



DATA FOR THE UN OCEAN DECADE

A EUROPEAN FOCUS

Matching marine data to the UN Ocean Decade challenges

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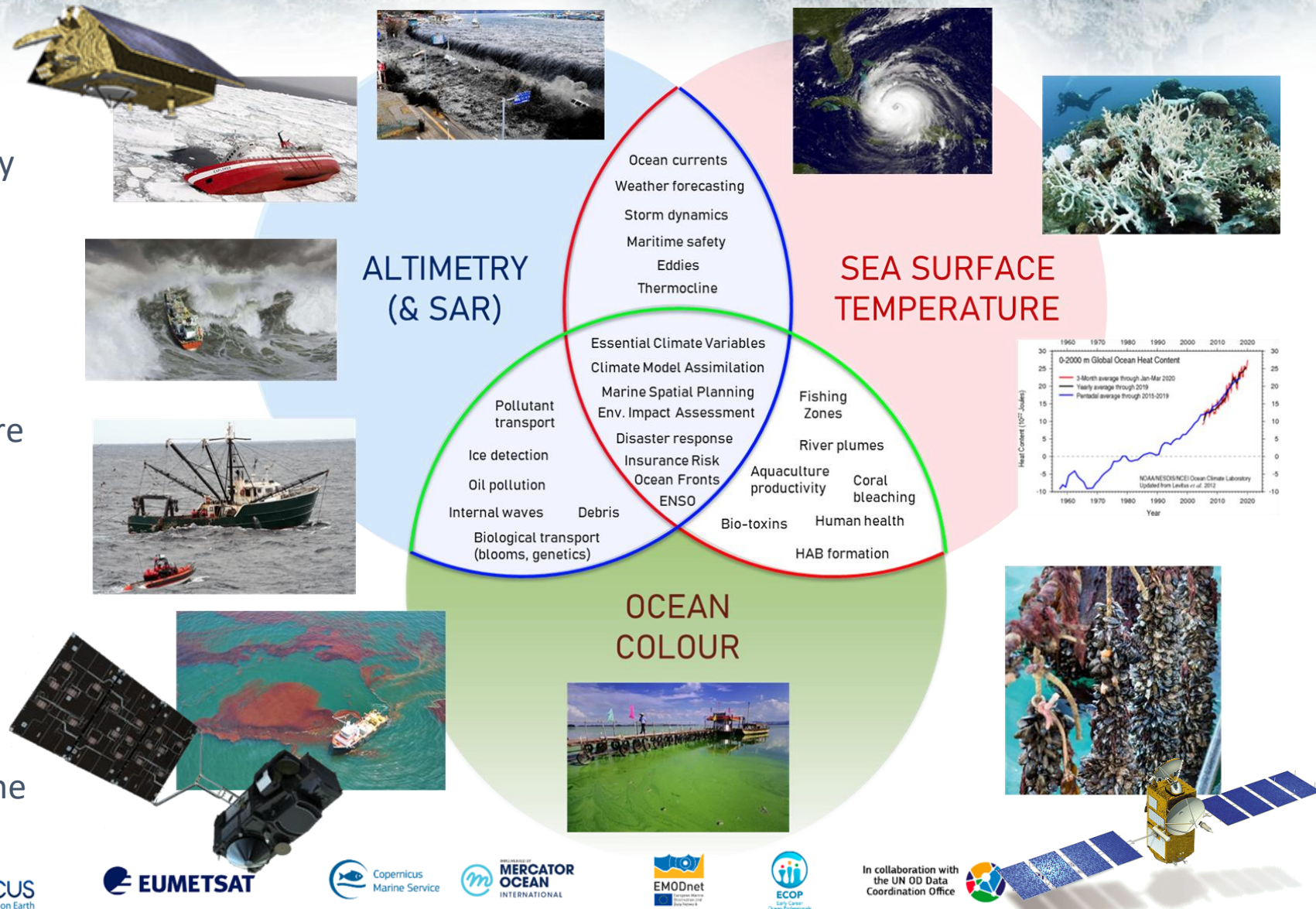
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Coordination Office



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- Ocean Colour (OC, IOPs, Chl, TSM...)
- Sea (and soon ice) Surface Temperature
- Altimetry (SSH, SWH, Wind)

Further data from optional and mandatory programmes broadens marine relevance...

