

## 9<sup>th</sup> COSS-TT meeting Welcome & Meeting objectives

*COSS-TT co-chairs:*

*Villy Kourafalou*

*Alexander Kurapov*

*Pierre De Mey-Frémaux*



[oceanpredict.org/events/coss-tt-international-coordination-meeting-9](https://oceanpredict.org/events/coss-tt-international-coordination-meeting-9)

2-4 May 2023, ECCO, Montréal, Canada

*Welcome to this 9<sup>th</sup> COSS-TT meeting held in Montréal. It comes after the 8<sup>th</sup> meeting held online last year, and is the first face-to-face COSS-TT meeting since the Madrid meeting hosted by Puertos del Estado on September 19-21, 2018.*

*We are very happy to meet you all again in person. Thank you all for your faithful participation during these three days, in person or online.*

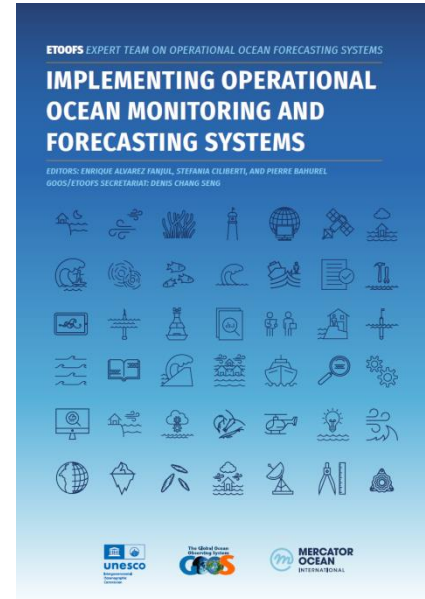
*A triple THANK YOU / Un triple MERCI to our ECCO hosts, in particular Greg and Jean-Philippe, who in the end had to prepare three meetings (2020, postponed, 2021, postponed, and finally this one)!*

*THANK YOU to Kirsten for her great help and skill at shaping up this meeting and interacting with all of you!*

- Alexander Kurapov, NOAA is now a co-chair of the Task Team.
- After 2 TT meetings cancelled in 2020 and 2021, the **8th COSS-TT meeting** was held online on 12-13 April 2022 > scientific presentations (21), discussion on major science challenges, on Decade actions, on evolutions of our ToRs, Focus Areas, and membership.



- TT members wrote coastal sections of ET-OOFS “Guide on Operational Ocean Monitoring and Forecasting Systems” >. The Guide was officially published by UNESCO in June 2022.
  - The TT contributed to a 10-page all-in-1 table >> with large-scale, regional, coastal and local ocean forecasting systems, many from OceanPredict and from the COSS-TT.
- Coastal Systems Information Table updated (Pierre, Mauro, Kirsten), available on web site.
- The TT pursues a significant involvement in UN Ocean Decade. (*Dedicated session*)



NOAA Coastal Ocean Modeling Seminars:  
<https://coastaloceanmodels.noaa.gov/seminar/>

- A contribution to COSS-TT goals by NOAA partners
- A pathfinder event to facilitate exchange of ideas and science discussions via WWW
- A community of 250+ ocean modelers and scientists (from Alaska to Finland and Africa; NOAA, other agencies, academia, private sector)
- 2-4 seminars / month, since 2019
- Focus on **science in support of coastal ocean modeling and forecasting systems**



[Home](#) [Seminars](#) [WCOFS](#) [Coupling](#) [ESTOFS](#) [GitHub](#)

## NOAA Coastal Ocean Modeling Seminars

Past Seminars (in reverse chronological order)

**7 February, 2023**

Impacts and Dynamics of Hurricane-induced Ocean Adjustments along the U.S. Southeast coast  
Kyungmin Park (Pacific Northwest National Laboratory)

**31 January, 2023**

Remote internal wave forcing of regional ocean simulations near the U.S. West Coast  
Oladeji Siyanbola (University of Southern Mississippi)

- *A need to extend the effort to the other side of the globe*
- *Other ways to use online interaction to exchange science?*

