



**National  
Oceanography Centre**  
NATURAL ENVIRONMENT RESEARCH COUNCIL



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# Coastal Water Research Synergy Framework

Online user-friendly platform to support research applications that use  
EO data for **coastal water monitoring**

Integrates access to over **20 years of EO satellite data**, including current  
and future Sentinel missions, ranging from radar to optical and thermal,  
for use into **multi-disciplinary** research activities.

Ocean and coastal altimetry, designed by  
NOC, is one of Co-ReSyF research applications

→ users will be able to reprocess coastal  
altimetry data with improved algorithms and  
download and analyse the results



<http://co-resyf.eu/>

**ALES Processor for jason3 V1**  
ALES Processor for jason3 Coastal Altimetry

Jason3 SGDR data files

Bounding Box (lon\_min,lat\_min,lon\_max,lat\_max)

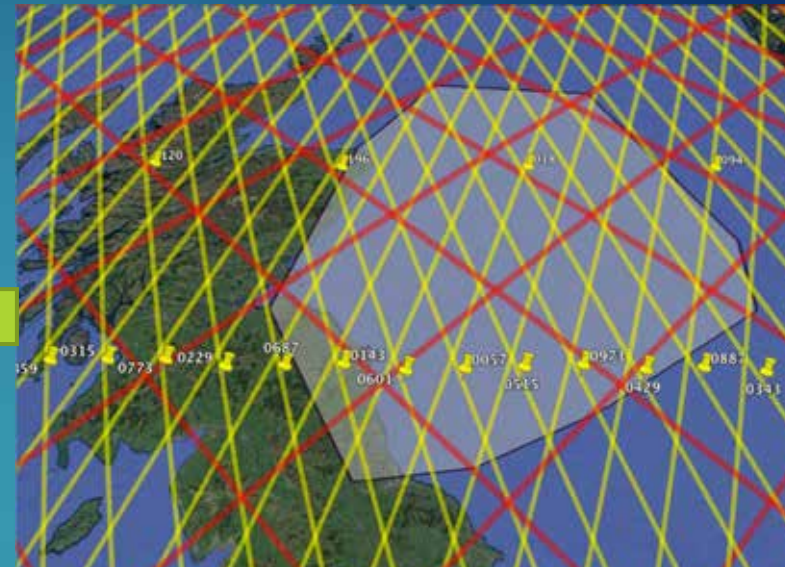
Distance limits (km)  
**Ionosphere**  
Ionospheric correction  
☒ **iono\_gim**  
☐ iono\_alt\_smooth  
☐ iono\_alt  
☐ iono\_alt\_mie3  
☐ iono\_alt\_smooth\_mie3  
☐ iono\_iri2007  
☐ iono\_nic09

Inverse Barometer Correction

Sea State Bias Correction

Ocean Tide

Load Tide



10-day repeat  
( Jason-1,-2,-3)

35-day repeat  
(ERS, Envisat, AltiKa)