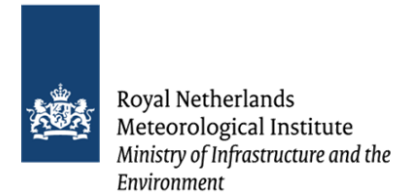


EUMETSAT and Marine Data – OSI SAF

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The OSI SAF (Ocean and Sea Ice Satellite Application Facility) is the dedicated EUMETSAT centre for processing satellite data at the ocean-atmosphere interface.



*Operational and quality
controlled products*



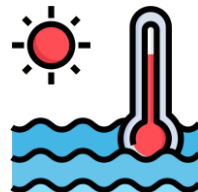
Sea Surface Winds

- ❖ *Speed and Direction*



Sea Ice Parameters

- ❖ *Concentration, Edge, Type, Emissivity, Drift*
- ❖ *IST - Sea Ice Surface Temperature*



Sea Surface Temperature

- ❖ *Surface temperature*



Radiative fluxes

- ❖ *Downward longwave irradiance*
- ❖ *Surface solar irradiance*



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EUMETSAT is mapping its data to the UNOD challenges...

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A UNOD endorsed action: A series of case studies designed to show how our data can be used to meet the challenges of the UN Ocean Decade.

Each case study includes:

- Web article – within EUMETSAT case study library

- Jupyter notebook

 - Narrative explaining data and use case

 - Data access

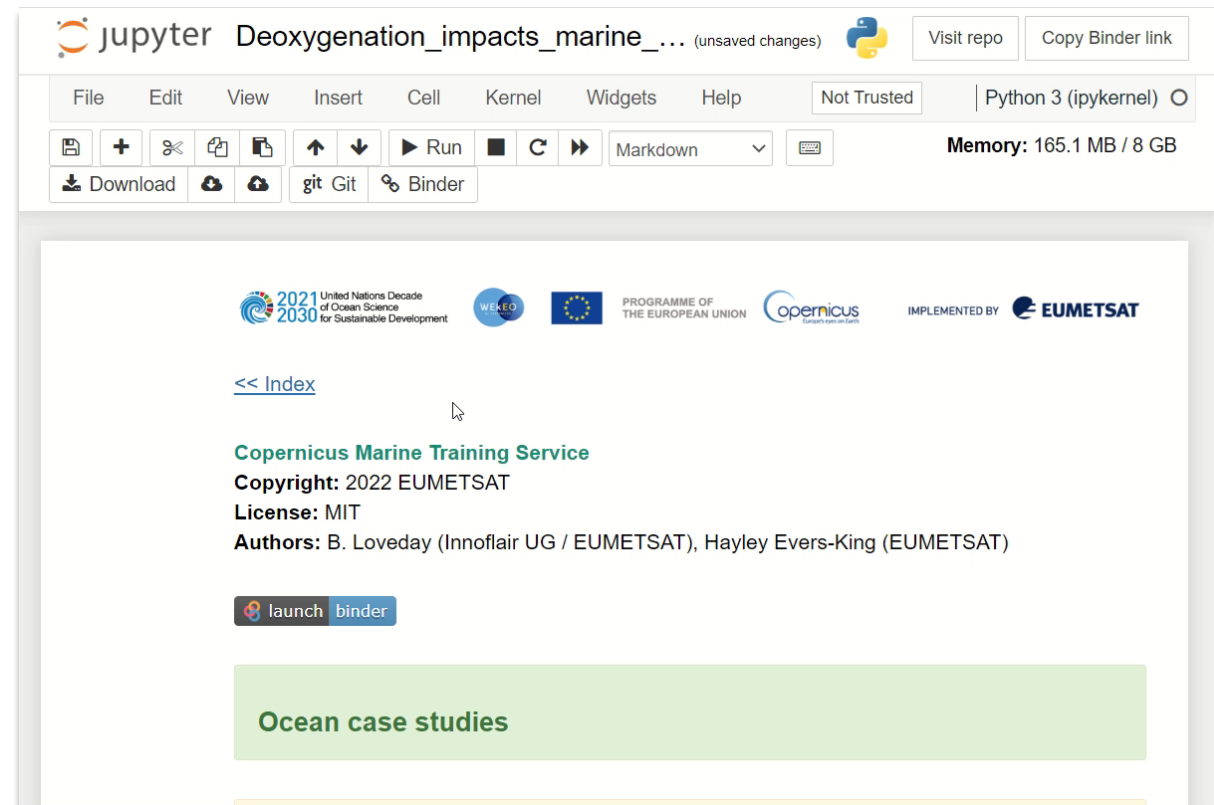
 - Analysis and visualization

Compatibility with WEkEO and Binder, also including downstream CMEMS products when appropriate to applications.

Open to collaboration to showcase your work!

Articles: https://bit.ly/UNOD_cases

Code: https://bit.ly/UNOD_code



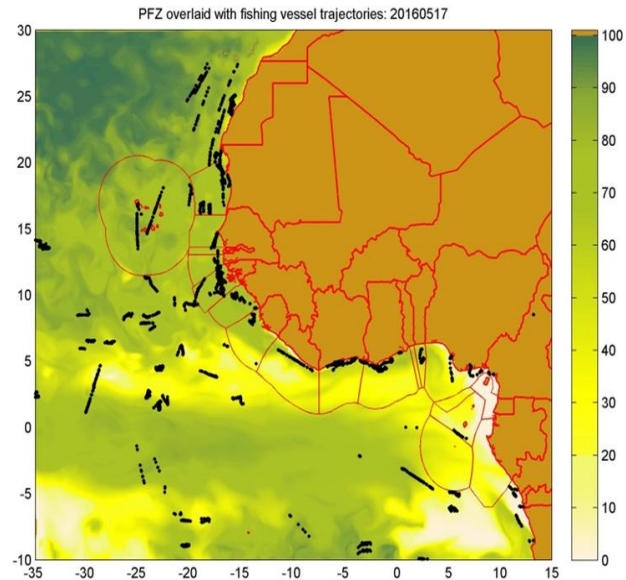
Challenge 3: Sustainably feed the global population

Data gives us...

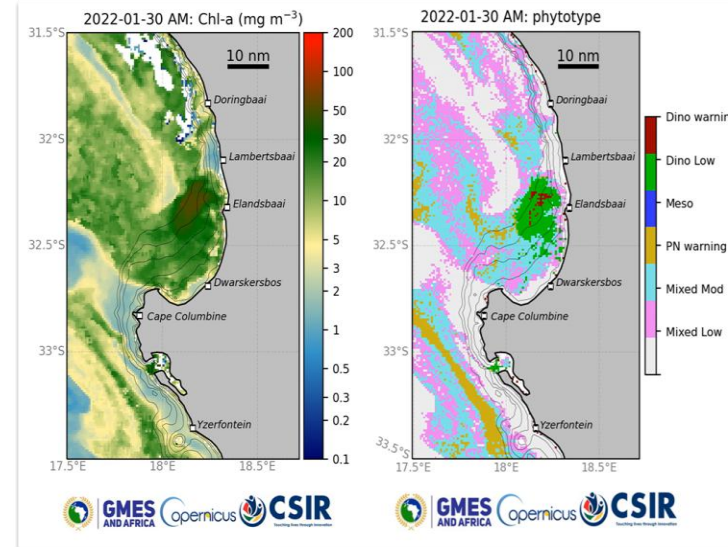
- A view on fundamental ocean biology...
- An understanding of environmental variability and change...
- Data on water quality, safety at sea...

