

# ORAL PRESENTATION AGENDA OF DITTO SUMMIT 2023

**DAY 1: November 10 (Friday)**

**PS-01: Ocean Modeling of Physical Processes**  
**Co-Chairs: Jianping GAN and Chanhyung JEON**

**Time:** 1400-1545

**Venue:** Xiamen Grand Ballroom I+II

Time	Title	Presenter	Affiliation
1400-1415	Characterizing the Variability of the Circulation in the Indonesian Seas	Huijie XUE	Xiamen University
1415-1430	High-Resolution, Sub-mesoscale-Capable Global Ocean and Sea Ice Model Development – Progress and Prospects	Shiming XU	Tsinghua University
1430-1445	Efficient Dynamical Downscaling of Ocean Models Using Continuous Data Assimilation Algorithm	Peng ZHAN	Southern University of Science and Technology
1445-1500	Physically Downscaling the Global Oceanic Impact to Regional Simulations through a Novel Open Boundary Condition	ZhiQiang LIU	Southern University of Science and Technology
1500-1515	Wave Effects on Coastal Upwelling over Variable Shelves: Insight into Stokes Drift Forces and Pressure Modulation	Shangfei LIN	Hong Kong University of Science and Technology
1515-1530	Modeling Two-Way Ice-Wave Interactions in the Great Lakes Using Fvcom_Ice+Wave Model	Jia WANG	GLERL/NOAA
1530-1545	Promotion of the High Salinity Shelf Water Formation in the Ross Sea by the Future Trend of the Amundsen Sea Low	Zhaoru ZHANG	Shanghai Jiao Tong University

**PS-02: DTO Applications for Estuary and Coastal Processes  
(Co-organised with SKLEC/ECNU)**

**Co-Chairs: Zhong PENG and Chunhua JIANG**

**Time: 1400-1545**

**Venue: Conference Room 2**

No.	Title	Presenter	Affiliation
1400-1415	Advances of Coastal Ocean Physical and Biogeochemical Modeling	Jianzhong GE	East China Normal University
1415-1430	The Construction Patterns of Data Management Framework for Digital Twin system in Coastal Region	Pei DU	Nanjing Normal University
1430-1445	Application of Deep-Learning Neural Network Model in Tide Correction and Surge Prediction on Estuarine and Coastal Waters	Zhuo ZHANG	Nanjing Normal University
1445-1500	Development and Application of Digital Twin Platform for Preventing Storm Surge Composite Disaster	Jian ZENG	Zhejiang Institute of Hydraulics and Estuary
1500-1515	“What-ifs” of Coastal Flooding and Erosion for a Future Regional DTO	Joaquín TINTORE	Balearic Islands Coastal Ocean Observing and Forecasting System, Spain
1515-1530	Towards a Better Understanding on Multiple Processes in the Changjiang River Estuary and Its Vicinity through Numerical Modelling and Perhaps, Digital Twins	Hui WU	East China Normal University
1530-1545	Seasonal Diversity of El Niño-Induced Marine Heatwave Increases in the Bay of Bengal	Yun QIU	The Third Institute of Oceanography, MNR, China

**PS-03: Ocean Observation of Physical Processes****Co-Chairs: Yan DU and Lin WANG****Time: 1400-1545****Venue: Conference Room 3**

<b>No.</b>	<b>Title</b>	<b>Presenter</b>	<b>Affiliation</b>
1400-1415	An Ocean Observing System in Support for the Digital Twin of the Ocean	Toste TANHUA	GEOMAR
1415-1430	The Tropical Pacific Observing System underlies Ocean Information Products	William KESSLER	Pacific Marine Environmental Laboratory / NOAA
1430-1445	China's Activities in Ocean Observations in the Kuroshio Extension Region	Zhaohui CHEN	Ocean University of China
1445-1500	Scientific Observing Network of the Chinese Academy of Sciences in the Western Pacific Ocean	Jianing WANG	Institute of Oceanology Chinese Academy of Sciences
1500-1515	Exploring the Meso-To Sub-mesoscale Dynamics Using the South China Sea Mooring Array	Zhiwei ZHANG	Ocean University of China
1515-1530	Internal Tide Mapping in the Northwestern Pacific by Multisource Heterogeneous Data Integration	Zhenhua XU	Institute of Oceanology Chinese Academy of Sciences
1530-1545	Observation-Based Estimates of Heat and Freshwater Exchanges from the Subtropical North Atlantic to the Arctic	Feili LI	Xiamen University

