Comparison of instrumental corrections between CCI and IPF
(RX_DEL + PTR_DELAY)

<table>
<thead>
<tr>
<th>Study variable</th>
<th>RX_and_PTR_CCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference variable</td>
<td>RX_and_PTR_IPF</td>
</tr>
<tr>
<td>Missions</td>
<td>Envisat (en), Jason-1 (j1)</td>
</tr>
<tr>
<td>Period</td>
<td>[19265.898824964341, 21890.898723935312]</td>
</tr>
</tbody>
</table>

Contents

A001 4
A002 6
A003 8
A004 12
A101 14
A102 16
A103 18
A104 20
A201 22
A202 32
A203 36
A204 42
A205 46
A206 50
**Study overview**

In this study, all instrumental corrections developed in the frame of sea-level CCI project are compared to the IPF data with the CMA USO correction to observe the impact of the CCI improvements on the ENVISAT sea surface height (SSH) in Ku-Band.

The impact of using these instrumental corrections on the SSH calculation has been analyzed for ENVISAT mission from October 2002 (cycle 10) to December 2009 (Cycle 84).

The effects of the Rx Del (USO correction) and the PTR delay have already been studied in two separate RRDPs. The aim of this RRDP is to quantify the improvements of all the new instrumental corrections provided by the CCI. This study shows the importance of the instrumental corrections on the measure of the sea surface height.

All the validation diagnostics displayed in this report have been performed in agreement with the Sea-Level CCI Product Validation Plan (PVP).
Diagnostic A001 (mission en)

**Name:** Temporal evolution of differences between both altimetric components

**Input data:** Along-track altimetric components

**Description:** The temporal evolution of global statistics (mean, variance, slope) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly). These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

![Graph showing mean and standard deviation of differences between altimetric components over time.](image)
Name: Temporal evolution of differences between both altimetric components

Input data: Along-track altimetric components

Description: The temporal evolution of global statistics (mean, variance, slope) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly). These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.
Name: Map of differences between both altimetric components over all the period

Input data: Along-track altimetric components

Description: The map of global statistics (mean, standard deviation) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated over a given period which is the longer as possible to have obtain reliable statically results. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.
Diagnostic A002 (mission j1)

Name: Map of differences between both altimetric components over all the period

Input data: Along-track altimetric components

Description: The map of global statistics (mean, standard deviation) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated over a given period which is the longer as possible to have obtain reliable statically results. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

Mean of RX_and_PTR_CCI – RX_and_PTR_IPF
Mission j1, cycles 28 to 291

Moyenne
Standard deviation of RX_and_PTR_CCI – RX_and_PTR_IPF
Mission j1, cycles 28 to 291
Diagnostic A003_a (mission en)

Name: Periodogram derived from temporal evolution of altimetric component differences

Input data: Along-track altimetric components

Description: The periodogram derived from temporal and global altimetric component differences is calculated from cycle by cycle monitoring of altimetric component differences (derived from diagnostic A001). It is calculated from the mean or the variance differences. The Periodogram can be calculated for all the periods, but it can be focused on a dedicated period.
**Diagnostic A003_b (mission en)**

**Name**: Periodogram derived from temporal evolution of altimetric component differences

**Input data**: Along-track altimetric components

**Description**: The periodogram derived from temporal and global altimetric component differences is calculated from cycle by cycle monitoring of altimetric component differences (derived from diagnostic A001). It is calculated from the mean or the variance differences. The Periodogram can be calculated for all the periods, but it can be focused on a dedicated period.
Name: Periodogram derived from temporal evolution of altimetric component differences

Input data: Along-track altimetric components

Description: The periodogram derived from temporal and global altimetric component differences is calculated from cycle by cycle monitoring of altimetric component differences (derived from diagnostic A001). It is calculated from the mean or the variance differences. The Periodogram can be calculated for all the periods, but it can be focused on a dedicated period.
**Name**: Periodogram derived from temporal evolution of altimetric component differences

**Input data**: Along-track altimetric components

**Description**: The periodogram derived from temporal and global altimetric component differences is calculated from cycle by cycle monitoring of altimetric component differences (derived from diagnostic A001). It is calculated from the mean or the variance differences. The Periodogram can be calculated for all the periods, but it can be focused on a dedicated period.
Diagnostic A004 (mission en)

**Name**: Altimetric component differences versus coastal distances

**Input data**: Along-track altimetric components

**Description**: Mean and standard deviation of the differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are computed and plotted in function of coastal distances between 0 and 100 km.
**Name**: Altimetric component differences versus coastal distances

**Input data**: Along-track altimetric components

**Description**: Mean and standard deviation of the differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are computed and plotted in function of coastal distances between 0 and 100 km.
**Diagnostic A101 (mission en)**

**Name:** Temporal evolution of SSH crossovers

**Input data:** Sea Surface Height (SSH) crossovers

**Description:** The temporal evolution of global statistics (mean, standard deviation) of SSH differences are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).
**Name**: Temporal evolution of SSH crossovers

**Input data**: Sea Surface Height (SSH) crossovers

**Description**: The temporal evolution of global statistics (mean, standard deviation) of SSH differences are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).
**Name**: Differences between temporal evolution of SSH crossovers

**Input data**: Sea Surface Height (SSH) crossovers

**Description**: The difference of temporal evolution between the global statistics (mean, standard deviation) of SSH differences are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).
Diagnostic A102 (mission j1)