Will also include S3-A/B

SSHA, TWLE, SWH



## NOAA Coastwatch/Oceanwatch Altimetry Products

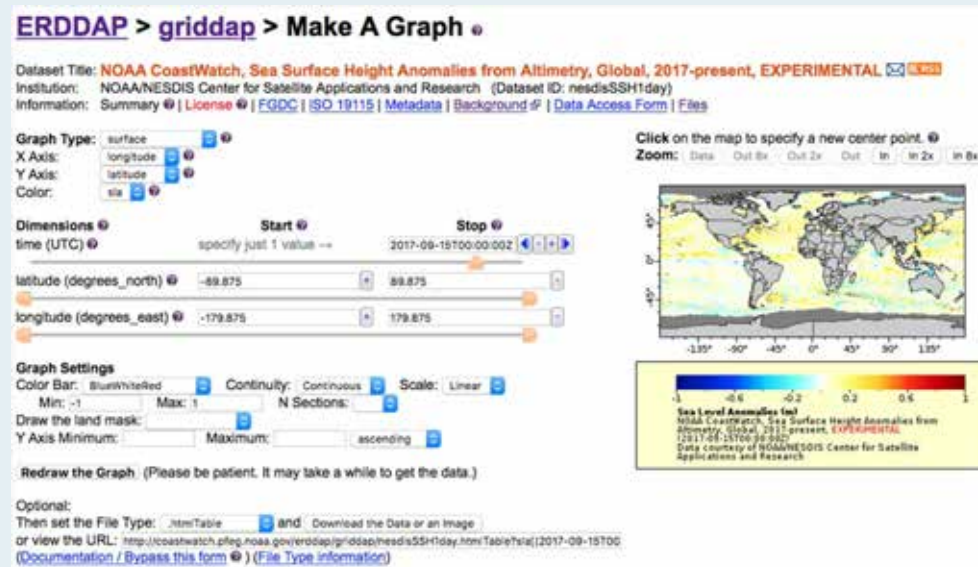


- Data includes: ocean color, SSH, SSS, SST, sea surface winds
- The data is hosted on the ERDDAP server on the CoastWatch website (<http://coastwatch.pfeg.noaa.gov/erddap/>)
- ERDDAP reformats your request into the required format of the remote server, gets the data from the remote server and then formats the data into the format you requested.
- Gridded level 3 sea level anomaly product: daily  $\frac{1}{4}$  degree multiple altimeter optimal interpolation sea level anomaly

Data Access:

<ftp://ftp.star.nesdis.noaa.gov/pub/socd/lisa/rads/sla/daily/nrt>

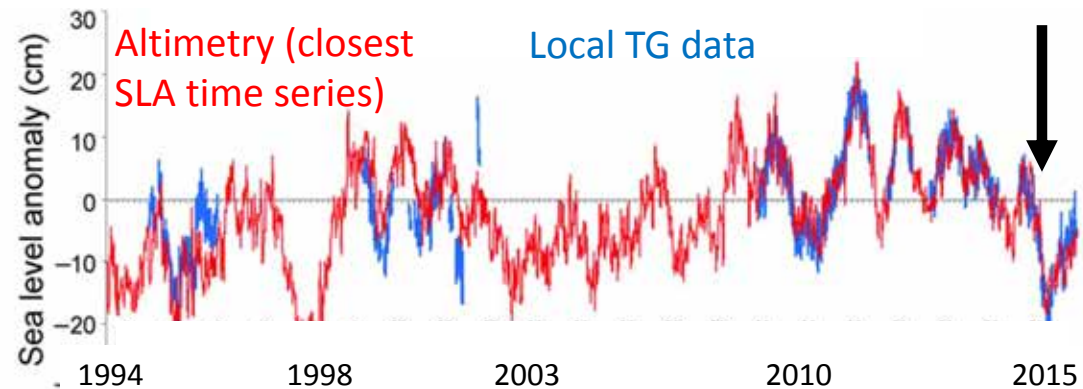
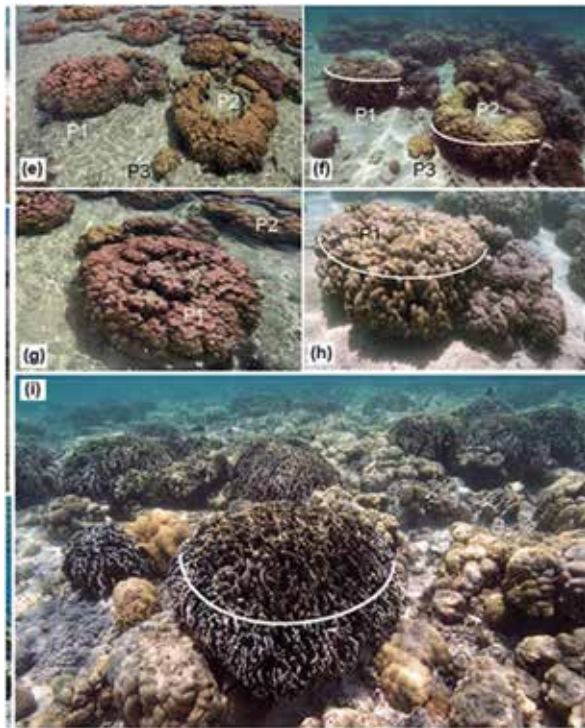
- Future CoastWatch Plans: Delayed-mode processing of daily gridded sea level anomalies