- Restore and re-enforce international links between coastal ocean modelers through *in-person communication*
- Scientific presentations and discussions:
  - Review advances in the coastal ocean forecast systems development and implementation (**FA-2**)
  - Review new science in support of our activities:
    - **FA-1** – Science in support of Coastal Ocean forecasting
    - **FA-3** – Seamless integration between Coastal/Regional systems and Large scale systems
    - **FA-4** – Synergy between altimetry and modelling in coastal regions
    - **Special theme 5** – Machine Learning contributions to regional and coastal data analysis and forecasting
- UN Ocean Decade session:
  - How can the COSS-TT community meet the challenges of the Decade, and engage in concrete contributions to the projects which are now starting?
  - Help identify a roadmap towards concrete involvement -- set priorities
- “Business” TT meeting
  - Focus Areas, Decade actions, membership, etc.
  - Reporting in plenary



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“Business” TT meeting

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2-4 May 2023, ECCO, Montréal, Canada



- Tal Ezer’s short presentation on new COSS-TT Special Issue / Topical Collection & discussion on editors

1. Another look at some of the priorities from the 2021 meeting (Pierre)
2. New TT Focus Areas (Pierre)
3. Decade actions (e.g. GC sites) + beyond this meeting (Villy)
4. Membership (Villy)
5. Next meeting and AOB (Villy, Alex, Pierre)

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- Need for closer interaction with OP “national systems”
- Need for fit-for-purpose OP large-scale estimates for coastal systems (COSS-TT) and CP uses
- Farther reach via “global coastal ocean” concept and CO typology
- Advance and promote good COF practices within an integrated downscaling/modelling/observation framework (OceanObs paper; promotion via ET-OOFS)
  - Definition of suitable coastal in situ observing systems (with OSEval-TT, SynObs, co-design w/GOOS)
  - Good practices for assessment in coastal regions, added value of downscaling (with IV-TT)
  - Good practices for using future altimetry data in coastal regions (with SWOTST?)
- Role of ML/DL in the CO, esp. given our sparse obs. networks (and perhaps AI for digital twins)
- Extend COFS to include estuaries/deltas as an integrated system (up to catchment area)
- Assess the quality of surface current estimates in regional/coastal systems, and develop better approaches
- Coastal vulnerability: advances on coastal relocatable models for emergency situations
- Assess multidisciplinary extended range predictive capabilities for the coastal zone (from events to climate) – test atmospheric forcing capabilities in CO – “Coastal CMIP” (w/ CP-TT?)

*See full 2021 Meeting Report on web site for a more complete account*

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1. **Science** in support of Coastal Ocean forecasting
2. Coastal and Regional (pre-)operational ocean **forecasting systems** and applications
3. Seamless **integration** between Coastal and Regional systems (R/COFS under COSS-TT) and Large scale systems (LOFS under OceanPredict)
4. Synergy between **altimetry and modelling** in coastal regions

- Basis: several sessions and discussions at the 2021 and 2022 TT meetings
- Evolve TT's Focus Areas – Logic:
  - Refocus our science to better respond to the new challenges; facilitate reporting
  - Better integration with OP/FS: seamless modelling aspects + validation, etc.
  - Coordination with CP: coastal continuum, vulnerability, possibly GlobalCoast
  - Observing infrastructure incl. observations integration with models, OSE/OSSEs
- Adapt TT membership to the new challenges: *(started)*
  - People active in relevant Ocean Decade actions
  - Best Practices re: new FA themes
  - TBFD.
- Keep TT's ToR unchanged: *“Foster international collaboration to advance science and expertise in support of regional/coastal ocean forecasting”*

- **FA-1: Observing infrastructure in the coastal seas, integration with models and with forecasting** (includes potential collaborations with SynObs, OSEval-TT, IV-TT)
  - Best Practices regarding coastal observing systems (satellite & in situ) -- e.g. OSE/OSSE, ...
  - Best Practices for model assessment in coastal regions -- e.g. “added value” type metrics, ...
- **FA-2: COSS modelling and seamless integration with larger-scale estimates** (OP integration)
  - Coastal/regional ocean forecasting systems -- e.g. Systems Information Table, ...
  - R&D: models, data assimilation, ML, downscaling/upscaling -- e.g. gap analysis, new schemes, ...
  - Coastal short time and space scales, comparison with large scale estimates -- coastal added value, ...
- **FA-3: Land-Ocean Aquatic Continuum (LOAC): integration of coastal ocean and estuaries/deltas/wetlands, coastal cities** (potential CoastPredict collaboration, GlobalCoast)
  - E.g. R&D on ML, case/pilot sites for LOAC integration, ...
- **FA-4: Coastal projections & scenarios, coastal vulnerability** (potential CP coll., GC)
  - E.g. R&D on ML or probabilistic estimates, case/pilot sites for coastal vulnerability, advances on coastal relocatable models for emergency situations, ...