Society gets...

- Marine Spatial Planning – site selection, PFZs, MPAs
- Cost effective operational decision support



PFZ maps overlaid with fishing vessel trajectories to understand fishing behaviour



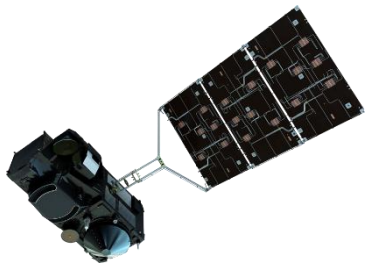
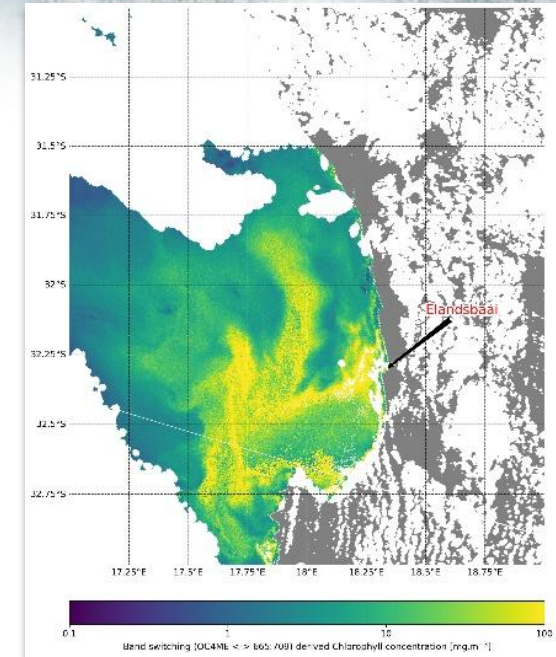
#EUdata4OceanDecad

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Challenge 3: Example workflow – Harmful Algal Blooms

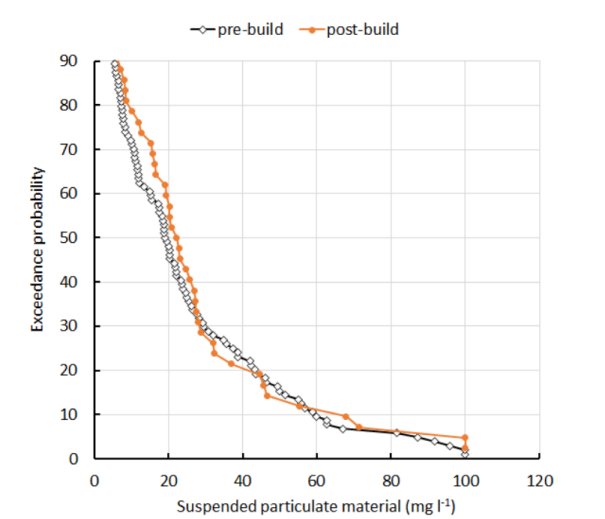
Satellite data contributing to monitoring algal blooms:

- Ocean colour data can be used to monitor algal blooms which impact water quality, health, and viability of aquaculture.
- Important to monitor to provide warnings and allow for operational responses.
- Notebook shows how to access and process satellite data to detect such blooms