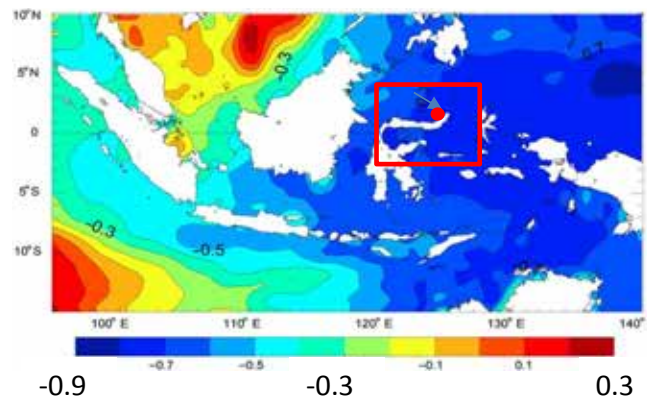
# What causes the large coral mortality observed in 2016 on Bunaken Island (Indonesia)?

## From a local to a regional view... and vice versa

- ✓ Due to a rapid & significant sea level fall (observed by both the local TG record & altimetry)
- ✓ Thanks to altimetry, we explained this SL fall by the strong 2015-2016 El Niño event



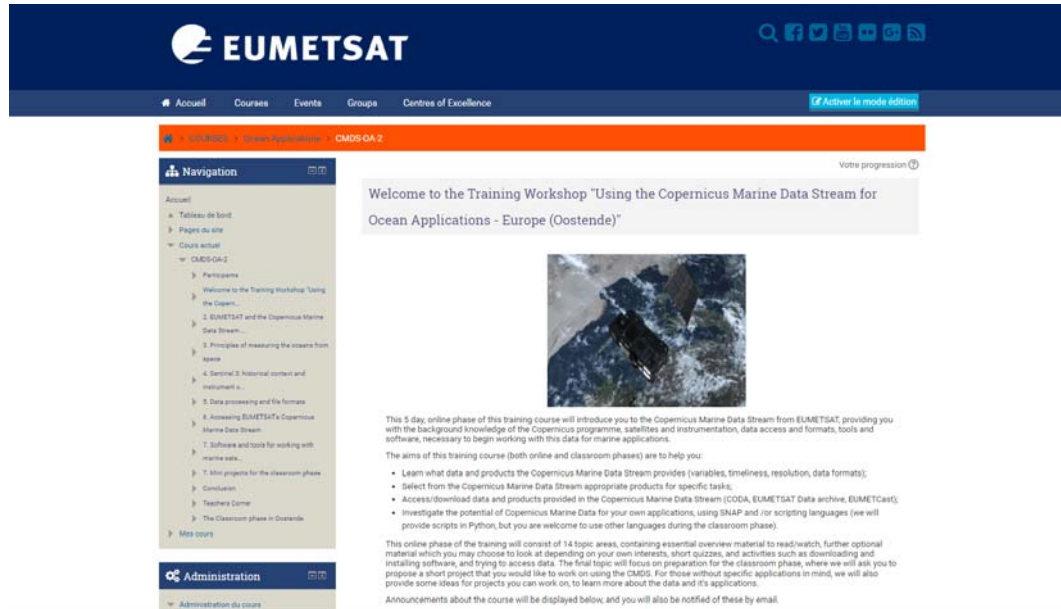
Correlation between local SL variations et El Niño index



*Ampou et al., 2017*

→ The mortality is likely widespread and altimetry allows to precisely determine the areas where coral communities may be impacted, despite the lack of local observations.

