SynObs Steering Team Meeting 4

Agenda

1. Outline of the SynObs Flagship OSE/OSSE

2. Outline of the S2S OSE

3. Data server for sharing the flagship and S2S OSE data

4. Special issue for the showcase activity

5. SynObs web page (and OS-Eval showcase webpage)

6. SynObs activity report to the UN Ocean Decade office

★ Outline of the SynObs Flagship OSE/OSSE

◆ Main Target

  High-resolution Ocean Prediction Systems

◆ OSE Setting

• Period: Jan-Dec 2020 (possibly extend to Dec 2022)

• 10 OSEs are suggested.

• 20% Argo are withheld for the reference data

• Reanalysis and 10 day ocean prediction every 5 day.

• Start the calculation in Apr. and finished in Dec. 2023.

◆ OSSE Setting

• Nature Run: GEOS/NASA high-resolution coupled simulation (Length: about 1 year)

• Kinds of OSSEs have not been decided yet.

• Reanalysis and 10-day ocean prediction

• Start the calculation in June or July?

For OSE and OSSE								
1	CNTL	Ocean Model		SST	Argo 80%	Mooring	Other TS	Alt. (optional)
2	NoAlt	Ocean Model		SST	Argo 80%	Mooring	Other TS	
3	NoArgo	Ocean Model		SST		Mooring	Other TS	Alt. (optional)
4	NoMoor	Ocean Model		SST	Argo 80%		Other TS	Alt. (optional)
5	NoSST	Ocean Model			Argo 80%	Mooring	Other TS	Alt. (optional)
6	NoInsitu	Ocean Model		SST				Alt. (optional)
7	SSTonly	Ocean Model		SST				
8	Free	Ocean Model						
9	HalfArgo	Ocean Model		SST	Argo 40%	Mooring	Other TS	Alt. (optional)
10	Oper	Ocean Model	Oper. Setting	SST	Argo 100%	Mooring	Other TS	Nadir Altimeter

◆ Guideline

https://docs.google.com/document/d/1Py7QY1tI6hlaqeQ079ndB3u2w8UAh98uPjPxOcKbrfw/edit

★ Analysis and Output data for the flagship OSEs/OSSEs

◆ **Analysis**

- Ask several voluntary groups for analyzing specific regions or diagnostics.

- We expect supports from Ocean Observing CoDesign, TPOS, Argo, etc.

- The analysis groups decides the detail of analysis by themselves.

◆ **Output from Reanalsis (about 170GB for 1 year, 1 OSE)**
  1. ¼-deg resolution, 5-daily: 3D TSUV, SSH, SIC, SIT, Surf. Flux, A Inc., W at 50m
  2. 1/10-deg resolution, Daily: 1m TSUV, SSH, MLD, Z20, Z26, TCHP, 10-20m UV, 0-50m T
  3. Values at positions and times observed by reference Argo, Drifters, Tropical Moorings

◆ **Output from Predictions (about 130GB for 1year, 1 OSE)**
  1. Average in the Pentads 1 and 2: 3D TSUV, SSH, SIC, SIT, Surf. Flux, W at 50m
  2. Average in Days 1, 5, and 10: 1m TSUV, SSH, MLD, Z20, Z26, TCHP, 10-20m UV, 0-50m T
  3. Values at positions and times observed by reference Argo, Drifters, Tropical Moorings (in Pentads 1 and 2)

◆ We will finalize the guideline after we discuss with Ocean Observing Co-Design Exemplars.

★ Outline of the S2S OSE/OSSE

◆ **Main Target**: Ocean Reanalysis System for coupled predictions (ECMWF, NOAA/NCEP, NASA/GMAO, JMA)

◆ Requested by TPOS and Led by M. Balmaseda (ECMWF)

◆ **OSE Setting**
- Period: 2003-2022
- Reanalysis, 32-day forecasts from every month, 4-month forecasts (more than 10 ensemble members) from May and Nov.
- Other OSE settings are Same as the flagship OSEs.
- Start the calculation in Apr. and finished in Dec. 2023.