**PS-04: Ocean Modeling of Coupled Systems****Co-Chairs: Zhao JING and Jae-Hyoung PARK****Time: 1605-1750****Venue: Xiamen Grand Ballroom I+II**

No.	Title	Presenter	Affiliation
1605-1620	New Generation Ocean Model is the Solid Base of Digital Ocean	Shizhu WANG	The First Institute of Oceanography, MNR, China
1620-1635	EDITO-Model Lab: The Next Generation of Numerical Models for the European Digital Twin Ocean	Yann DRILLET	Mercator Ocean International
1635-1650	Prediction on Spatial Distribution of Chlorophyll-a in Coastal Seas Using a Synthetic Method of Remote Sensing, Machine Learning and Numerical Modelling	Dehai SONG	Ocean University of China
1650-1705	Assessment of Intraseasonal Variabilities in Ocean Reanalysis Products	Lei ZHOU	Shanghai Jiao Tong University
1705-1720	Simulation of East Asian Summer Monsoon Associated with Land-Air-Sea Interaction	Anmin DUAN	Xiamen University
1720-1735	Evaluating Western North Pacific Tropical Cyclone Forecast in the Subseasonal to Seasonal Prediction Project Database	Xiaochun WANG	Nanjing University of Information Science and Technology
1735-1750	Operational Sea Ice Forecasts for the Polar Regions in the NMEFC	Xi Liang	National Marine Environmental Forecasting Center

**PS-05: Remote Sensing and Applications****Co-Chairs: Yan BAI and Lian FENG****Time: 1605-1750****Venue: Conference Room 2**

No.	Title	Presenter	Affiliation
1605-1620	Big Data, Small Satellites and Deep Ocean Remote Sensing in Climate Change Studies	Xiaohai YAN	University of Delaware
1620-1635	Enhancing AMOC Understanding through Ocean Bottom Pressure Estimates from Satellite Gravimetry Missions	Le LIU	University of Bonn
1635-1650	Which Satellite Ocean Color Products Be Better Used in Coupled Biology-Physics Ocean Circulation Models: <i>Chl</i> or IOPs?	Zhongping LEE	Xiamen University
1650-1705	Satellite-Based Estimation of Carbon Fluxes in China Sea and a Marine Satellite Data Online Analysis Platform (SatCO2)	Yan BAI	The Second Institute of Oceanography, MNR, China
1705-1720	Global Mapping of Coastal Phytoplankton Blooms	Lian FENG	Southern University of Science and Technology, China
1720-1735	Remote Estimation of Photo-Inactive Property from Satellite: Sea Surface Nitrate	Shuangling CHEN	The Second Institute of Oceanography, MNR, China

**PS-06: DTO Applications for Nearshore and Coastal Systems****Co-Chairs: Deanesh RAMSEWAK and Wenfang LU****Time: 1605-1750****Venue: Conference Room 3**

No.	Title	Presenter	Affiliation
1605-1620	Towards Establishment of Digital Twin in the GBA Ocean	Jianping GAN	Hong Kong University of Science and Technology
1620-1635	Guangdong-Hong Kong-Macao Greater Bay Area Ocean Digital Twin Application System	Chuyong LIN	Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai)
1635-1650	A Real-Time Ecological Environment Prediction System for the Guangdong-Hong Kong-Macao Greater Bay Area: Model Setup, Application, and Online Visualization	Yang FENG	South China Sea Institute of Oceanology
1650-1705	Model Framework of Marine Physics-Biogeochemistry Coupling Process in the Guangdong-Hongkong-Macao Greater Bay Area	Xueming ZHU	Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai)
1705-1720	Revealing Benthic Habitats and Sessile Epibenthic Biodiversity in Victoria Harbour – A Preliminary Study	Lai CHAN	City University of Hong Kong
1720-1735	Nutrient Budget and Biogeochemical Dynamics in Sansha Bay, China: A Coastal Bay Affected by Intensive Mariculture	Aiqin HAN	The Third Institute of Oceanography, MNR, China
1735-1750	Multi-Dimensional and Multi-Level Complex Network Model for Expressing Game Relationships Among Stakeholders in Coastal Zones	Wen LUO	Nanjing Normal University

