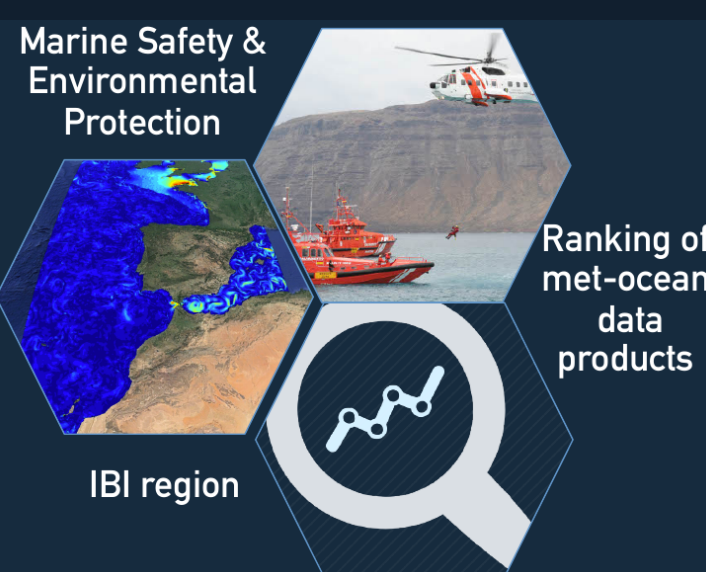




IBISAR: service for real-time ranking of met-ocean data products for emergency and SAR operators

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01 IBISAR service motivation

Users:

- Agencies in charge of Search and Rescue (SAR) operations, marine pollution response, maritime traffic control and modellers.

Key concerns:

- Impact of inaccurate data on decision-making process.
- Lack of available user-friendly automated data quality assessment.

Needs:

- Reliable observations and model forecasts for improving emergency response missions.
- Increasing demand of easy to use indicators to assess ocean model performance.

02 IBISAR service overview

2.1

Objective:

Provide real-time met-ocean product ranking in the IBI area for emergency responders

2.2

Skill assesment:

Lagrangian approach comparing virtual and real drifter trajectories

2.3

SAR operators needs:

User-friendly automated confidence indicator of forecast >>> Easily interpretable metrics

2.4

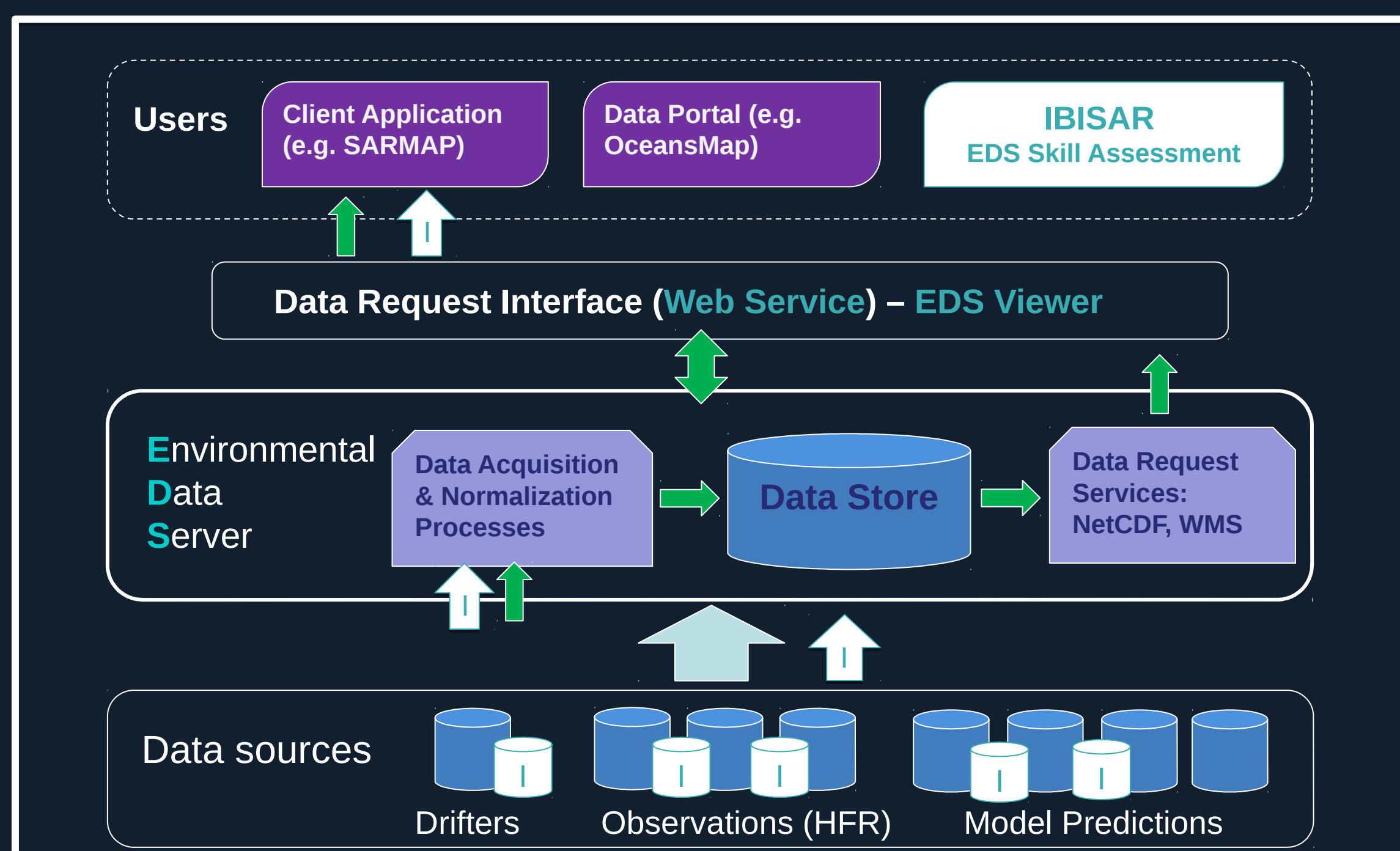
CMEMS products:

MFCs: current forecast
INSITU & Satellite TACs; current data
Upcoming HF radar currents

GOAL: IBISAR service provides real-time information of the most accurate ocean current forecast in the Iberia-Biscay-Ireland (IBI) regional seas. Facilitates decision-making, ensuring our seas are safer and cleaner.



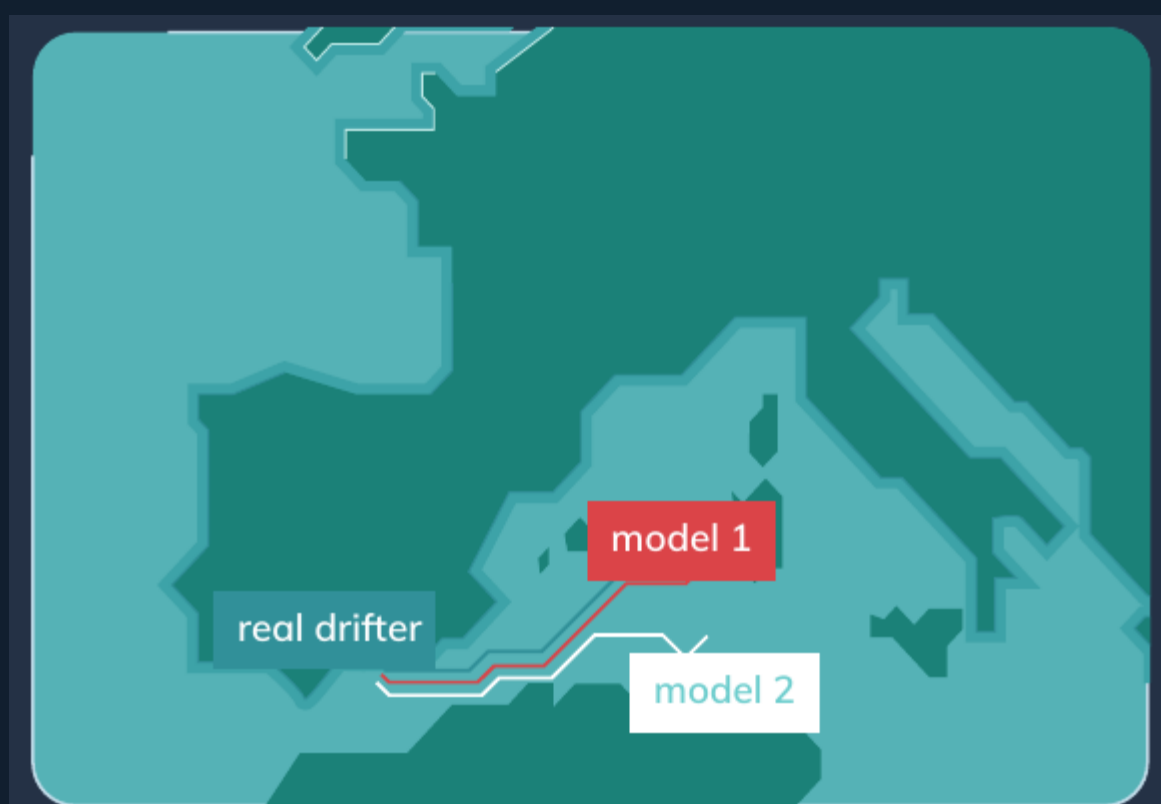