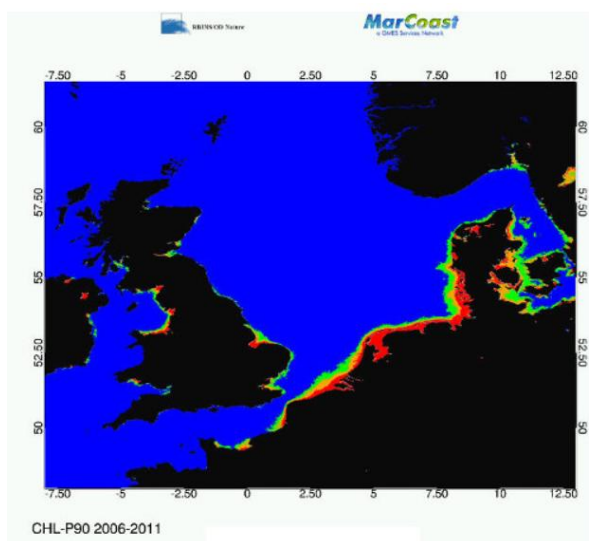


Challenge 4: Develop a sustainable, resilient and equitable ocean economy

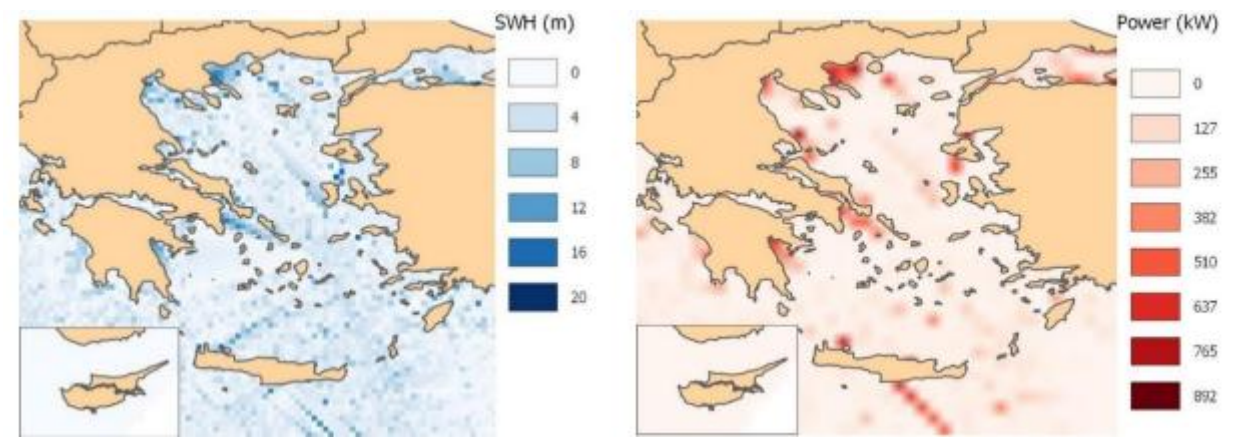
Data gives us...	Society gets...
Long-term baselines of environmental status (Physics Chlorophyll, fronts, heat risk, sediments etc)...	- Efficient maritime activities (energy, shipping etc) - Trade off analysis - EIA compliance - Policy indicators - Adaptation planning



Wind Farm TSM assessment (Rodney Forster)



Eutrophication indicators (RBINS)



SWH wave energy potential derived from Sentinel-3 SRAL (Credit: Kaselimi et al., 2019)

