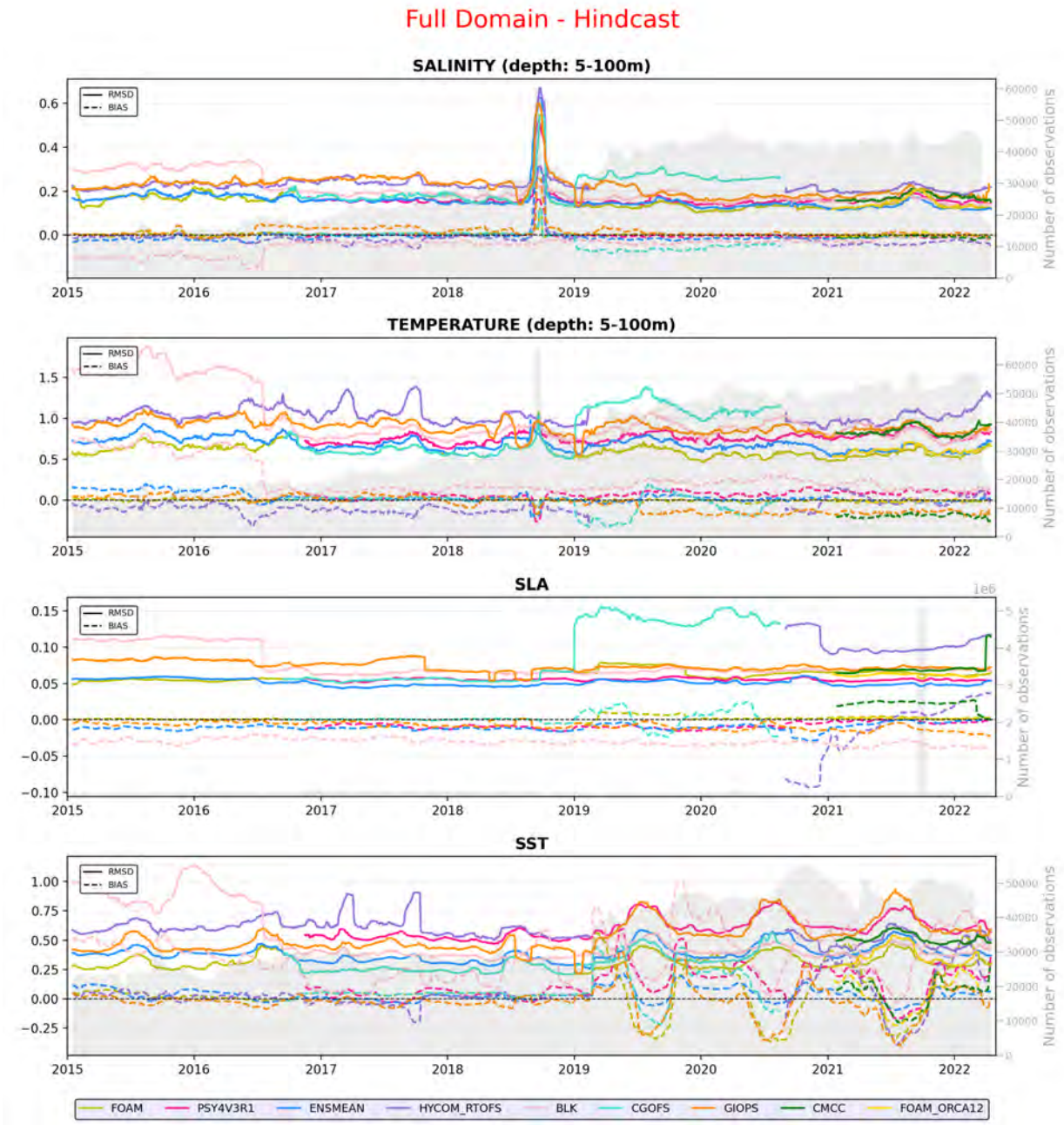
Intercomparison and Validation Task Team

Greg Smith (ECCC) and Fabrice Hernandez (IRD/LEGOS)

IV-TT – Status and plans of TT activities

- **TT activities, goals and expected outcomes (since last OPST meeting)**
  - **Class4 :**
    - **Critical issues with datasets and US GODAE → pb in 2022 - 2023**
      - **Has become major roadblock for ongoing collaboration:** eg blocking point for Mercator Operational validation
    - **Intercomparison on surface drift (lagrangian drifters) published**

    - **OPOS WG (F. Davidson/D. Ford)+ NOAA (E. Smith):** US GODAE server: identify needs and future characteristics: **no real progress since OPST-7**



