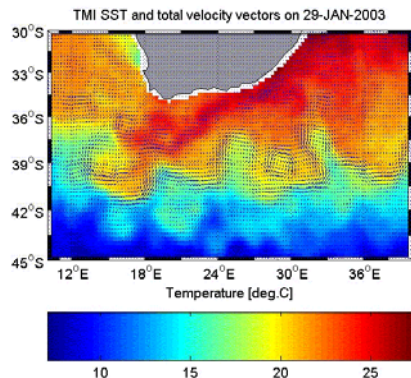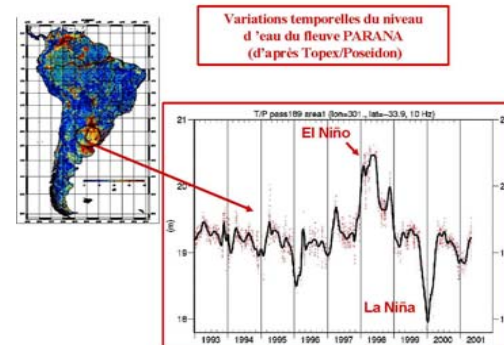# CTOH ALTIMETER DATA SERVICE:

DATA & PRODUCTS

Fernando Niño, Florence Birol, Mathilde Cancet, Sara Fleury, Marie-Claude Gennero, Rosemary Morrow, Christian Naskas, Renaud Dussurget , Guillaume Pernot, Laurent Roblou

CTOH – LEGOS, Toulouse

TMI SST and total velocity vectors on 29-JAN-2003

Variations temporelles du niveau d'eau du fleuve PARANA (d'après Topex/Poseidon)

CTOH – *who are we?*
– Centre de Topographie des Océans et de l'Hydrosphère

**French data service supporting altimetric research**

Our Mission:

To support research teams who want to develop new altimetric applications

1. Maintain and distribute altimetric GDR data with improved corrections

- **over all surfaces (oceans + continents)**

– **1 Hz and 20 Hz data**

2. Develop **advanced altimetric products** for users

3. centre of expertise for the operational data centres (AVISO-CNES , ESA)

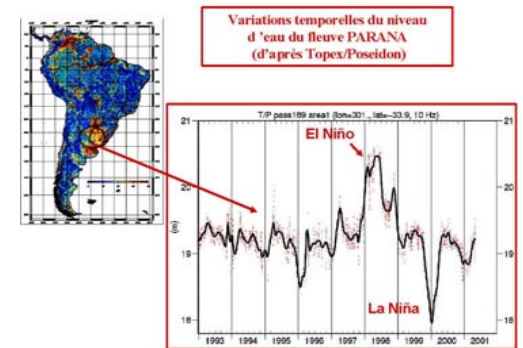Most oceanographers use the excellent AVISO products (we do too!).

Our data bases are mainly used by research groups at LEGOS, in France, and internationally who want to develop **non-standard applications**.
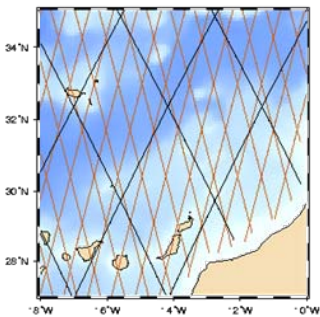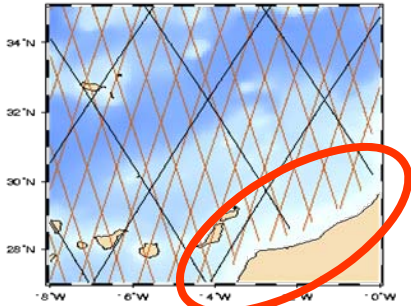
In coastal regions

Over the cryosphere

Over lakes, rivers, flood plains
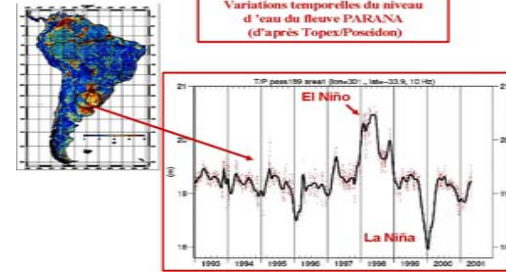
CTOH – who are we?