03 IBISAR service architecture



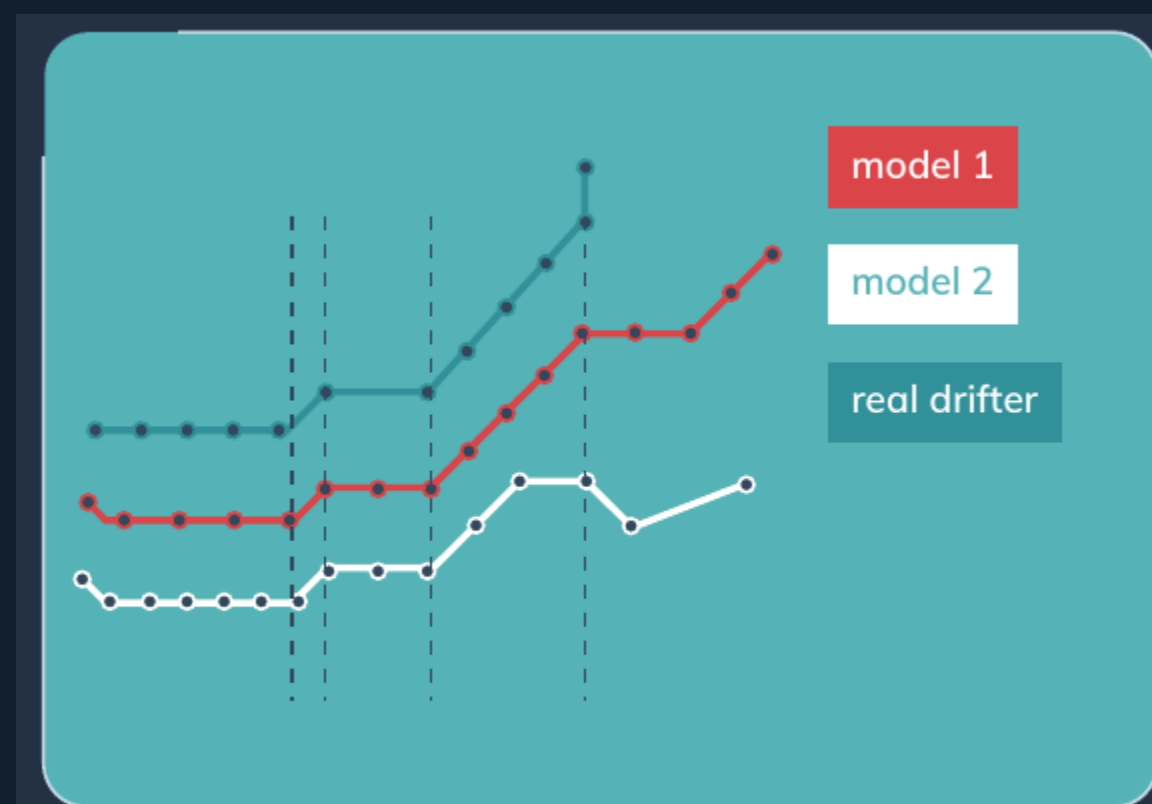
04 IBISAR service benefits

- Single & user-friendly access point
- Regurlaly updated catalogue
- Easily interpretable metrics of accuracy
- Improve rescue operations
- Immediate & more secure response
- Optimal search area planning
- Effective resource allocation
- Improve pollution control operations

