OPST-11

Coastal Ocean and Shelf Seas Task Team (COSS-TT)
(Chairs: Alexander Kurapov and Joanna Staneva)

The main goal and central mission of the COSS-TT is to work within OceanPredict Programme towards the provision of a sound scientific and expert basis for sustainable multidisciplinary downscaling and forecasting activities in the world's regional and coastal oceans.

COSS-TT fosters international coordination to advance science and expertise in coastal ocean prediction and forecasting

Main activities:

- COSS-TT in-person meeting, 17-20 June 2026
- Topical issue at Ocen Dynamics
- Science webinars
- Contribution to the UN Ocean Decade activities

COSS-TT in-person meeting, IFREMER, Brest-Plouzané, France, 17-20 June 2026

Many thanks to Dr. Guillaume Charria and IFREMER!

Many thanks to Kirsten and Stéphanie!

https://oceanpredict.org/docs/Documents/Task%20Teams/COSS-TT/Meetings/June-2025/Report/COSST-TT-Ifremer-report-June2025-final.pdf

- Science presentations around the COSS-TT themes (39 presentations)
- Posters (20+)
- Discussions
- Breakout sessions
- Coffee breaks, lunches, networking events

15 out of 29 COSS-TT members were present (from Europe, USA, Brazil, China, Hong Kong, S. Korea, Australia)

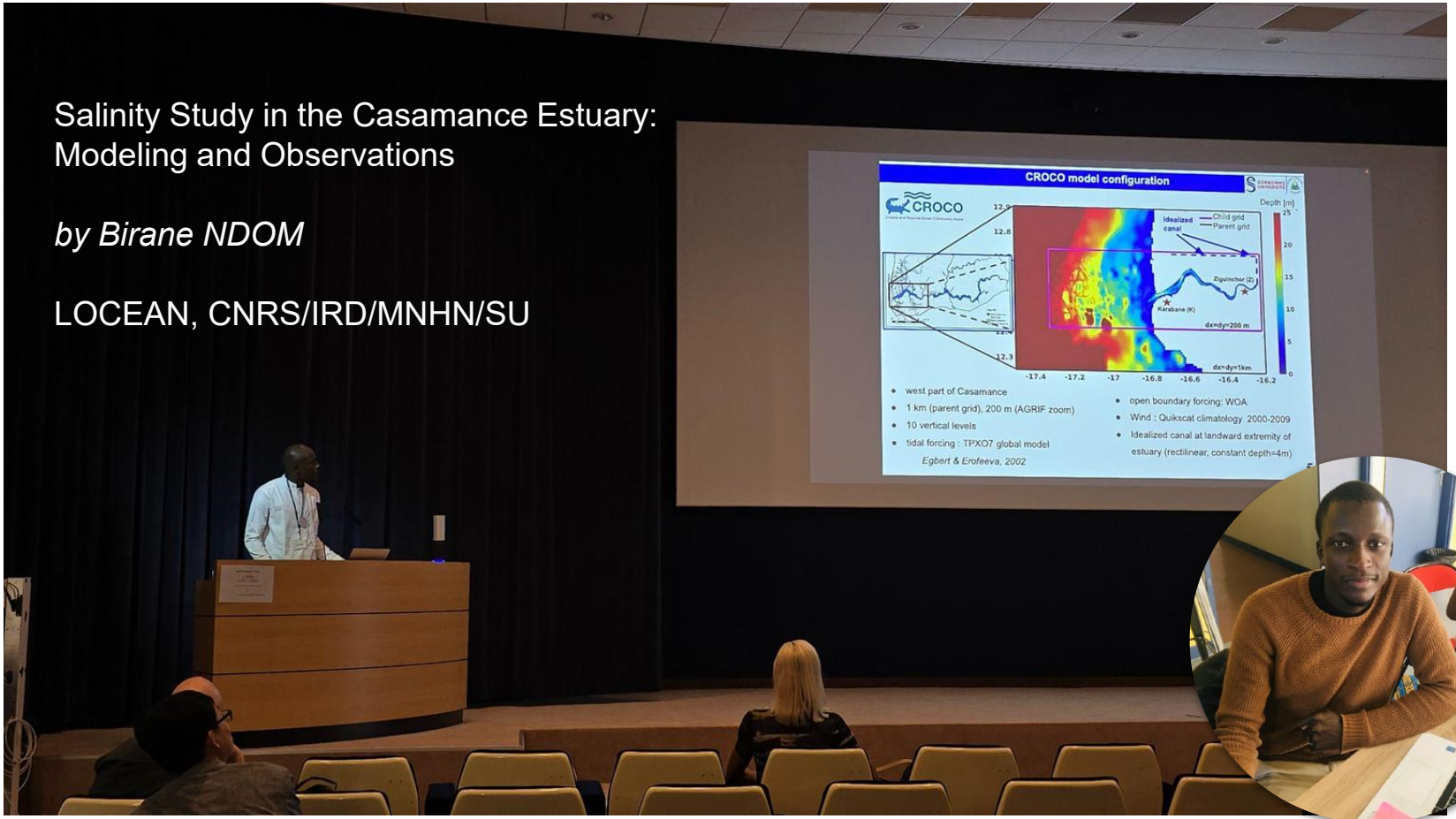
Themes:

- Observing infrastructure in the coastal seas, its integration with ocean model, prediction and forecast systems
- Ocean modelling at the regional and shelf sea spatial scales and seamless integration with larger-scale estimates
- The land-ocean continuum: integration of models for coastal ocean and estuaries/deltas/wetlands, including effects on urban built environments/coastal cities
- Coastal projections and scenarios, coastal vulnerability, wave and storm surge impacts in the coastal zone
- AI/ML applications in the coastal ocean prediction
- User applications and decision tools in the coastal ocean (including Digital Twins)
- The role of the COSS-TT in the UN Ocean Decade and beyond

Salinity Study in the Casamance Estuary: Modeling and Observations

by Birane NDOM

LOCEAN, CNRS/IRD/MNHN/SU



Breakout working groups (younger researchers were very enthusiastic about these discussions in smaller groups !!!):

- Integrated Observations – Modelling Framework
  - What observational data are most critical for high-resolution coupled models?
  - How can we better align observations and model design?
  - What partnerships can support bridging observational gap?

- Artificial Intelligence (AI), Data assimilation (DA) and Digital twins
  - What hybrid DA/AI or physics-informed approaches are most promising
  - What are the main barriers (data, skills, computer resources)?
  - How to ensure transparency and uncertainty quantification in AI enhanced systems?

- Designing Coastal Services for Societal Transformation
  - How can communication with stakeholders and ocean literacy be improved?
  - What use cases (e.g., adaptation, coastal risk) should guide service evolution?
  - What role can citizen science and participatory approaches play?

Next COSS-TT meeting?

… being discussed … Brazil, Nov/Dec 2026 (?)

Topical Collection on the Coastal Ocean and Shelf Seas Task Team (COSS-TT) meeting, Montreal, Canada, May 2–4, 2023

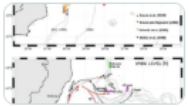
In Ocean Dynamics

(editors: Kurapov, Cirano, Dabrowski, Forbes)

The Brazil current and intermediate Western boundary current flows through the Vitória-Trindade Ridge - South Atlantic ocean

Fernando Dix T. Barberini, Afonso M. Paiva ... Mauro Cirano

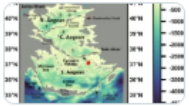
OriginalPaper | 16 May 2025 | Article: 48



Turbidity effects on the Aegean sea surface properties using numerical simulations

Vassiliki Metheniti, Vassilios Vervatis ... Sarantis Sofianos

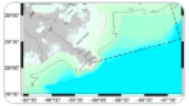
Research | 20 December 2024 | Article: 4



Development of a daily coastal ocean model for Mississippi Sound and Bight

Mustafa Kemal Cambazoglu, Brandy N. Armstrong & Jerry D. Wiggert

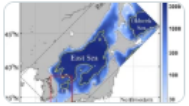
OriginalPaper | Open access | 23 November 2024 | Pages: 987 - 1004



Effects of open boundary bias correction and data assimilation in a regional ocean circulation model for the East Sea

Jae-Sung Choi, Kyungman Kwon & Byoung-Ju Choi

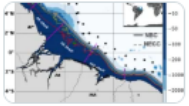
OriginalPaper | 16 May 2024 | Pages: 495 - 509



Pathways of surface oceanic water intrusion into the Amazon Continental Shelf

Pedro Paulo de Freitas, Mauro Cirano ... Vando José Costa Gomes

OriginalPaper | 28 February 2024 | Pages: 321 - 334



Revisiting the leeway of shipping containers: a case study of the M/V Zim Kingston incident

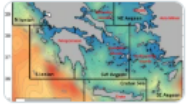
Graig Sutherland, Kuo-Hsien Chang & Paul Pestieau

OriginalPaper | Open access | 03 February 2024 | Pages: 237 - 249

Deep learning-based forecasting of sea surface temperature in the interim future: application over the Aegean, Ionian, and Cretan Seas (NE Mediterranean Sea)