LEGOS, Toulouse

Coastal Products

Birol, Roblou, Cancet

(Posters)

Mesoscale - submesoscale

Morrow, Sudre, Dussurget

• Global surface currents

• Altimetric Filament positions
(Poster)

CTOH
Data base + products
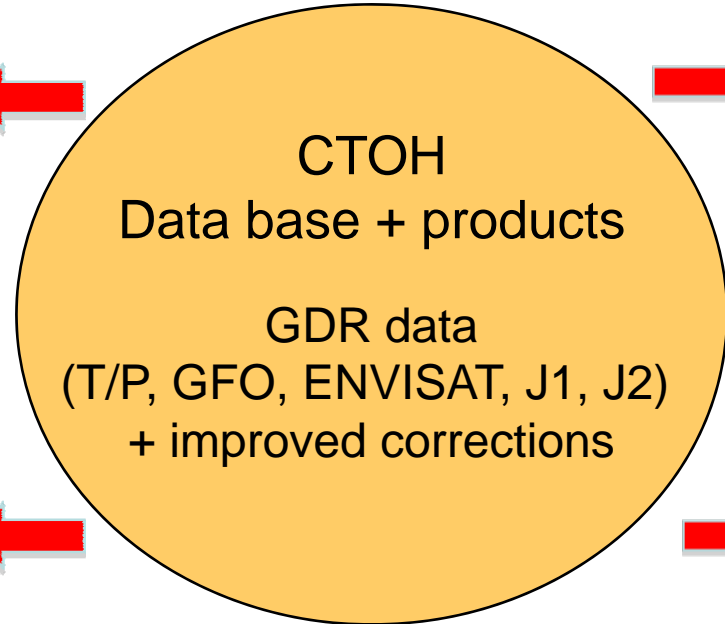
GDR data
(T/P, GFO, ENVISAT, J1, J2)
+ improved corrections
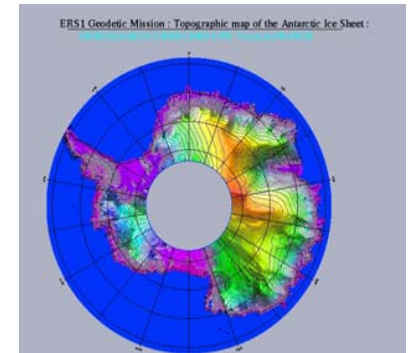
Continental Hydrology

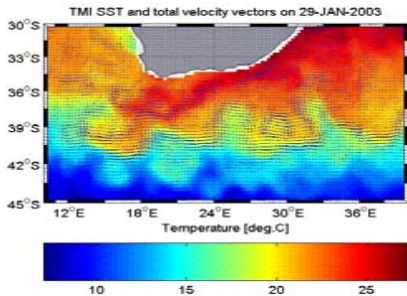*Cazenave, Crétaux, Gennero*

• **HYDROWEB** (Posters)