05 IBISAR service: accurate data in 3 steps



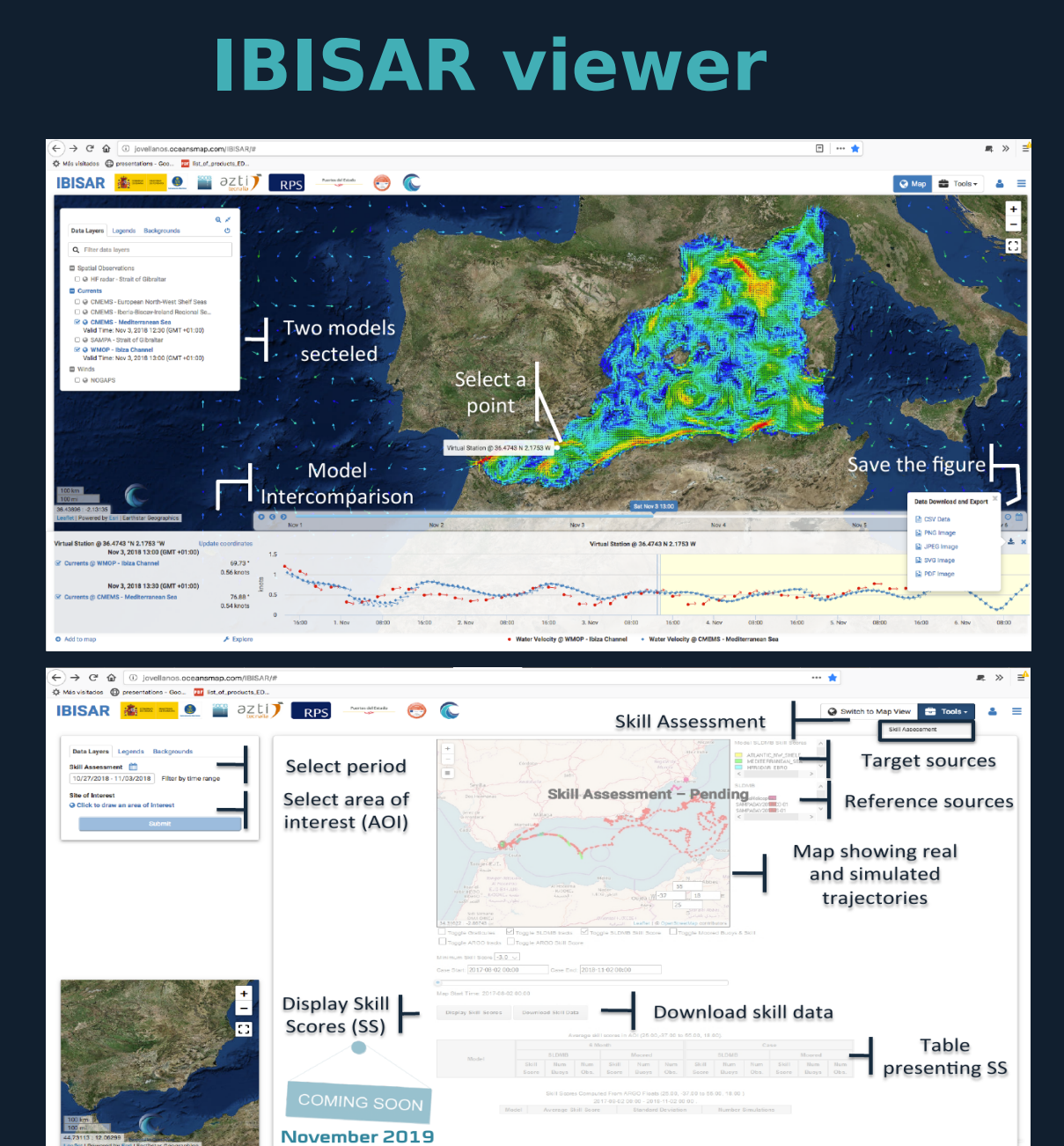
1 Simulates trajectories using available forecast models