## DAY 2: November 11 (Saturday)

### PS-07: Ocean Observations of Biochemistry and Ecosystems

*Co-Chairs: Mei ZHENG and Zhiqiang LIU*

**Time:** 0830-1000

**Venue:** Xiamen Grand Ballroom I+II

No.	Title	Presenter	Affiliation
0830-0845	Strengthened Ocean-Desert Processes in the North Pacific Over the Past Two Decades	Huiwang GAO	Ocean University of China
0845-0900	A New Method for Quantifying Sources and Solubility of Iron in Marine Aerosol Based on Field Observation in the Northwestern Pacific	Mei ZHENG	Peking University
0900-0915	Biological Carbon Pump in South China Sea by Multiple Observation Approaches	Bangqin HUANG	Xiamen University
0915-0930	Mangrove Blue Carbon Budget in Regional Scale Based on Field Observation Systems: Case in Zhangjiang Mangrove Long-Term Station	Luzhen CHEN	Xiamen University
0930-0945	Societally Relevant Predictions and Projections of Ocean and Coastal Change through the Ocean Acidification Research for Sustainability (OARS) UN Decade Program	Richard BELLERBY	Norwegian Institute for Water Research

**PS-08: DTO Architectures and Interoperability 1**  
**Co-Chairs: Pier Luigi BUTTIGIEG and Han ZHANG**

**Time:** 0830-1000

**Venue:** Conference Room 2

No.	Title	Presenter	Affiliation
0830-0845	The EMODnet Data Portal and Digital Twins: Are We Ready to Meet the Data As a Service Needs of the Digital Twins Developers and Our Traditional Users?	Conor DELANEY	EMODnet Secretariat
0845-0900	Blue-Cloud 2026: Empowering Ocean Research through Data Integration	Marina TONANI	Mercator Ocean International
0900-0915	EDITO-INFRA: An Open and Interoperable Platform to Gather Contributions for the Creation of a European DTO	Alain ARNAUD	Mercator Ocean International
0915-0930	Towards a Regional Digital Twin for the Western Mediterranean Sea	Joaquín TINTORE	Balearic Islands Coastal Ocean Observing and Forecasting System, Spain
0930-0945	Piloting the Concept of an Information Management Framework for Environmental Digital Twins (IMFe) and Connecting the Results to the UN Decade DITTO Programme	Justin BUCK	National Oceanography Centre, UK
0945-1000	Towards a Global Digital Transformation of Marine Knowledge Management and Use in Support of Sustainable Ocean Management and Blue Growth	Jan-Bart CALEWAERT	IOC-UNESCO



**PS-09: DTO Applications for Regional Systems**  
**Co-Chairs: Sung Yong KIM and Enhui LIAO**

**Time:** 0830-1000

**Venue:** Conference Room 3

No.	Title	Presenter	Affiliation
0830-0845	Improving Ocean Governance with the South African Oceans and Coastal Information System	Marjolaine KRUG	Department of Forestry, Fisheries and the Environment of South Africa
0845-0900	South Africa's Operational Ocean Forecasting Developments	Giles FEARON	South African Environmental Observation Network
0900-0915	Abstract for Introducing KDTOI (Korea Digital Twin Ocean Initiatives)	Sang Keon LEE	Korea Research Institute for Human Settlements
0915-0930	Coastal Observing and Modeling Campaign in the Java Sea Indonesia: toward an Initiative Program of Digital Twin of the Ocean in the Java Sea (DITTO-JS) for Sustainable Management of Marine Resources and Activities	Agus ATMADIPOERA	IPB University
0930-0945	Reef-scale Hydrodynamic Modeling for Coral Reef Digital Twins	Weifeng ZHANG	Woods Hole Oceanographic Institution
0945-1000	The Strategies Preventing Particle Transportation into the Inlets of Nuclear Power Plants: Mechanisms of Physical Oceanography	Yuwu JIANG	Xiamen University

