



# *SynObs Web Meeting 8*

## Agenda

1. Plan of the flagship OSSEs
2. Current status of the flagship OSEs
3. Plan of the papers introducing SynObs and the early results of flagship OSEs.
4. Recent Activities and communications.

# ★ OSSE setting Proposal

	Name	Assimilating Observations					
1	CNTL	SST	Argo 100%	Old TPOS	Other TS	Alt. (optional)	
3	NoArgo	SST		Old TPOS	Other TS	Alt. (optional)	
2	NoAlt	SST	Argo 100%	Old TPOS	Other TS		
4	SWOT	SST	Argo 100%	Old TPOS	Other TS	Alt. (optional)	SWOT
5	SWOTNoArgo	SST		Old TPOS	Other TS	Alt. (optional)	SWOT
6	SWOTNoAlt	SST	Argo 100%	Old TPOS	Other TS		SWOT
7	MultiSwath	SST	Argo 100%	Old TPOS	Other TS	Alt. (optional)	SWOT Swathx2
8	NewTPOS	SST	Argo 100%	New TPOS	Other TS	Alt. (optional)	
9	Argox2	SST	Argo 200%	Old TPOS	Other TS	Alt. (optional)	
10	Gliders	SST	Argo 100%	Old TPOS	Other TS	Alt. (optional)	Gliders
11	SurfV	SST	Argo 100%	Old TPOS	Other TS	Alt. (optional)	SurfV

## ◆ Reference and Calibration

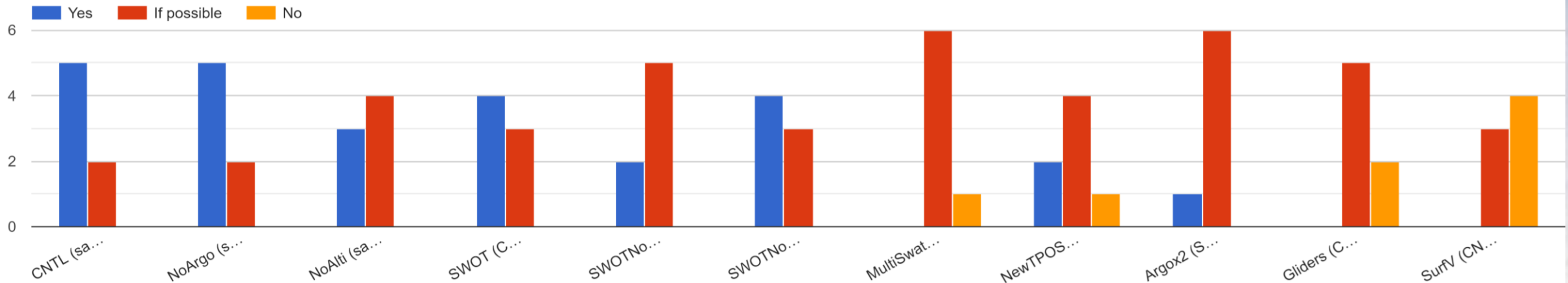
- ✓ **CNTL, NoArgo, NoAlt**: with the same setting as in OP OSEs.
- ✓ **SWOT, SWOTNoArgo, SWOTNoAlt**: Add SWOT to the 3 OSEs above.
- ✓ **MultiSwath**: CNTL+SWOT+ other 2 Swath
- ✓ **NewTPOS**: Replace the old TPOS with the new TPOS
- ✓ **Argox2**: Argo are doubled.
- ✓ **Gliders**: Add TS in the marginal and shelf seas
- ✓ **SurfV**: Add surface current Obs by the expected satellites

◆ **Use the observed positions at 2008-2010 to create the synthesized (virtual) observations.**

◆ **Use GEOS/NASA high resolution coupled simulation as the Nature Run**

# ★ Can we fix the plan of OSSEs?

## Result of the survey on potential implementation of OSSEs (7 potential)



◆ Are there any other OSSEs we should implement?

◆ Is the number of expected participants sufficient?

◆ Tentative Schedule

✓ Until Jun. 2024: Production of the virtual observation data

✓ Jul.-Dec 2024: Data Assimilation OSSEs

✓ Jan.-Jun. 2025: Ocean Prediction OSSEs

☐ Basically, the OSSEs will start after the OSEs are completed.