2 Compares simulated trajectories vs. real drifters

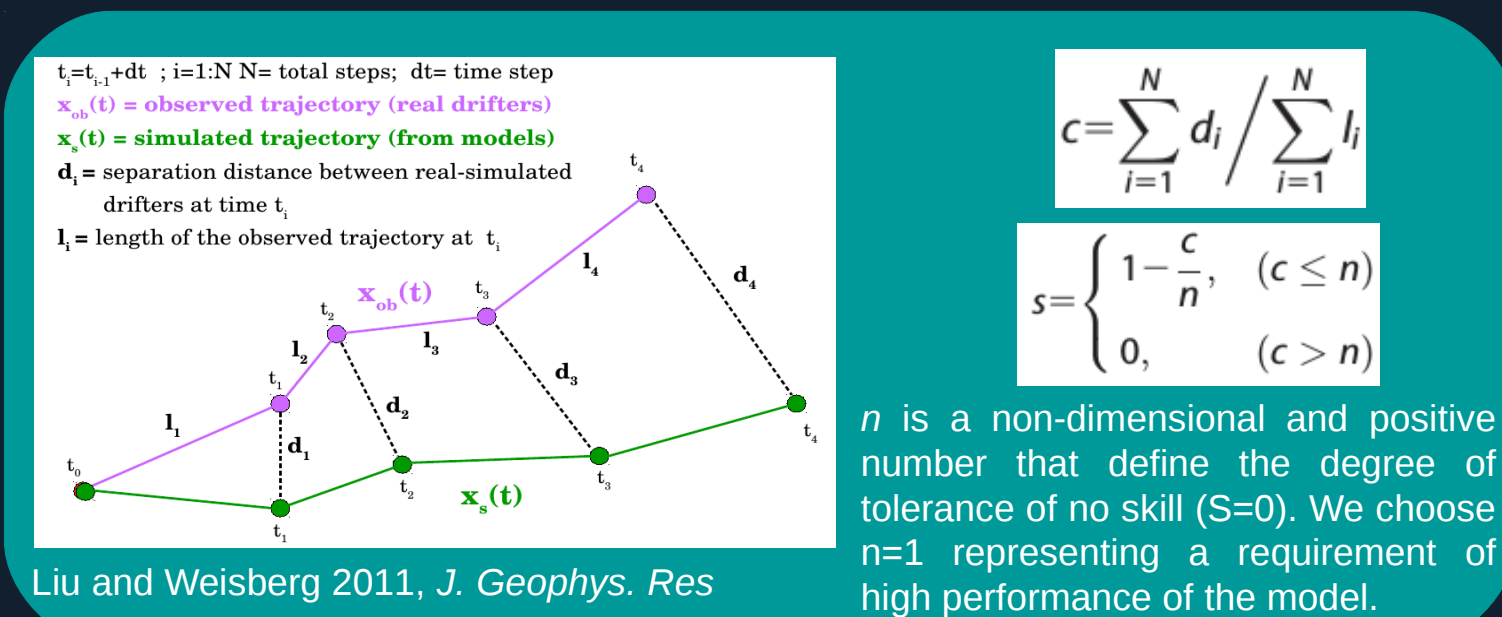


3 Ranks models based on their performance

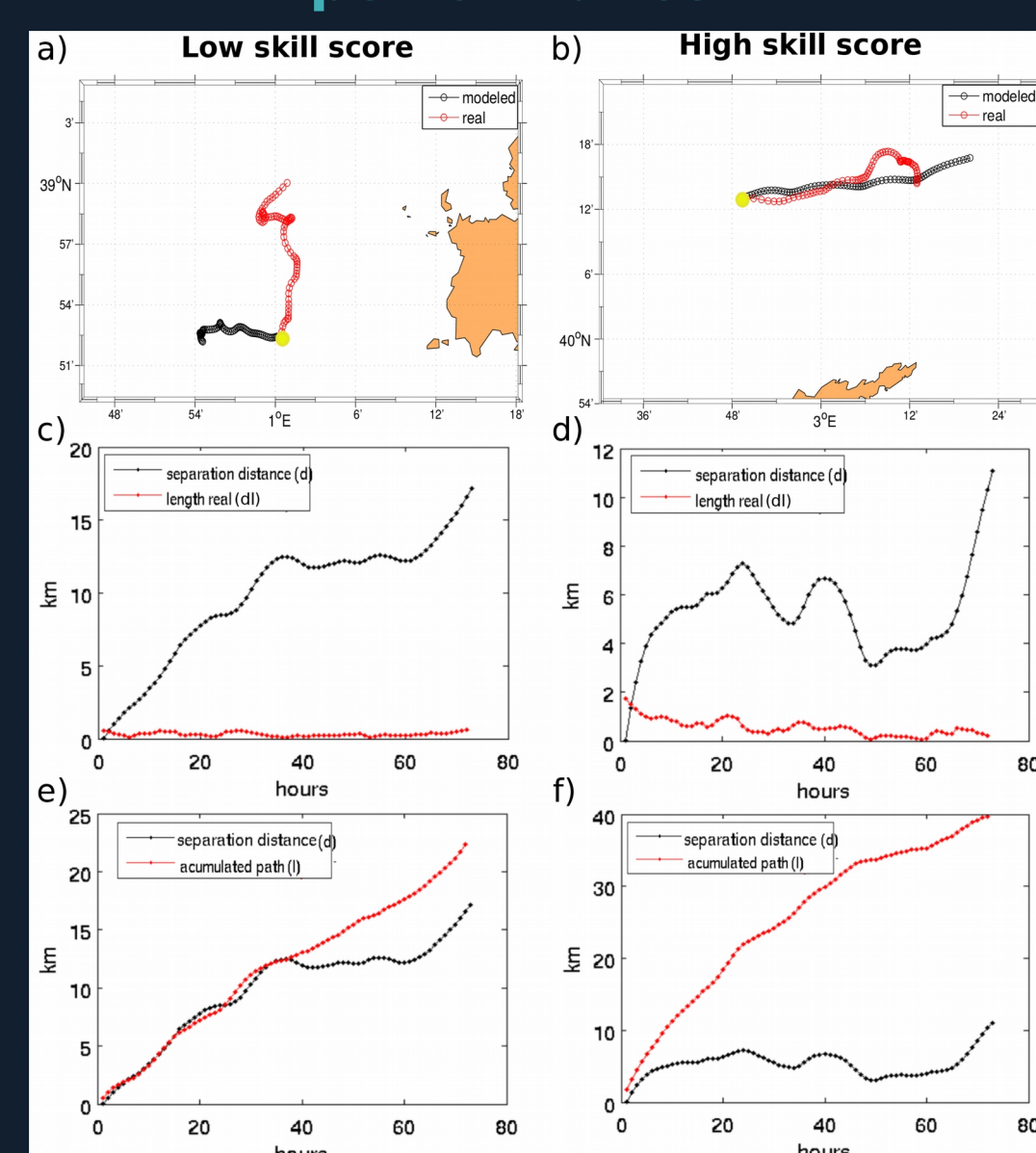