◆ **Output from Reanalsis**
1. Native grid, pentad data: 3D TSUV, SSH, SIC, SIT, Surf. Flux, A Inc., W at 50m (I feel it may be too large.)
2. Values at positions and times observed by reference Argo, Drifters, Tropical Moorings?
3. Monthly native grid data: UxT, VxT
4. 5-daily 3D ¼ x 2 deg T, S, U in 11S-11N

◆ **Output from Predictions**
1. Daily mean until Day 7, Weekly mean until Week 4, Monthly mean until Month 4 for all ensemble members
   - ✓ Ocean: 1m TSUV, SSH, MLD, ILD, Z17, Z20, Z26, Z28, TCHP, 10-20m UV, 0-50m T, 0-300m T, 0-300m S
   - ✓ Atmos.: T2m, U10m T, U, V, Z, Q at selected levels, Surf. Flux, MSLP, Total Cloud cover, OLR, TOA.
2. For MJO: Daily OLR, U200, U850

◆ **Ocean assimilation/reanalysis groups who agree on the protocol can join the reanalysis part of the S2S OSEs.**

★ Data server for sharing the flagship and S2S OSE data

◆ JAMSTEC-APL accepted our offer to provide 300TB online data storage for storing the flagship OSE/OSSE data (and S2S OSE data if affordable.)

   Miyazawa_san is a responsible person from JAMSTEC-APL.

◆ We need to decide a common format for the common dataset (netCDF? Levels?, etc.) in next a few months.

◆ Analysis groups can download the data from the data storage if the resolution/format is suitable for their purpose. Or they can directly request the data to the data producer.

◆ It is noted that we still recommend data producers to store the individual simulation results with the recommended resolutions also by their own.

★ Special issue for the showcase activity

◆ We plan to publish special issues twice in the SynObs project period.

◆ We plan to publish the 1st special issue in 2024. (1st submission deadline: Dec. 2023)

◆ Results of the flagship OSEs/OSSEs and S2S OSEs will be included in the 2nd special issue.

◆ We inform our plan to generate a special issue to Frontiers in Marine Science.

◆ We need to provide the proposal of the 1st special issue.

https://drive.google.com/file/d/1RioTN1H6xPZBah1ug54QwZ_xyQrVW1TQ/view?usp=share_link

◆ Can I ask someone in ST to manage the special issue mainly?

★ SynObs Webpage

◆ SynObs official webpage is published in the OceanPredict site under the ForeSea webpage. (Concern: the place is currently too deep!?)

◆ Elisabeth and Yosuke can directly edit the pages as well as Kirsten.

◆ Although I or Elisabeth may edit daily communications directly, we ask OP project office (or ForeSea Project Office) to mainly manage the webpage.

◆ Do we also put the showcase webpage in the OceanPredict site?

◆ The showcase webpage will include keywords, an abstract and slides of OS-Eval studies (we will not include recording files, so the data will be enough small.)

◆ The only problem is human resource. Can we also ask creation of the webpage to the OP project office?

★ SynObs activity report to the UN Ocean Decade office

◆ Reporting period: Jul. 2022 – Jun 2023

◆ Deadline: May 7th

◆ Requested items

  ✓ Number of knowledge products (peer reviewed publications, Grey literature, white papers policy briefs, Media articles, etc.)

  ✓ Number of citations!?

  ✓ Number of infrastructure elements implemented for multi-hazard early warning services, GOOS or digital ocean representations) and funding status and users for it.

  ✓ Number and top 10 countries of partner institutions

  ✓ Number and top 10 countries of involved people

  ✓ Qualitative description on the activities.

  ✓ Count of visitors to the SynObs website.

  ✓ Reach and number of followers of the social media platforms

  ✓ URLs for the activities.

◆ Link of the forms

  https://drive.google.com/file/d/1OB8WnD6td522wQKmPRnA6LXjPjoUSAk8/view?usp=share_link