Cryosphere Products

Rémy, Legresy, Blarel

ICE2 algorithm
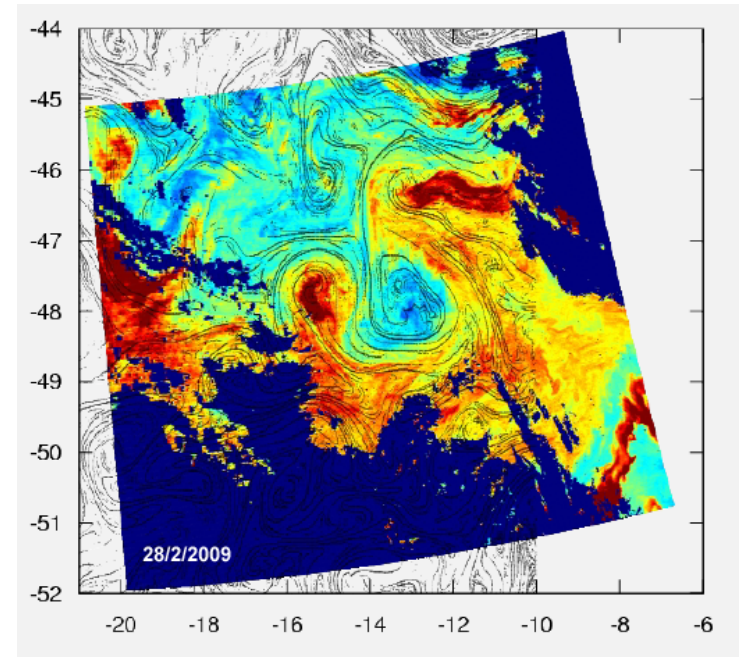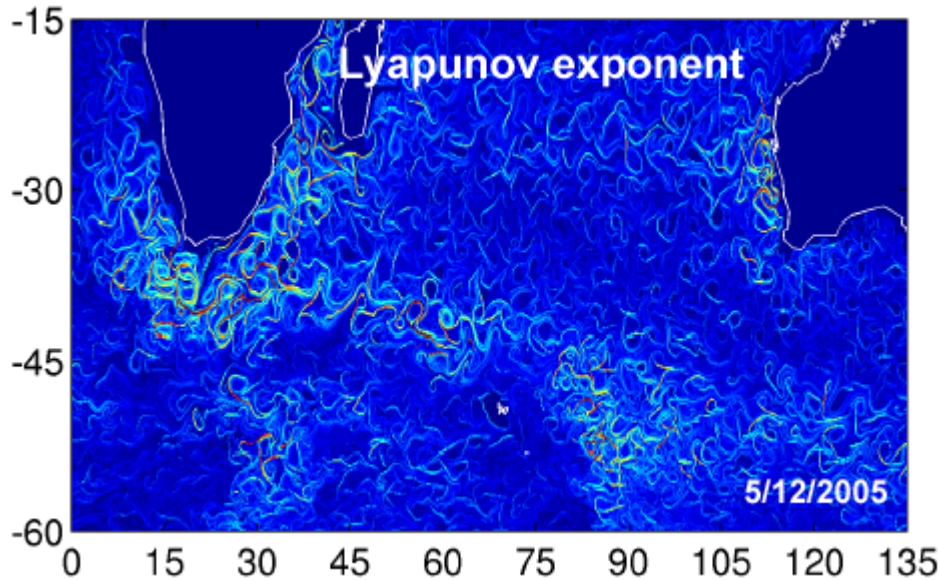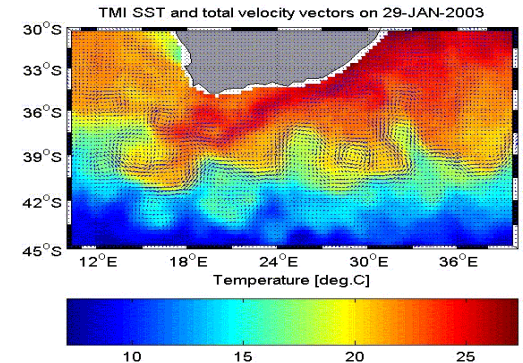
USERS, AVISO / CNES - ESA

Mesoscale and sub-mesoscale Products:

- Global surface currents (geostrophy + Ekman ¼° resolution)

- Lyapunov Exponent filament positions derived from AVISO and CTOH surface currents (**poster – this session**).

http://www.legos.obs-mip.fr/en/observations/ctoh

Users who want to analyse altimetry data in non-standard regions

Who for ?

Research groups working on coastal projects, or continental surfaces (lakes, rivers, flood plains, cryosphere, …)

Today :

Extraction by request :
ctoh_products @legos.obs-mip.fr.

September 2010 :

CTOH Web Toolbox :
On-line Extraction and visualisation

http://ctoh.legos.obs-mip.fr

GDR data available :

T/P, GFO, ENVISAT, J1, J2

Oceans & Continental Surfaces

1 Hz et 20 Hz

Improved Corrections for all bases :

• **Tide Models** : FES2004, GOT2000, GOT4.7

• **High-frequency** : ib_ECMWF (BF) + ib_MOG2D (HF) *(LEGOS)*

• Non-parametric **EM_bias** for each mission *(CLS)*

• **MSS** CLSO1 *(CLS)*

• NCEP **Wet – tropo correction** over **continental surfaces** *(CLS)*

• **GRACE Geoid** GGM02C *(GRGS)*

• **GIM ionospheric** correction *(JPL)*

• **Coastal radiometer** corrections *(JPL)*

Home page :

http://ctoh.legos.obs-mip.fr

CTOH
Legos

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DATA CATALOGUE | **Coastal Products** | Global Surface Currents | Along Track Data | SubMesoscale Filaments | Ice | Sea level anomaly

Navigation

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NIndian
Solomon
SouthPacific
References

News

📄 Coastal products
reprocessed with
GOT4.7
May 14, 2009

📄 New available
coastal products
May 13, 2009

More news...