# Copernicus Marine and Ocean Training Service



User training events to be organised by EUMETSAT on behalf of the European Commission as part of the Copernicus Programme

Inlcuding **Copernicus Marine Data in Ocean Models and Operational Applications**

Online phase: 15–26 January 2018 ;face-to-face workshop: 5-9 February 2018, Hamburg, Germany.

- See <http://trainingevents.eumetsat.int/>, search for ocean

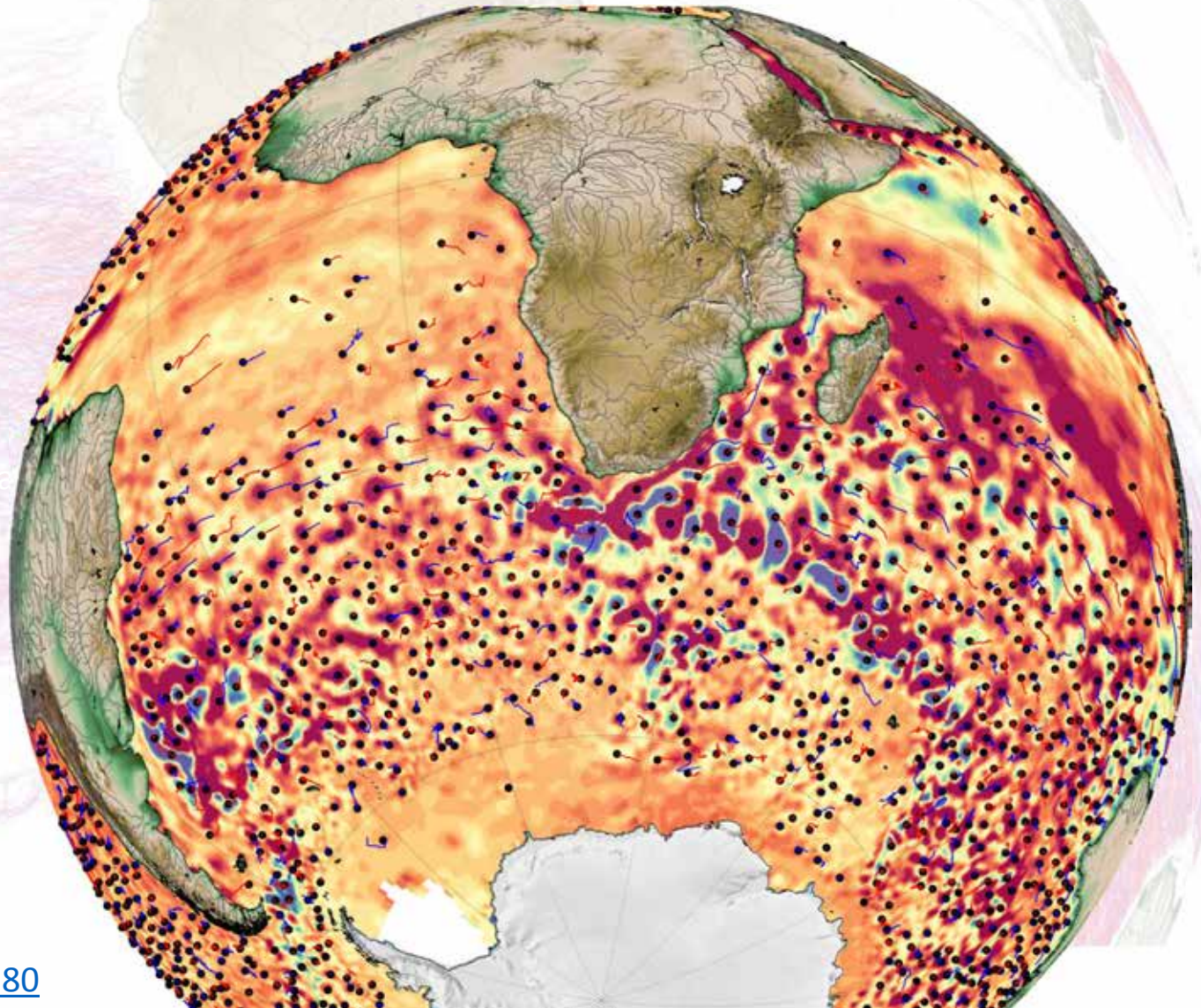
We're also looking at potential collaborative training events