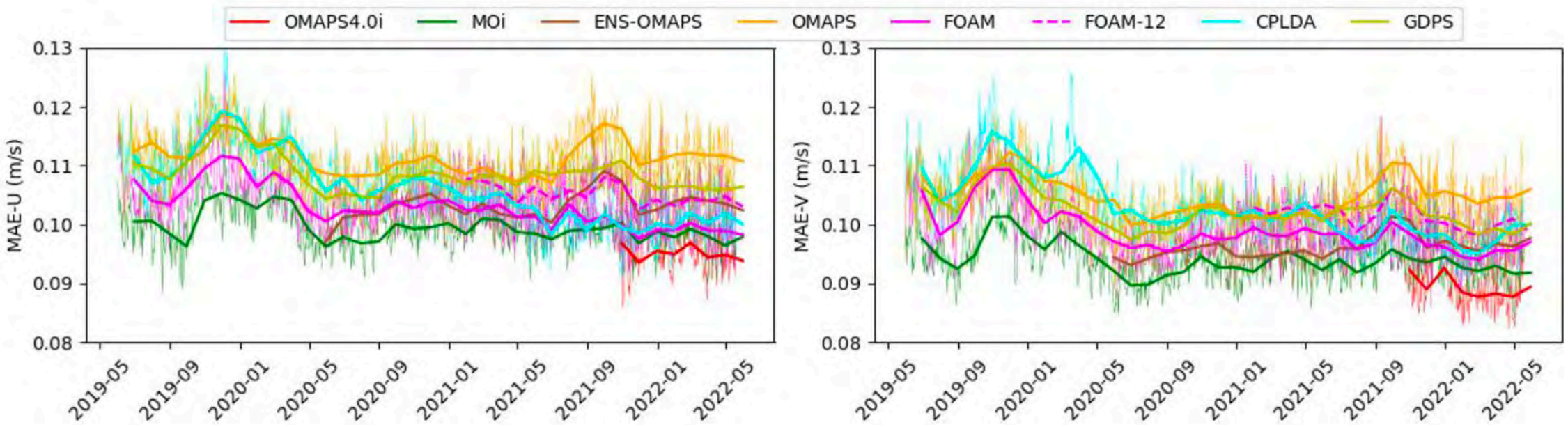
Class 4 global monitoring of OOFS performance

→ *Importance of detailed historical descriptions of the systems characteristics and evolutions ? (role of the OPOS WG?)*

→ *Address performance with more adapted metrics than RMS/Cx etc…*

Courtesy of Charly Regnier, MOI, 2023

Surface Velocity Mean Absolute Error (daily/monthly)



Aijaz et al. 2023

Recent Surface drifter Class 4 intercomparison from ABoM (Aus), MOi (Fr), UK-Met (UK), CCMEP (Ca) initiated by MOi production of real time GDP drifter observations transmitted by the GDAC Coriolis (Ifremer)

→ Benefit of resolution (1/4° vs 1/12°), of atmospheric coupling, of DA…

IV-TT – Status and plans of TT activities

- **TT outreach plans**
  - **IV-TT publication in 2024 (eg, BAMS):**
    - **Evolution of the performance of operational system contributing to Class 4 since 2013**
    - **Evidence changes on EOV due to systems upgrades, observing systems evolution**
    - ***Closing contribution for the Class 4 activity as part as IV-TT* ?**
  - **IV-TT Contribution, support of potential new Ocean Reanalysis Intercomparison in 2024-2025 ?**

IV-TT – Status and plans of TT activities

OceanPredict
Advancing the science of ocean prediction

- **TT events:**
  - **Participation in COSS-TT in 2023**
  - **In person meeting in 2024 to re-define IV-TT objectives and activities:** eg, evolution of Class4 with new sources of observations
  - **Discussing connection with the WCRP panel JWGFVR…**
  - **Contribution to the Ocean Prediction DCC "best practices for operational oceanography" guidance-book**

  - **Seminar series: Every 2-months IV-TT online meetings (separating time zones) in order to share:**
    - **New metrics (blue-white-green)**
    - **Tools (eg, shared on ZENODO, GitHub..)**

- **TT membership update ? Blurred image at the moment…**
  - **Seeking new members for IV-TT and Class4 intercomparison**

IV-TT – UN Decade TT contributions

OceanPredict
Advancing the science of ocean prediction

- **The IV-TT contributions to Decade objectives is indirect:**
  - **Class 4 intercomparison = Best effort, but unique and heritage of GODAE (framework, expertise, team involved worldwide, international recognition of this approach)**
  - **IV-TT provides science based innovation on ways to verify and characterise quality of products for operational oceanography stakeholders**
  - **Identified contributions**
    - **Project 1: Class4 on dedicated mirror dataserver (MOi?)**
    - **Project 2: Uncertainty estimation and drift ongoing, targeting many user-applications**
    - **Project 3: User-relevant and process-based metrics**
    - **Project 4: Regional/Coastal verification with adapted observing system, including ensemble approaches**
  - **F. Hernandez joined the DCC experts for verification/intercomparison aspects**

IV-TT : The future

- **We are at a cross-road: what should be the IV-TT activity after 2024 ?**
  - **The existing Class 4 activity may not "survive" in the future: need dedicated dataserver for being shared by wider actors (regional systems..), and ease future upgrades of metrics computation**
  - **Class 4 activity needs total change of framework with direct involvement of operational centres: committed resources in OOFC, technical framework (eg, continuous regular monitoring), and technical support (eg, data servers)**
  - **The IV-TT expertise and future plans need to focus activity into innovative validation/verification approaches that can be aligned to operational system evolutions**
    - **Evaluation, verification is also carried out by other TT (eg, coastal, biogeochemistry..)**
    - **Implementation and use of metrics for evaluating systems performance may change with new tools (ensemble forecast, coupled systems, digital twin etc..)**