Marios Krestenitis, Yannis Androulidakis & Yannis Krestenitis

OriginalPaper | 13 January 2024 | Pages: 149 - 168



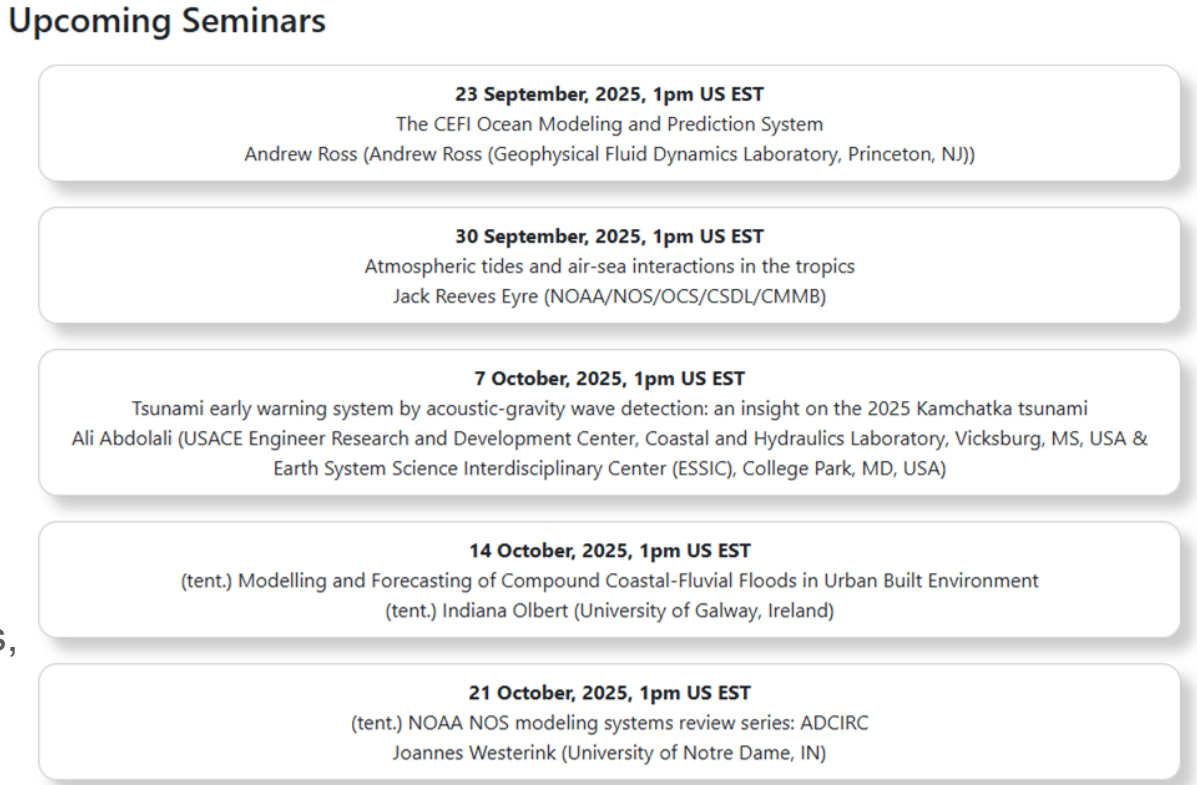
Coastal Ocean Modeling Seminars: https://coastaloceanmodels.noaa.gov/seminar/, regular time: Tue 13:00 US East

Run since Dec 2019 (220 seminars)

39 seminars in 2025 (30%: speakers from outside US, incl. EU, UK, Israel, Brazil, Mexico, Bahamas…)

50-100 attendees in each seminar

Topics include: ocean modeling (from storm surge to shelf, regional, global), process studies, remote sensing, in-situ observations, numerics, DA, AI, etc.



UN Ocean Decade activities:

- One Ocean Science Congress, Nice, France, 3-6 June 2025
  - DITTO (Joanna Staneva, HEREON)

- GlobalCoast (see next 2 slides)

CoastPredict
with The Global Ocean Observing System

- Going forward-

CoastPredict/GlobalCoast and the COSS-TT

- MoU sign-in and participation in CP/GC Pilot Sites
- Science in support of solution-based research
- AI-based forecasting: obs very important (connection to GOOS)
- Expand to Global South
- Education, training, ocean literacy, citizen science

CoastPredict
with The Global Ocean Observing System

GlobalCoast Network

134 Pilot Sites
> 70 countries
> 225 partner institutions

- systematic comparison of solutions and services across remote coastal regions
- synergistic and robust science-based products
- “compare and contrast” to identify global coastal areas where similar (or individualized) solutions can be implemented, tested, and refined