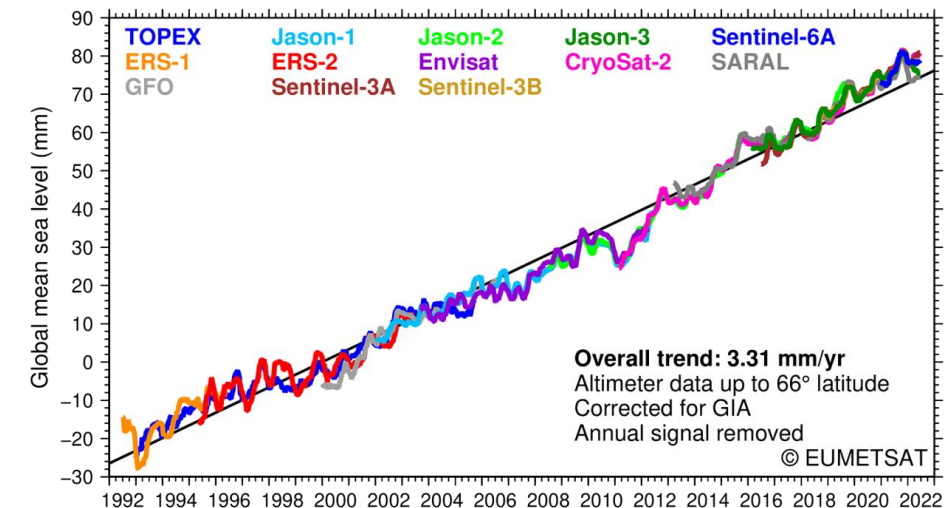
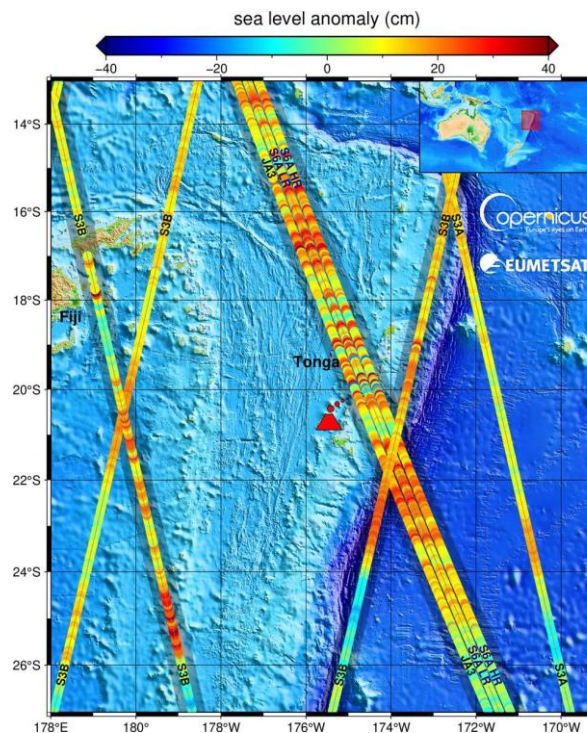
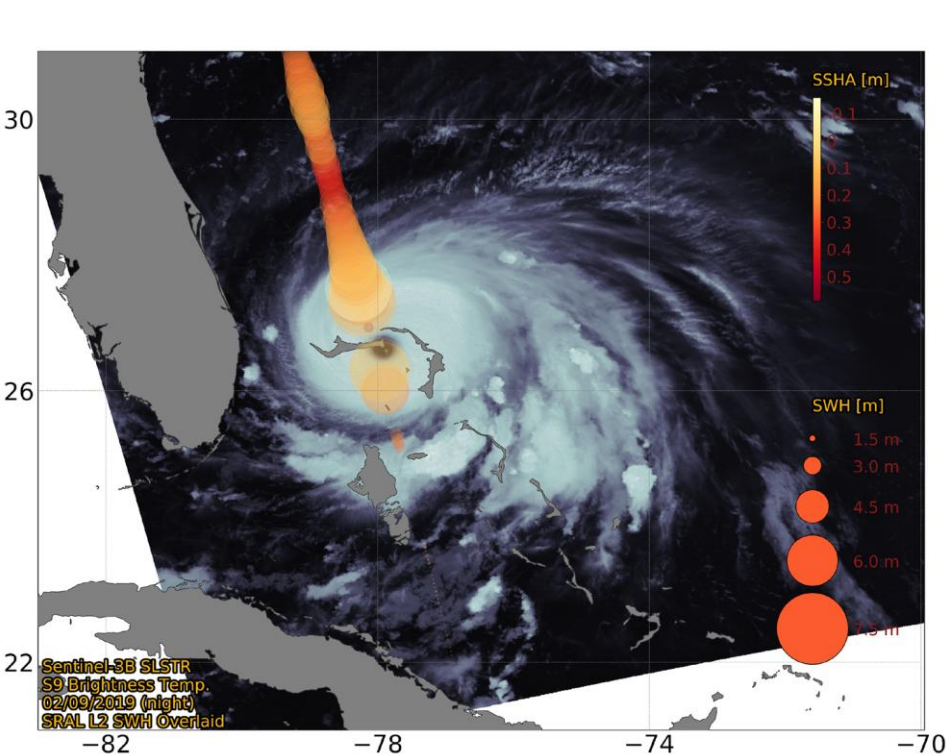
Challenge 5: Increase community resilience to ocean hazards

Data gives us...