06 First experiment: Model and satellite performance in the western Mediterranean

Skill score (s) definition and data

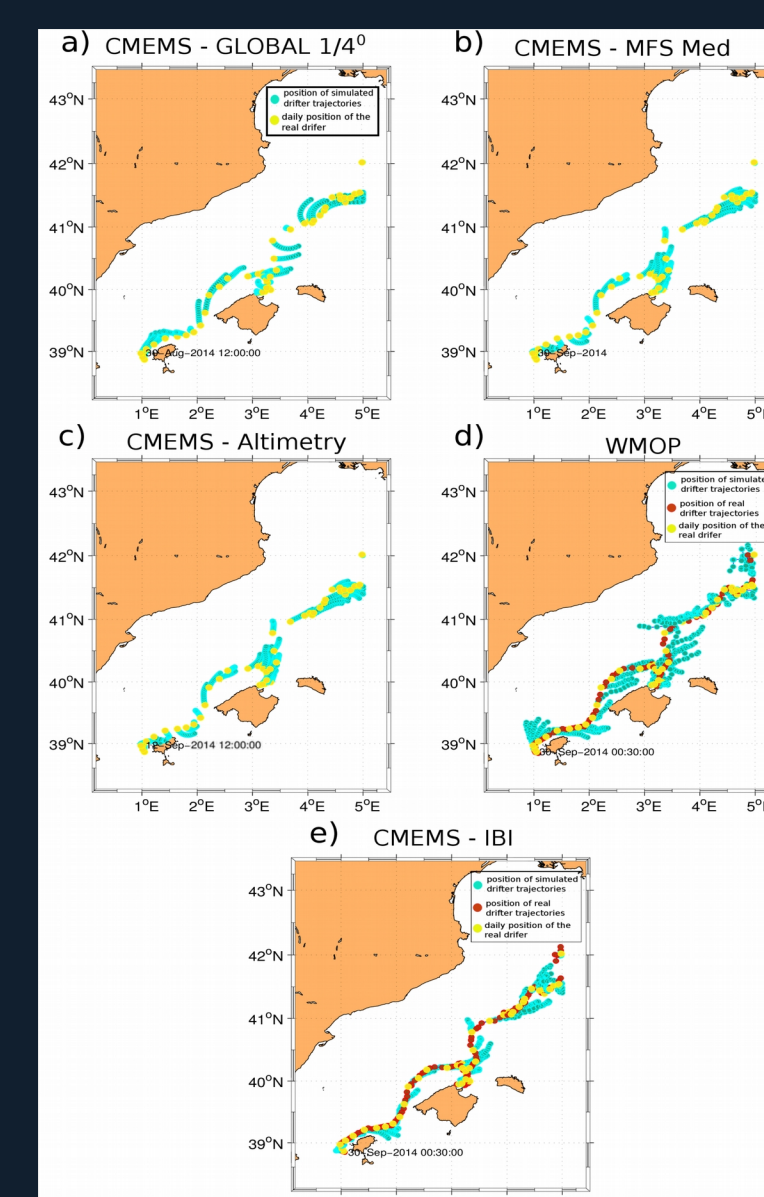