→ Priorities?



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## The Landscape:

- DCO (Decade Coordination Office): GOOS (DCO for Ocean Observing)
- DCC's (Decade Collaborative Centers): OceanPrediction, Coastal Resilience, ...
- Programs: ForeSea, CoastPredict, *DITTO*, *Global Estuaries Monitoring (GEM)*, *Mega-Delta*, *Ocean Cities Network*,...
- Projects: SynObs, PredictOnTime, FLAME,.../ Global Coast

## The Challenge: Identify a roadmap towards concrete involvement.

- Presentations/discussions in Montréal: PredictOnTime, FLAME, GlobalCoast, *ForeSea*, DCC-OP
- SynObs/OSEval-TT: ongoing discussions on coastal OSE contributions to flagship OSE (coastal array design and array impact, coastal/shelf extension of ARGO/glider), TT participation in Regional Analysis Group, ...
- Coordination/guidance expected at OP level

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## COSS-TT members April 2023

No	First name	Surname	Affiliation	Email address	Country	Status
1	Lucy	Bricheno	NOC	luic@noc.ac.uk	UK	Member
2	Guillaume	Charria	Ifremer/Previmer	guillaume.charria@ifremer.fr	France	Member
3	Byoung-Ju	Choi	Chonnam National University	bchoi@jnu.ac.kr	South Korea	Member
4	Mauro	Cirano	REMO	mauro.cirano@gmail.com mauro.cirano@igeo.ufrj.br	Brazil	Member
5	<b>Pierre</b>	<b>De Mey-Frémaux</b>	<b>LEGOS</b>	<b>demey-redir@neyak.org</b>	<b>France</b>	<b>Co-chair</b>
6	Chris	Edwards	UC Santa Cruz	cedwards@ucsc.edu	USA	Member
7	Ivan	Federico	CMCC	ivan.federico@cmcc.it	Italy	Member
8	Marcos	Garcia Sotillo	Nologin Ocean Weather Systems	marcos.sotillo@nologin.es	Spain	Member
9	Mike	Herzfeld	CSIRO	mike.herzfeld@csiro.au	Australia	Member
10	Naoki	Hirose	Kyushu University	hirose@riam.kyushu-u.ac.jp	Japan	Member
11	Lars	Hole	Met.no	larsrh@met.no	Norway	Member
12	Jennifer	Jackson-Veitch	SAEON	jenny@saeon.ac.za	South Africa	Member
13	Gan	Jianping	Hong Kong University	magan@ust.hk	China	Member

# COSS-TT members April 2023 *(cont.)*

No	First name	Surname	Affiliation	Email address	Country	Status
14	Rob	King	Met Office	robert.r.king@metoffice.gov.uk	UK	New member
15	Villy	Kourafalou	University of Miami	vkourafalou@miami.edu	USA	Co-chair
16	Alexander	Kurapov	Oregon State University	Alexander.Kurapov@noaa.gov	USA	Co-chair
17	Bruno	Levier	Mercator Ocean	blevier@mercator-ocean.fr	France	Member
18	Guimei	Liu	NMEFC	liugm@nmefc.cn	China	Member
19	Youyu	Lu	DFO	youyu.lu@dfo-mpo.gc.ca	Canada	Member
20	Paolo	Oddo	UniBo	paolo.oddod@unibo.it	Italy	Member
21	Nadia	Pinardi	Coastal Resilience DCC	nadia.pinardi@unibo.it	Italy	Member
22	Marie-Isabelle	Pujol	CLS	mpujol@groupcls.com		New member
23	Yeqiang	Shu	South China Sea Institute of Oceanography, CAS	shuyeq@scsio.ac.cn	China	Member
24	Emil	Stanev	HZG	emil.stanev@hzg.de	Germany	Member
25	Joanna	Staneva	HZG	joanna.staneva@hzg.de	Germany	Member
26	Peter	Zavialov	P.P.Shirshov Institute of Oceanology RAS	peter@ocean.ru	Russia	Member
<b>Champion</b>						
27	Pierre-Yves	Le Traon	MOI	pletraon@mercator-ocean.fr	France	Champion

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- Online meetings vs. in-person vs. hybrid: discussion...
- Offers for in-person meetings
  - Brittany (G. Charria, Ifremer)
  - ?
- Best time for next meeting?
- AOB
- Thanks to all!