Log in

Login Name

Password

• Log in

ℹ Forgot your
password?

👤 New user?

Coastal Products

Alongtrack Sea Level Anomalies – Regional Products

The CTOH along-track sea level anomalies are computed for each cycle of each altimetry mission (Topex/Poseidon (TP), Jason-1, Geosat Follow on (GFO) and Envisat), using the Sea Surface Heights (SSH) provided by the X-TRACK processing tool, and the latest corrections available in the CTOH database. The data are projected onto a nominal track with a spatial interval of about 7 km between points (1 second).

The mean sea surface is computed at each point, based on the mission period currently available, and subtracted from the observed sea surface heights in order to form the sea level anomalies. The latter are spatially filtered using a 3-point Loess filter in order to remove the background noise (wavelengths shorter than 20 km), after a post-processing technique adapted specifically for coastal regions (see the method below).

Note: Data from the different altimetry missions are not currently intercalibrated at the crossover points. They should therefore not be used directly as a multi-mission product. Moreover long wavelengths errors are not corrected (on-going work) thus orbit errors may be significant for some cycles of the GFO and Envisat missions.
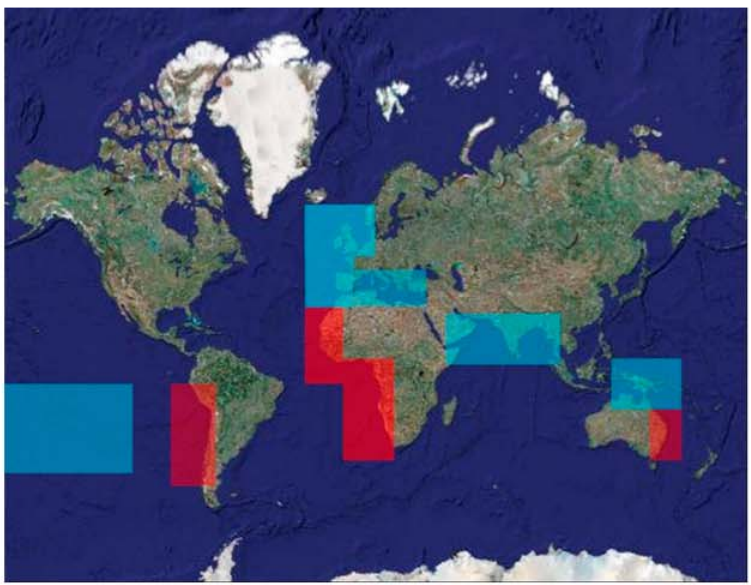
Acknowledgements:

Please do not forget to mention the following sentence in all publications or communications referring to a work based on the CTOH/LEGOS altimetry dataset:

"Altimetry data used in this study were developed, validated, and distributed by the CTOH/LEGOS, France".

Method

References

Click on the map to obtain the available data *(Google Maps)*

CTOH
Legos

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Home   Products   Altimetry   Applications   Quality Assessment   Outreach   About CTOH   News   FAQ

DATA CATALOGUE   **Coastal Products**   Global Surface Currents   Along Track Data   SubMesoscale Filaments   Ice   Sea level anomaly

Navigation

You are here: Home → Products → Coastal Products → NEA

NEA

Medsea
NEA
  Topex
  Jason-1
  TP & Jason 1
  combined data
NIndian
Solomon
SouthPacific
References

North East Atlantic Ocean
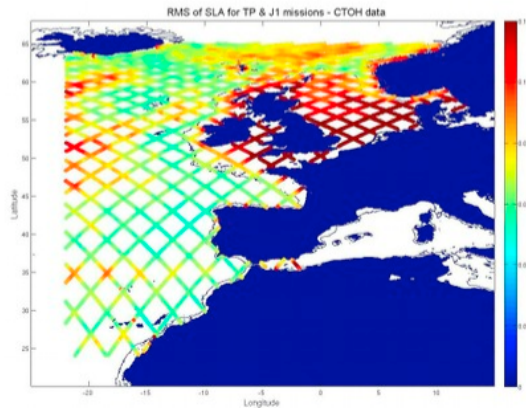
Figure: RMS of SLA for CTOH data (TP new orbit & Jason-1 missions) in the North East Atlantic Ocean

News

📄 Coastal products
reprocessed with
GOT4.7
       May 14, 2009

📄 New available
coastal products
       May 13, 2009

More news...

