



CTOH Along track Sea Level Anomalies – DATA FORMAT



The along track Sea Level Anomaly (SLA) data are available in NetCdf format, with one file per track for each of the four available altimeter missions (Topex/Poseidon, Jason-1, Geosat Follow On and Envisat).

Each file contains the sea level anomaly at each cycle and each point of the track. The tide, wind and pressure high-frequency signal corrections used in the CTOH processing tool are also provided for users who may wish to use other environmental high-frequency signal datasets.

Be careful that the tide, wind, and pressure corrections have already been applied to the SLA.

The SLA are computed according to the following formula:

$$SLA = SSH - \textit{iono} - \textit{dry tropo} - \textit{wet tropo} - \textit{solid tide} - \textit{pole tide} - \textit{loading effect} - \textit{SSB} - \textit{tide} - \textit{wind and pressure} - \textit{MSSH}$$

More details concerning the generation and validation methods of the sea level anomalies are given in the following link, on the CTOH website:

http://www.legos.obs-mip.fr/en/soa/altimetrie/ctoh/COTIER/methode/method_processing_coastalti.pdf

The users should keep in mind that the SLA and environmental corrections **data have been spatially filtered (20 km - 3 points)**.

The mean sea surface is also provided, at each point of the track.

Finally, in order to minimize the size of the files, cycle numbers have not been considered when saving the data, which means that data in column 1 of the matrices may not correspond to cycle n°1. Therefore, a vector containing the cycle numbers is also provided.

Each NetCdf file's name is labelled track-raw.MISS.NTRACK.ref.sla.nc with:

- MISS: initials of the altimeter mission (TP for Topex/Poseidon, TP2 for Topex/Poseidon on its second orbit (from 2002 to 2005), J1 for Jason-1, GFO for Geosat Follow On and RA2 for Envisat-RA2)
- NTRACK: number of the track (see the track maps available on the CTOH website)

Each file includes 9 fields corresponding to the CTOH altimetry product:

- 1) **Longitude** in degrees: lon (1 dimension)
- 2) **Latitude** in degrees: lat (1 dimension)
- 3) **Mean Sea Surface along the reference track** in (m): mssh (1 dimension)
- 4) **Cycle numbers**: cycle (1 dimension)
- 5) **Point numbers**: point (1 dimension)
- 6) **Date of measurement** in julian days: time (2 dimensions)
- 7) **Sea Level Anomaly along the reference track** in (m): slafilt (2 dimensions)

NB: *Environmental corrections have already been applied. They are given (last 2 fields) for information.*

- 8) **Tidal correction term** in (m): tidefilt (2 dimensions)
- 9) **Wind and pressure correction term** in (m): mog2dfilt (2 dimensions)

Note: the missing values are set to **99.99**.

DATA USE CONDITIONS:

Please read the data use conditions (http://www.legos.obs-mip.fr/en/soa/altimetrie/ctoh/COTIER/acces/CTOH_data_use_conditions.pdf).

Publications should include the following statement in the Acknowledgments:

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