**PS-10: DTO and Data Lakes 1****Co-Chairs: Jan-Bart CALEWAERT and Wupeng XIAO****Time: 1400-1545****Venue: Xiamen Grand Ballroom I+II**

<b>No.</b>	<b>Title</b>	<b>Presenter</b>	<b>Affiliation</b>
1400-1415	Mechanisms to Support Semantic Interoperability across Components of Digital Twin	Piotr ZABOROWSKI	Open Geospatial Consortium
1415-1430	EDITO-INFRA: An Open Platform to Federate Digital Twin of the Ocean Initiatives	Alain ARNAUD	Mercator Ocean International
1430-1445	Building a Data Lake for the Application of Digital Twins of the Ocean	Qi LI	Southern Marine Laboratory
1445-1500	Marine Cloud: Data, Models and Digital Twins	Nengwang CHEN	Xiamen University
1500-1515	The International Quality-controlled Ocean Database (IQuOD): Adding Value to Existing Ocean Observations	Lijing CHENG	Institute of Atmospheric Physics, Chinese Academy of Sciences
1515-1530	From the Biogeochemical-Argo Program to Gridded Four-Dimensional Data Products	Xiaogang XING	The Second Institute of Oceanography, MNR, China
1530-1545	Marine Organic Carbon Atlas: What Does It Take to Make One?	Artur Piotr PALACZ	Institute of Oceanology Polish Academy of Sciences

**PS-11: DTO Architectures and Interoperability 2**  
***Co-Chairs: Zhaoyuan YU and Shangfei LIN***

**Time:** 1400-1545

**Venue:** Conference Room 2

<b>No.</b>	<b>Title</b>	<b>Presenter</b>	<b>Affiliation</b>
1400-1415	Interoperable Digital Twins of the Ocean – Architecture and Examples from Iliad	Arne BERRE	SINTEF
1415-1430	Coastal Information Model: A Comprehensive Architecture for Coastal Digital Twin Integration of Data, Models and Knowledge	Zhaoyuan YU	Nanjing Normal University
1430-1445	Integrating MPI and Spark with Kafka for Real-time Processing of High-Resolution Geoscience Datasets	Shenghui ZHOU	Laoshan Laboratory
1445-1500	An Integrated Representation Modeling for Ocean Statics and Dynamics within Twin Framework	Cunjin XUE	Aerospace Information Research Institute, Chinese Academy of Sciences
1500-1515	A Digital Twin for Estuarine and Coastal Systems	Zhong PENG	East China Normal University
1515-1530	Interoperability architectures for Digital Twins of the Ocean - an introduction to WG5 and TURTLE	Justin BUCK	National Oceanography Centre, UK

**PS-12: DTO Applications for Biogeochemistry and Ecosystems  
(Co-organized with SKLMP/City University of Hong Kong)  
Co-Chairs: Yang FENG and Baolan WU**

**Time:** 1400-1545

**Venue:** Conference Room 3

No.	Title	Presenter	Affiliation
1400-1415	Challenges for Developing Digital Twins for Marine-based Carbon Dioxide Removal	Mark WELLS	University of Maine
1415-1430	Modeling Ocean Iron Fertilization Experiments in the Pacific Ocean	Peng XIU	Xiamen University
1430-1445	Global-Scale Carbon to Nitrogen Ratio Diagnosed Using a Biogeochemical Inverse Model	Weilei WANG	Xiamen University
1445-1500	Observational Record since 1960s Reveals Expanding Global Oxygen Minimum Zones due to Human-Induced Climate Warming	Yuntao ZHOU	Shanghai Jiao Tong University
1500-1515	Unveiling Dissolved Inorganic Carbon Dynamics in the South China Sea through Digital Twins and Visualization	Quan LI	Shanghai Tech University
1515-1530	Assessing Impacts of Coastal Warming, Acidification, and Deoxygenation on Pacific Oyster ( <i>Crassostrea Gigas</i> ) Farming: A Case Study in the Hinase Area, Okayama Prefecture and Shizugawa Bay, Miyagi Prefecture, Japan	Masahiko FUJII	The University of Tokyo
1530-1545	Data Analytics Engines for Fishery and Marine Biodiversity Research Using Ocean Reanalysis and Future Projection Dataset in the Sea Region around Japan	Hiromichi IGARASHI	Japan Agency for Marine-Earth Science and Technology