- Improved current/wave/wind/ice measurements and model forecasts (CMEMS etc)...
- Long term records of climate variables such as sea-level

Society gets...

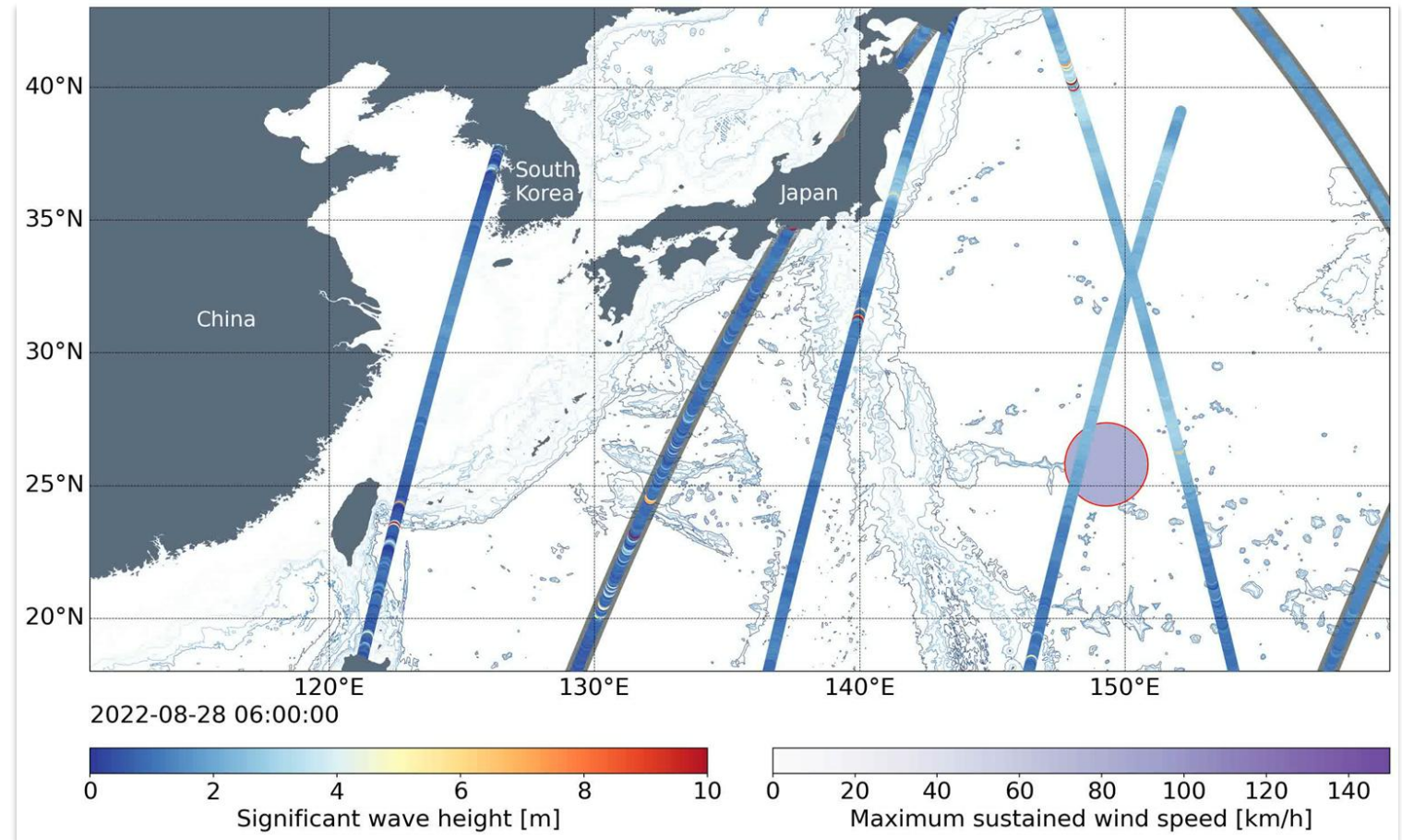
- Forecasts and warnings
- Better risk assessments and planning
- Protected life and property



