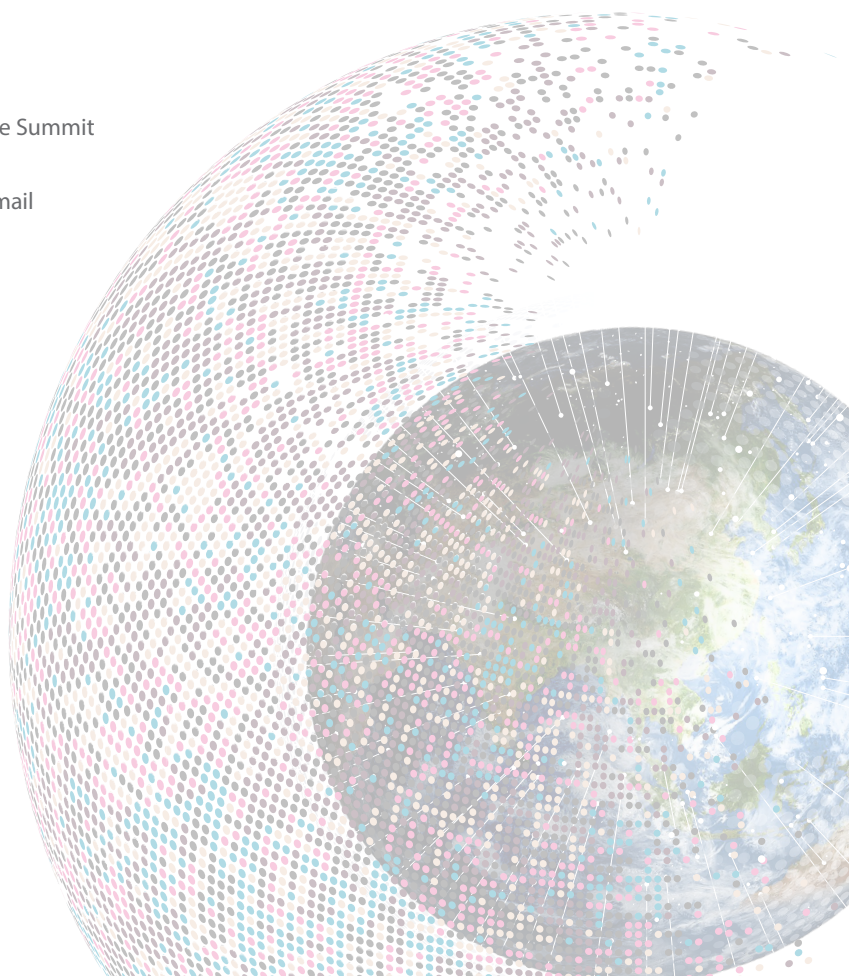
Important Dates

July 31 – Abstract Submission Deadline

August 15 – Early-bird Registration Opens

September 15 – Regular Registration Opens

October 15 – Registration Deadline



Co-Chairs

Prof. Fei CHAI (Xiamen University)

Prof. Martin VISBECK (GEOMAR)

Contact us

Dr. Samuel Guihua WANG (Coordination)

Ms. Xiaoyi WANG (Academic Programme)

Ms. Yiya HUANG (Co-Organisation)

Ms. Joana KOLLERT (Satellite Events)

Ms. Jingrui ZHANG (Registration & Logistics)

Website: <https://ditto-summit2023.scimeeting.cn>

E-mail: dittosummit2023@chinastargroup.com

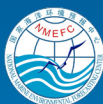
Initiated by  **DITTO**

Organisers

Fujian Ocean Innovation Center, China

State Key Laboratory of Marine Environmental Science (Xiamen University), China

Co-Organisers (More partners will join for co-organisation)



厦门市海洋发展局



香港城市大学
City University of Hong Kong



Scan for the website