

# Symposium toward Synergistic Observation Networks for Ocean and Earth System Predictions

*Joint meeting of the Observing System Evaluation (OS-Eval TT) and  
Coupled Prediction (CP-TT) Task Teams of OceanPredict*

**Tsukuba, Japan**

**30 November-3 December 2021**



Hosted by

Japan Meteorological Agency (JMA)/ Meteorological Research Institute (MRI)

Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

/Research Institute for Global Change (RIGC)

## Invitation

The Observing System Evaluation (OS-Eval TT) and the Coupled Prediction (CP-TT) Task Team of OceanPredict are organising a joint workshop on

**30 November – 3 December, 2021<sup>1</sup>**

at the [Tsukuba Center for Institutes](#), **Tsukuba, Japan**.

## Attendance

Not only the members of the two task teams (OS-Eval TT and CP-TT) are warmly invited to the meeting, but also

- attendees of previous events of either team
- OPST and OPAS members
- researchers who work in earth system predictions based on ocean data assimilation or evaluation/design of observation networks

**OS-Eval TT and CP-TT members or their substitutes are expressly invited to attend.**

For information about the OS-Eval TT and CP-TT please see our [meeting pages](#) on the OceanPredict website.

## Tentative agenda

### 1. Data Impact Assessment and Observation Network Design

- Impact assessment of present and future observation networks
  - Evaluation of large swath sea level anomaly data (SWOT, COMPIRA, ...)
  - Evaluation of the global Argo Array and its evolution (Argo2020 design)
  - Evaluation of tropical buoys and the TPOS2020 design
- Evaluation of ocean data impacts on coupled prediction and data assimilation
- Design of observation networks for obtaining synergy
  - Synergy from the combination of in situ and satellite data
  - Synergy from the combination of oceanic and atmospheric observations
  - Synergy from the combination of coastal observing networks
  - Synergy from the combination of physical and biogeochemical observations

---

<sup>1</sup> *This symposium was originally planned to be held on 10-13 November 2020 as “symposium on Ocean Observation Impacts in Ocean and earth system Predictions” but postponed due to the pandemic of COVID-19.*

## **2. Development for obtaining synergy from observing Networks**

- Observation operators
  - For new-type observations (Lagrangian trajectories, Ocean current velocities, etc.)
  - For coupled data assimilation system (Radiance, Scatterometer, etc.)
- Modelling of the background errors across multi-physics/domains
  - Across the atmosphere-ocean boundary
  - Across the open ocean-coastal sea boundary
  - Across physical and biogeochemical parameters
- Methods for dealing with correlated observation errors
  - Data Thinning and modelling of observation errors

## **3. Earth System prediction and data assimilation**

- Model and data assimilation development for coupled prediction
  - Earth System modelling
  - Initialization technique, including coupled data assimilation
- Best practices for coupled prediction and data assimilation
  - Operational coupled system design
  - How to mitigate the coupling shock
  - How to generate ensemble members
- Ocean observation timeliness requirements for operational coupled systems
- Robust metrics to assess improvements (statistics of observational-innovations, forecast skill, score-cards, etc)

## **4. Contribution to the UN Decade of Ocean Science**

- Implementation Plan for the UN Decade project SynObs.
- Collaboration among ForeSea, CoastPredict, and Ocean Observing Co-Design
- Communication across modelling and data communities for various earth system domains

## **Meeting organisation**

The meeting at the [Tsukuba Center for Institutes](#) will only take place as planned, if the COVID-19 pandemic has reduced to a point when international travel is more or less normal again, especially travel to and from Japan. In this case, our host will take care of providing meeting rooms, breaks and will also offer a meeting reception. Lunches will

not be provided, but the host will take orders of lunch boxes. Participants can also find lunches in the shopping mall nearby. There are several restaurant and convenience stores around the venue. If the pandemic has not receded sufficiently, the meeting will be postponed again, rather than be held virtually. More information will be provided in a later announcement.

## Contacts

Organising committee members:

- [Santha Akella](#), NASA (CP-TT member)
- [Yosuke Fujii](#), JMA/MRI (OS-Eval TT co-chair)
- [Chris Harris](#), Met Office (CP-TT co-chair)
- [Arun Kumar](#), NCEP (TPOS2020)
- [Shuhei Masuda](#), JAMSTEC (OS Eval TT member)
- [Peter Oke](#), CSIRO (Argo)
- [Elisabeth Remy](#), Mercator Ocean International (OS Eval TT co-chair)
- [Yuhei Takaya](#), JMA/MRI (CP-TT member)
- [Kirsten Wilmer-Becker](#), Met Office (OceanPredict programme office coordinator)