Two examples showing different CMEMS- IBI model performance



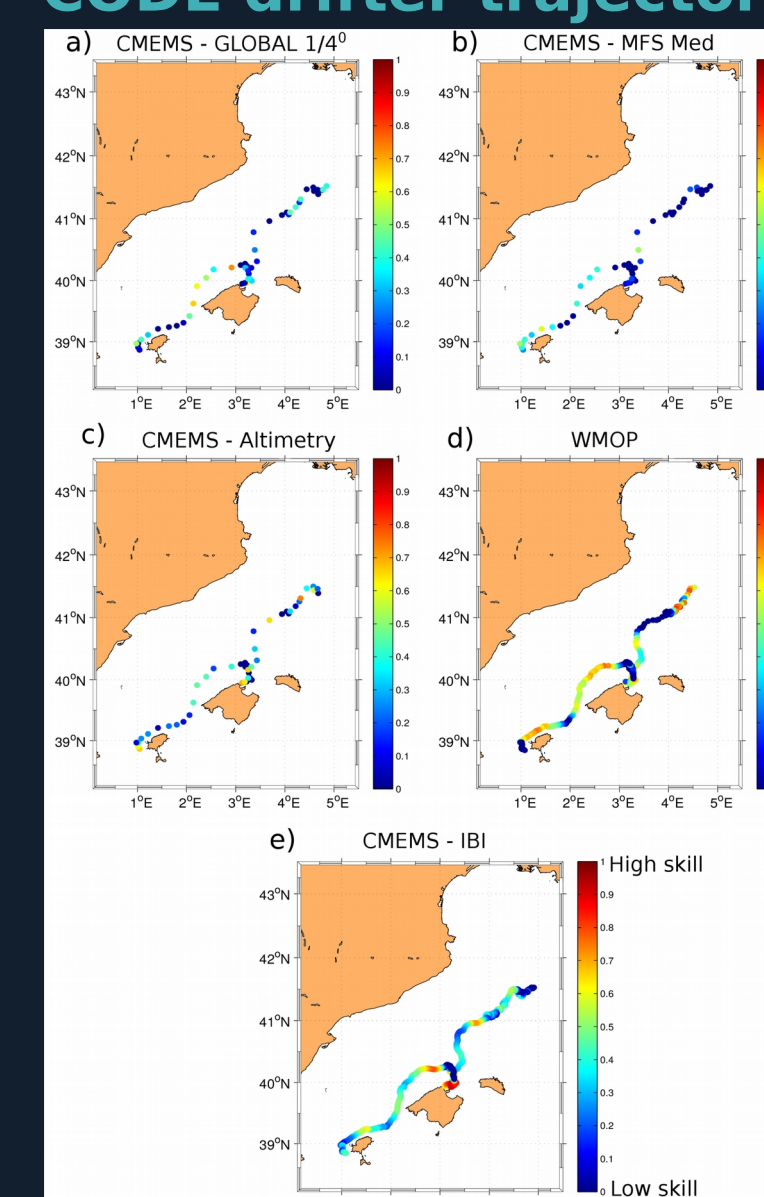
Better accuracy of the CMEMS-IBI model currents over the area covered by the simulated drifter shown in b)

