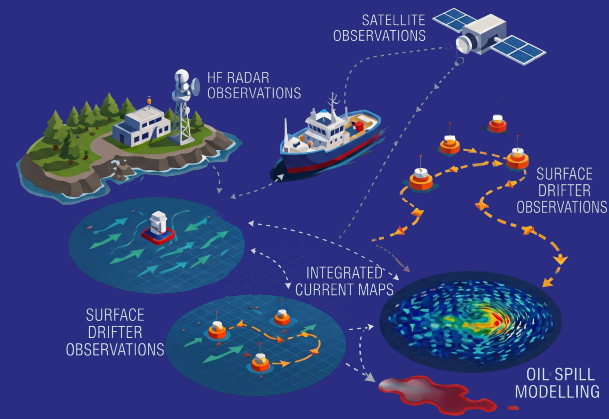




Coastal Currents from Observations VLab

SERVICE #1 - INTEGRATED OCEAN SURFACE CURRENT MAPS

FAIR ocean current observations and analytical services for coastal and marine research



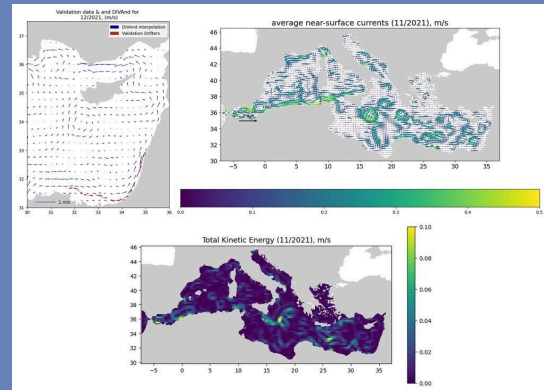
WHAT IS THE INTEGRATED OCEAN SURFACE CURRENT MAPS SERVICE?

The service enables users to generate integrated ocean surface current maps by combining multiple observation sources.

It merges HF radar observations, surface drifter trajectories and satellite altimetry data using the DIVAnd (Data Interpolating Variational Analysis in n dimensions) framework.

The resulting current maps are physically consistent and support Lagrangian simulations, oil spill modelling (MEDSLIK-II) and a wide range of ocean and coastal applications.

EXPLORE OCEAN SURFACE CURRENTS



Example: From top left to bottom: Validation of the results with independent drifters; Surface currents at the basin scale; Total kinetic energy computed at the basin scale

CURRENT MAPPING

MULTI-SOURCE INTEGRATION

ADVANCED ANALYTICS

60+
HF Radar Network

250k+
Drifter observations

30+
Satellite altimetry

15+
Current maps

KEY TOOLS AND SERVICES



MULTI-SOURCE DATA INTEGRATION

Combine HF radar, surface drifters and satellite altimetry observations into a unified framework.



DIVAND ANALYSIS FRAMEWORK

Apply the DIVAnd method to produce physically consistent and reliable surface current fields.



JUPYTER NOTEBOOK ENVIRONMENT

Customisable Jupyter notebooks for data processing, analysis and visualisation.



LAGRANGIAN SIMULATIONS

Run and visualise virtual drifter trajectories for transport and connectivity studies.



OIL SPILL MODELLING

Use current outputs as input for MEDSLIK-II simulations of pollutant dispersion scenarios.



VRE INTEGRATION

Fully integrated in Blue-Cloud Virtual Research Environment for seamless access.

WHO CAN BENEFIT?



Researchers & scientists



Coastal Oceanographers



Environmental Agencies



Marine Data Analysts



Trainers & students



Maritime & coastal stakeholders

TRAINING AND RESOURCES



OTGA training lessons
Step-by-step learning modules



Video tutorials
Step-by-step learning modules



Documentation
Technical manuals and user guidance.



Reproducible workflows
FAIR and transparent analytical processes

HOW TO GET STARTED

- 1 Register on the Blue-Cloud Gateway
<https://blue-cloud.d4science.org/>
- 2 Access the VLab: **Coastal Currents from Observations**
- 3 Select your region of interest and generate integrated surface current maps.

SCAN TO ACCESS THE VLAB