The **available area** streches from 24°N to 65°N and from 22°W to 10°E.

Available period and map of the nominal tracks for each satellite mission:

Nota: The data have been processed with two different tide corrections (FES04 or GOT4.7), therefore, two datasets are available for each mission (see table below).

Log in

Login Name

Password

● Log in

ⓘ Forgot your
password?

👤 New user?

FES04 tide correction	GOT4.7 tide correction
■ Topex	■ Topex
■ Jason-1	■ Jason-1
■ TOPEX & Jason-1 combined data	■ TOPEX & Jason-1 combined data

Topex data on its interlaced orbit soon available !

The data for the other altimeter missions (Jason-1, GFO and Envisat) are not validated yet but can be distributed on demand. To obtain them, please contact us at: **xxxxctoh_products@legos.obs-mip.frxxxx** (without the 'x').

Data visualisation and extraction

GDR extraction request form

This form allows you to request a GDR extraction from CTOH database.

When you've selected wanted satellite, parameters, region and period, click on •Preview. You will then be able to preview results and request GDR extraction.

Per-satellite parameters

Satellite

Prior to select any parameter, you need to select a satellite to request data from.

[jason2]

Pre-selection

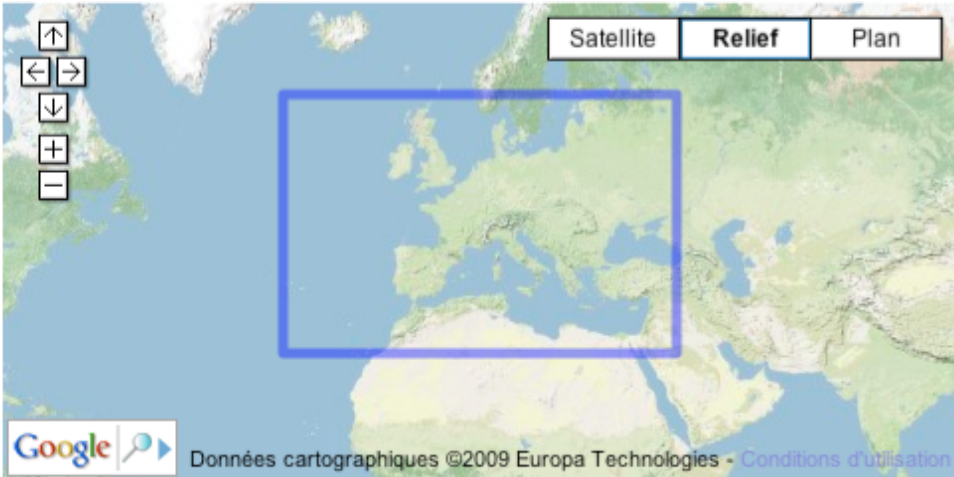Pre-selected parameters allow you to conveniently initialize the following form.

[None]

Parameters

Select parameters in this list.

- ☐ agc_c (C band corrected AGC)
- ☐ agc_ku (Ku band corrected AGC)
- ☐ agc_numval_c (number of valid points used to compute C band AGC)
- ☐ agc_numval_ku (number of valid points used to compute Ku band AGC)
- ☐ agc_rms_c (RMS of the C band AGC)
- ☐ agc_rms_ku (RMS of the Ku band AGC)
- ☐ alt (1 Hz altitude of satellite)
- ☐ alt_20hz (20 Hz altitude of satellite)
- ☐ alt_echo_type (altimeter echo type)
- ☐ alt_state_flag_acq_mode_20hz (20 Hz altimeter state flag: acquisition mode)
- ☐ alt_state_flag_band_seq (altimeter state flag: Ku/C band sequencing)

Satellite Parameter Zone

Region of Interest

You can select a region by pressing Shift key and dragging a rectangle.