CODE drifter and 72-hours virtual trajectories



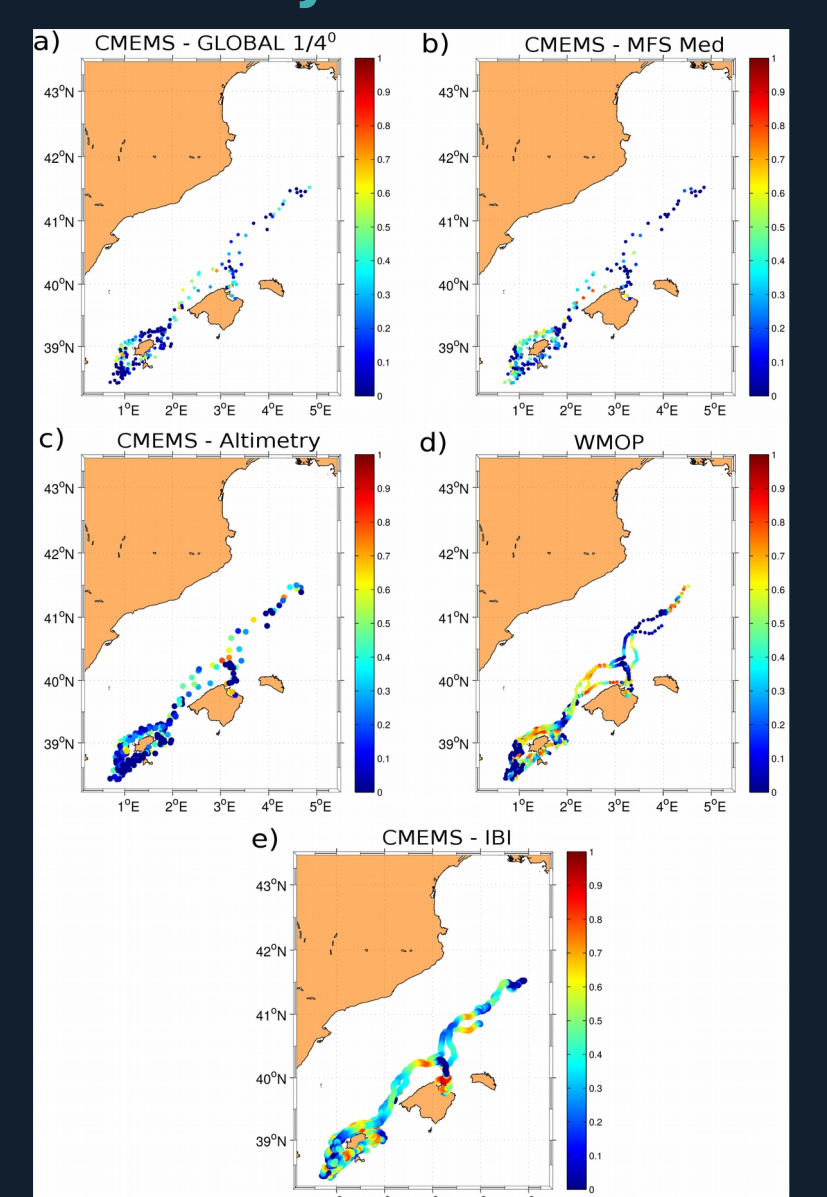
Virtual particles are advected in the different velocity field initialized at the real drifter position every hour (IBI), 4-hour (WMOP), day (GLOBAL, MFS-Med, Altimetry)

Skill score after 72 hours trajectories along one CODE drifter trajectory



Model discrepancies over Menorca and Mallorca channel and also in the region around 3.5°E and 41°N.

Skill score along 13 CODE drifters trajectories



- Common features: Low model performance over Menorca and Mallorca channel.
- IBI and WMOP : high performance
- Altimetry and GLOBAL: low performance

07 Aknowledgements

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