Challenge 5: Example workflow – storms and their impacts

Satellite data contributing to monitoring storms and their impacts:

- Altimetry data captures the impacts of storms on the ocean and coasts.
- This data feeds in to forecasts and warning systems.
- Notebook shows how users can access this data and follow a storm in NRT.



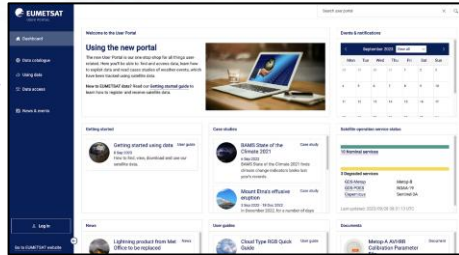
Learn more!

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EUMETSAT Helpdesk
OPS@eumetsat.int

User portal

Copernicus
& mandatory
missions
Data access



Contact the EUMETSAT helpdesk with any
questions about EUMETSAT data products
or services

Courses

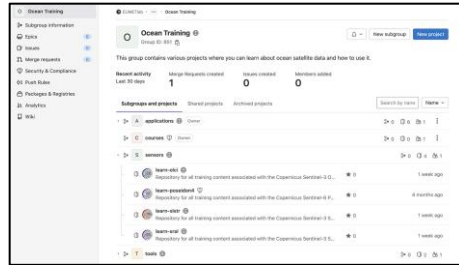


moodle



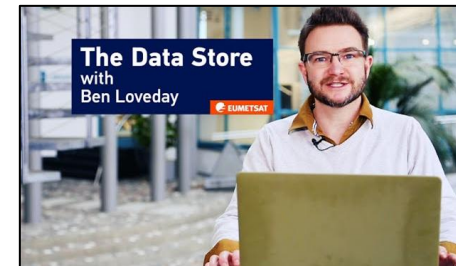
Code distribution

CONDA



EUMETSAT
User
Support
Resources

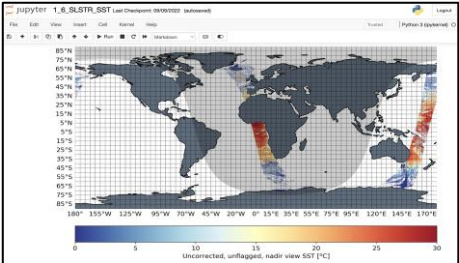
Video tutorials



YouTube



Jupyter Notebooks

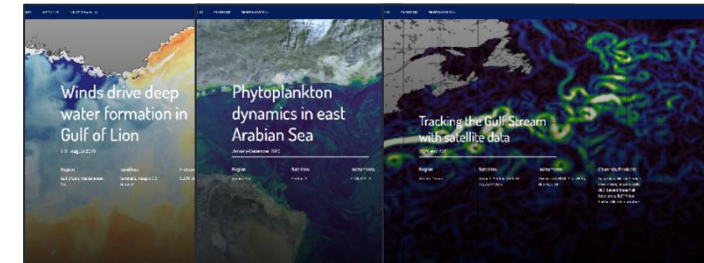


Cloud
services

binder



Case studies



THANK YOU

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Contact ops@eumetsat.int for any help you need



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