[Satellite] **Relief** [Plan]

Google

Conditions d'utilisation

Alternatively, you can specify a region by its South-West and North-East corners in these fields.

sw [   ]   ne [   ]   •Update map

Spatial Criteria

Cycles selection

Fill in these fields with valid cycle number, or special keyword **first** or **last**.

Orbit

Select an orbit.

[2008/07/04: Reference orbit, active after launch on 2008/06/20]

First Cycle

Select first cycle.

[first]

Last Cycle

Select last cycle.

[last]

Temporal Criteria: date/cycle

•Preview

http://ctoh.legos.obs-mip.fr

Satellite Parameter choice

Spatial criteria

Temporal selection

• Dates are indicated *after* typing in the cycle number;
•« first » and « last » keywords are also admitted

Preview parameters

Log in Zone

Request Summary

Select ONE Parameter to preview

Log in

Login Name

Password

• Log in

ⓘ Forgot your password?

👤 New user?

ⓘ You must be logged in to process the request extraction. Please use the log-in box on the left to do so.

Request Preview and Extraction

Your request

Satellite: jason2

Orbit: 2008/07/04

Region (SW,NE): (28.304,−28.828), (59.889,40.781)

Parameters: ['alt_20hz', 'ice_range_20hz_ku', 'iono_corr_gim_ku', 'lat_20hz', 'lon_20hz', 'model_dry_tropo_corr', 'model_wet_tropo_corr', 'pole_tide', 'range_20hz_ku', 'sig0_20hz_ku', 'solid_earth_tide', 'time_20hz']

Period: cycle 20 to last

You can save your request by bookmarking the following link : CTOH : jason2 extraction of Jun 19, 2009 2:10 pm

• Edit your request

Preview

Please Note: You can only preview ONE parameter at a time. A maximum of 10 images are displayed. Please select the parameter to preview below; when requesting the extraction, your complete request will be processed, not only your preview selection.
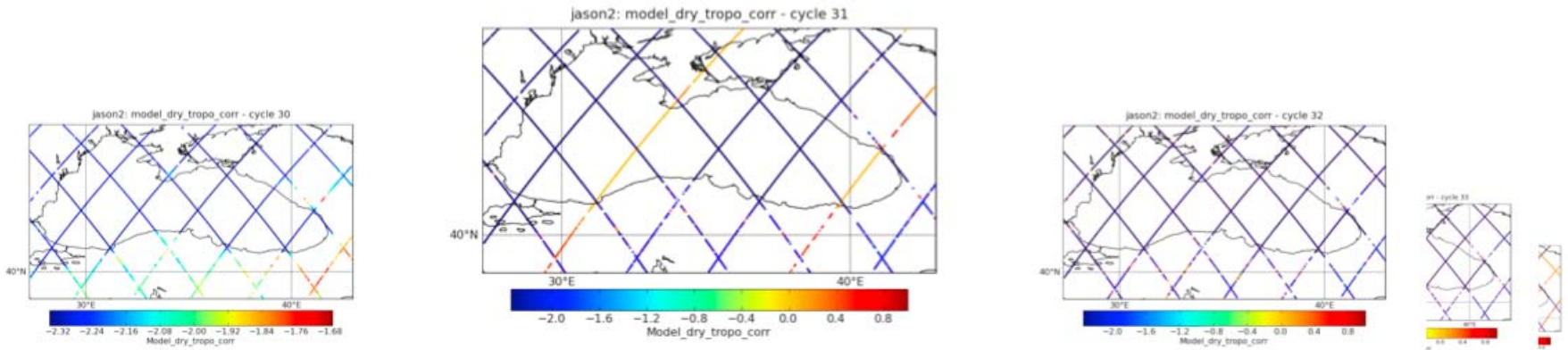
Parameter
Select the parameter to preview.