- EUMETSAT
- Consortium PML /Brockmann Consult / CLS / Imperative Space
- Year: 2017-2019
- Public aimed: users
- Media: online phase + face to face
- Size / Format: 2 x 1 week
- Language(s): English, some in French



# *Global Mesoscale Eddy Trajectory Atlas now on Aviso+*

A new “Mesoscale Eddy Trajectory Atlas” was released in October 2017 on the Aviso altimetry portal. This atlas follows 272,000 tracks over the last 24 years. This dataset was produced and validated by CLS in collaboration with D. Chelton and M. Schlax from Oregon State University. It takes over the dataset formerly produced and distributed at OSU, and is regularly updated by the SSALTO/DUACS team and distributed by AVISO+.





# Satellite Altimetry Over Oceans and Land Surfaces

Edited by  
Detlef Stammer  
Anny Cazenave

 CRC Press  
Taylor & Francis Group

## *New reference book on altimetry*

*“Technical information on space observing systems; mainly satellite altimetry*

*Includes specific case studies illustrating real-world applications of the technology*

*Up-to-date applications to dynamics of open oceans and to coastal oceanography*

*Very important update for a field that has seen rapid evolution and development over the last decade*

*Well known editors and world-class list of contributors”*

Satellite Altimetry Over Oceans and Land Surfaces

D. Stammer, A. Cazenave, Ed.

- 2017
- Public aimed: scientists & students
- Medium: book, CRC Press

<https://www.crcpress.com/Satellite-Altmetry-Over-Oceans-and-Land-Surfaces/Stammer-Cazenave/p/book/9781498743457>

- to be published soon



## **RUS: Research and User Support for Sentinel Core Products**

**A NEW EXPERT SERVICE FOR SENTINEL USERS**



# RUS: Research and User Support for Sentinel Core Products

## A NEW EXPERT SERVICE FOR SENTINEL USERS

<https://rus-copernicus.eu/portal/>



### Non Commercial activities



Students, Trainers  
Researchers  
Decision-makers  
R&D development

### Free access



Powerful computing environment with scalable VMs & full support

### Scientific Support



Support from experts in geospatial data processing

### Process



Process large Sentinel datasets possible for any user

### Training



Face-to-face sessions & webinars for all users

# JASON-3 Contest Results



- Author name: D de Staerke
- (and/or affiliation) CNES
- Year: 2017
- Public aimed\*: primary, secondary
- web sites
- Language(s): french and english

**Purpose:** Discover the role of Jason-3, the oceanography satellite launched at the beginning of 2016 to study the climate and the environment, by taking part in the *Jason-3 mini-site competition*.

**Project:** design a mini-site which reflects their understanding of satellite-based Earth observation of climate, environment and biodiversity changes.

**Winners and prizes:** CNES awarded a forecast weather station to the best production for each of the school levels (3) and the students were invited to present their Project at the Paris air show, last june.

In addition, the winning sites have been highlighted on CNES web site.

# A NASA Web Portal for Sea Level Change – <http://sealevel.nasa.gov>

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p r g h o v l p x o d w t r q v

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**Multimedia**

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**Sea Level  
Datasets**

**Sea Level  
Indicators**

**Data Analysis**

**Online Model  
Simulations**