## DAY 3: November 12 (Sunday)

### PS-13: DTO and Data Lakes 2

**Co-Chairs:** Jon BLOWER and Shenghui LI

**Time:** 0830-1000

**Venue:** Xiamen Grand Ballroom I+II

No.	Title	Presenter	Affiliation
0830-0845	Digital Twin of the Ocean, OneArgo as a Key Component	Yann-Hervé De ROECK	Euro-Argo ERIC
0845-0900	Toward a Data-Driven Digital Twin of the Ocean: Integrating an Adaptive Glider Observation Network and Data-Driven Techniques	Yu TIAN	Shenyang Institute of Automation, Chinese Academy of Sciences
0900-0915	Data Driven Digital Twin System for High-Speed Cross-domain Vehicle	Hongyuan LI	Peking University
0915-0930	An Acoustical Apparatus for the Quantification of Knowledge Required by Ecosystem-Based Management	Wen-Miin TIAN	National Sun Yet-sen University
0930-0945	Reconstruction of Surface Velocities from High-Resolution Sea Surface Height Using Convolution Neural Network with Decomposed Data	Qiang DENG	Xiamen University
0945-1000	Deep Learning Approach for Forecasting Sea Surface Temperature Response to Tropical Cyclones in the Western North Pacific	Han ZHANG	The Second Institute of Oceanography, MNR, China

**PS-14: Education, Training & Capacity Development*****Co-Chairs: Yuntao WANG and Khanittha Uthaipan*****Time:** 0830-1000**Venue:** Conference Room 2

<b>No.</b>	<b>Title</b>	<b>Presenter</b>	<b>Affiliation</b>
0830-0845	Strategic Orientation and Global Communication of The UN Ocean Decade	Yuntao WANG	The Second Institute of Oceanography, MNR, China
0845-0900	An Overview of DCC-OCC and its Vision for Advancing Capacity Building in the Future	Jing SUN	Decade Collaborative Center on Ocean-Climate Nexus and Coordination Amongst Decade Implementing Partners in P.R.China (DCC-OCC)
0900-0915	Empowering the Global South: Inclusive Access to Digital Twin Ocean Technologies for Sustainable Coastal Resource Management	Isa ELEGBEDE	Lagos State University
0915-0930	Transforming Marine Spatial Planning Education in the Age of Digital Twins	Shenghui LI	Guangdong Ocean University
0930-0945	iDOLPHIN Project on Chinese White Dolphins: A Case for Crowdsourcing Conservation on Marine Biodiversity	Ruiqiang ZHENG	China Blue Sustainability Institute

**PS-15: Big Data and Applications****Co-Chairs: Toste TANHUA and Dajuan KANG****Time: 0830-1000****Venue: Conference Room 3**

<b>No.</b>	<b>Title</b>	<b>Presenter</b>	<b>Affiliation</b>
0830-0845	Digital Twin for the Marine Plastic Pollution Problem: Future Directions for Research and Development	Daisuke MATSUOKA	Japan Agency for Marine-Earth Science and Technology
0845-0900	Perspectives of Digital Twin of the Rotating Tank based on AI Technology and Laboratory Experimental Data	Changming DONG	Nanjing University of Information Science and Technology
0900-0915	Application of Digital Twin and AI Assessment Model for Intelligent Maintenance of Offshore Floating Structures	Xue JIANG	Zhejiang Ocean University
0915-0930	Utilizing Water Temperature and Ocean Current Distribution Images for Prediction of Set-Net Fish Catches	Takero YOSHIDA	Japan Agency for Marine-Earth Science and Technology
0930-0945	The Visualization of Typical Oceanic Phenomena	Min HE	Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai)
0945-1000	A Scenario-based Information Integration and Interaction Framework based on Large Language Model for Ocean Digital Twin System.	Zhaoyuan YU	Nanjing Normal University