Select one... ▼
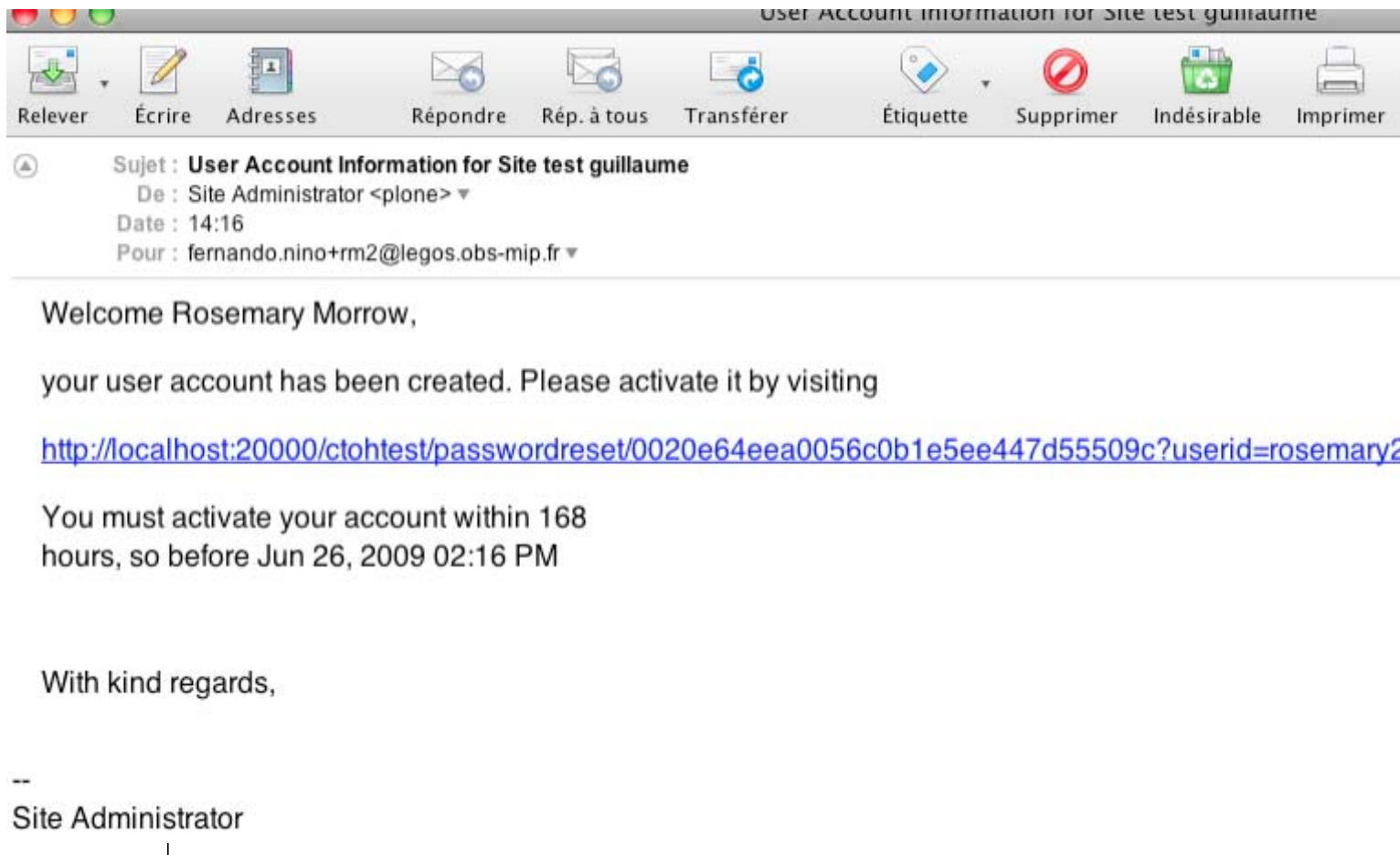
Preview using ImageFlow

Model Dry Tropo correction

Extraction

- Extraction is only possible for registered users;
- Preview is always possible.

How to access our data and products ?

TODAY : still via our Website : www.legos.obs-mip.fr/observations/ctoh

If you cant remember : Google 'CTOH'

By email : ctoh_products@legos.obs-mip.fr

Timeline

- **end June 2010: bêta version of the website:**
  - Jason-2 standard GDRs available

- **July 2010**

  http://ctoh.legos.obs-mip.fr

  - Adding CTOH corrections for automatic extraction
  - Optimisation and improved interfaces

- **September 2010**
  - Adding other satellite data bases (J1, ENV, GFO, T/P, …)

Your comments and suggestions are welcome !