➤ **Can we fix the tentative plan and OSSE settings as proposed?**

➤ **Next Step: Creating the virtual observations. We need some volunteers!**

# ★ Current status of the flagship OSEs

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- ◆ A couple of centers completed the assimilation OSEs. Other centers are currently performing OSEs.
  - Brief introductions of results from ECCO and JAMSTEC.
- ◆ The sever for the SynObs flagship OSEs/OSSEs have almost been installed. We will provide information on how to transfer the data of OSE results to the server.
  - Via. Internet: Each prediction center puts the data at their own server or intermediate webospace prepared by SynObs and JAMSTEC gets the data from there. (Is the transfer sufficient fast?)
  - Via. Shipping (If the internet transfer is too slow.)
  - We currently make a survey about the sever environment of each centers on the Slack. (If you are in a prediction center and you do not have access to the Slack please inform me.)



# ★ Flagship OSE introduction Papers (suggested context)

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## ◆ **The Editorial Paper of the Frontiers in Marine Science Special Collection** (3 figures?)

- Background, motivation, and aim of SynObs
- Outline of the SynObs flagship OSEs (and OSSEs?). Description of participating systems
- Comparison of vertical profiles of the TS RMSDs from reference Argo data averaged in the global ocean for each system

## ◆ **Introduction paper submitted to more popular journal** (e.g., BAMS)

- Background, motivation, and aim of SynObs
- Outline of the SynObs flagship OSEs (and OSSEs?). Description of participating Systems
- Comparison of vertical profiles of the TS RMSDs from reference Argo data averaged in some selected region for each system.
- Comparison of multi-system ensemble spread between CNTL and NoArgo or NoInsitu.
- Some preliminary analysis done by participating prediction centers or some preliminary analysis performed by volunteer analysis groups.

# ★ Recent Activities and Communications

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- AGU: Poster presentation by S. Kido on Jan. 24<sup>th</sup>.
- Ocean Science Meeting 2024: Presentation by Y. Fujii on Feb. 20<sup>th</sup>
- UN Ocean Decade Conference 2024 (Apr. 10-12): Presentation by E. Remy. Co-organized a session with Ocean Observing Co-Design.
- EGU 2024: SynObs session is cancelled. Presentation by Y. Fujii and others
- WMO Observation Impacts Workshop: 6(?) abstracts related to SynObs were submitted.
- Frontiers in Marine Science Special Collection
  - 3 manuscripts (/ 20 abstracts) have been already submitted.
  - The current deadline is Feb 25<sup>th</sup>. (How about extending it to around May 31<sup>st</sup>?)
  - Accepted papers will be published online without waiting for other papers to be accepted.
- We have sent the summary on the requirements of Argo for ocean predictions to the Argo Science Team and confirmed the official collaboration between the Argo Science Team and SynObs.
- Table for the use of ocean observation data in operational ocean prediction systems:  
<https://oceanpredict.org/observations-use>
- Please input information of literature contributing to SynObs for the annual activity report to IOC.  
[https://docs.google.com/forms/d/e/1FAIpQLSeC4fa75O5awt3hmeCBtB2h5AuUqbwbVJLEURi-Pm9ff4mYuw/viewform?usp=sf link](https://docs.google.com/forms/d/e/1FAIpQLSeC4fa75O5awt3hmeCBtB2h5AuUqbwbVJLEURi-Pm9ff4mYuw/viewform?usp=sf_link)

# ★ Notes

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- It is approved to fix the flagship OSSE setting.
- We will be looking for volunteers for generating virtual observation through the mailing list.
- Discussion on OSSEs
  - High resolution is necessary to get impacts of SWOT.
  - Some development may be required to assimilate SWOT, surface V, etc. effectively.
  - It is not straightforward to put errors on the virtual observation.
  - Generating common observation promotes development and preparation for OSSEs.
  - It is good that some groups focusing on OSSEs start the OSSEs earlier than schedule.
- Yosuke will inform (or start discussion on) what data or results will be used in the introductions paper.
- Existing prediction OSE results will be added to the papers to appeal the prediction OSEs.
- Based on the survey, we now encourage prediction centers to perform CNTL, NoArgo, and NoInsitu, first. (We also encourage to perform NoAlt for OP OSEs although it was not mentioned at the meeting.)
- The deadline of the Frontiers special collections is likely to be extended to May 31<sup>st</sup>
- We are now trying to improve the SynObs webpage on the OceanPredict site for enhancing the communication among the members. Considering to use other methods (Teams, Slack, etc.) may be considered.