Name: Differences between temporal evolution of SSH crossovers

Input data: Sea Surface Height (SSH) crossovers

Description: The difference of temporal evolution between the global statistics (mean, standard deviation) of SSH differences are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).
Name: Map of SSH crossovers

Input data: Sea Surface Height (SSH) crossovers

Description: The differences between maps of SSH crossovers differences (mean, variance) are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).
Diagnostic A103 (mission j1)

Name: Map of SSH crossovers

Input data: Sea Surface Height (SSH) crossovers

Description: The differences between maps of SSH crossovers differences (mean, variance) are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).
**Diagnostic A104 (mission en)**

**Name**: Differences between maps of SSH crossovers

**Input data**: Sea Surface Height (SSH) crossovers

**Description**: The differences between maps of SSH crossovers (derived from diagnostic A103) are calculated from the SSH crossover differences (mean, standard deviation) using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).

**VAR(SSH with RX_and_PTR_CCI) – VAR(SSH with RX_and_PTR_IPF)**

Mission en, cycles 10 to 84

SSH crossovers: difference of variances (cm^2)
Diagnostic A104 (mission j1)

Name: Differences between maps of SSH crossovers

Input data: Sea Surface Height (SSH) crossovers

Description: The differences between maps of SSH crossovers (derived from diagnostic A103) are calculated from the SSH crossover differences (mean, standard deviation) using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than 10 days (in order to reduce the effect of the oceanic variability).

VAR(SSH with RX_and_PTR_CCI) – VAR(SSH with RX_and_PTR_IPF)
Mission j1, cycles 28 to 291

SSH crossovers: difference of variances (cm^2)
**Name**: Temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
Name: Temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetitivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
Name: Temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetitively, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
**Name:** Temporal evolution of Sea Level Anomaly (SLA)

**Input data:** Along track SLA

**Description:** The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
**Name**: Temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
Diagnostic A201_b (mission j1)

Name: Temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
**Name**: Temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
Diagnostic A201.d (mission j1)

**Name**: Temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.

![Graph of Global MSL](image)

Global MSL  
Mission j1, cycles 28 to 291

- SLA with RX_and_PTR_CCI, Mean = 10.71
- SLA with RX_and_PTR_IPF, Mean = 10.71
Diagnostic A201_e (mission j1)

**Name**: Temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids), or separating North and South hemispheres.
Diagnostic A202.a (mission en)

Name: Differences between temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The differences between temporal evolution of SLA are calculated from statistics derived from diagnostic A201 (mean, variance) using 2 different components in the SLA calculation. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids) or separating North and South hemispheres.
Name: Differences between temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The differences between temporal evolution of SLA are calculated from statistics derived from diagnostic A201 (mean, variance) using 2 different components in the SLA calculation. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids) or separating North and South hemispheres.
Diagnostic A202_a (mission j1)

**Name**: Differences between temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The differences between temporal evolution of SLA are calculated from statistics derived from diagnostic A201 (mean, variance) using 2 different components in the SLA calculation. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids) or separating North and South hemispheres.

![Graph showing the difference in variance of SLA between two models over cycles](image-url)
Name: Differences between temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The differences between temporal evolution of SLA are calculated from statistics derived from diagnostic A201 (mean, variance) using 2 different components in the SLA calculation. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids) or separating North and South hemispheres.
Diagnostic A203.a (mission en)

Name: Map of Sea Level Anomaly (SLA) over all the period

Input data: Along track SLA

Description: The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.
**Name**: Map of Sea Level Anomaly (SLA) over all the period

**Input data**: Along track SLA

**Description**: The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.
Name: Map of Sea Level Anomaly (SLA) over all the period

Input data: Along track SLA

Description: The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.
Diagnostic A203_a (mission j1)

Name: Map of Sea Level Anomaly (SLA) over all the period

Input data: Along track SLA

Description: The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

SLA with RX_and_PTR_CCI trends
Mission j1, cycles 28 to 291

Trends (mm/yr)

-25.2796  -8.64115  7.99729  24.63573

SLA with RX_and_PTR_IPF trends
Mission j1, cycles 28 to 291

Trends (mm/yr)

-25.2796  -8.64115  7.99729  24.63573
Diagnostic A203_b (mission j1)

Name: Map of Sea Level Anomaly (SLA) over all the period

Input data: Along track SLA

Description: The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

![Map of Sea Level Anomaly](image)

**SLA with RX_and_PTR_CCI trends**: even pass numbers
Mission j1, cycles 28 to 291

**SLA with RX_and_PTR_IPF trends**: even pass numbers
Mission j1, cycles 28 to 291
**Diagnostic A203_c (mission j1)**

**Name**: Map of Sea Level Anomaly (SLA) over all the period

**Input data**: Along track SLA

**Description**: The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

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**SLA with RX_and_PTR_CCI trends**: odd pass numbers
Mission j1, cycles 28 to 291

Trends (mm/yr)

<table>
<thead>
<tr>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>27.02954</td>
</tr>
<tr>
<td>27.0876</td>
</tr>
<tr>
<td>9.53603</td>
</tr>
<tr>
<td>8.74676</td>
</tr>
</tbody>
</table>

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**SLA with RX_and_PTR_IPF trends**: odd pass numbers
Mission j1, cycles 28 to 291

Trends (mm/yr)

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</tr>
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</tr>
</tbody>
</table>
Diagnostic A204.a (mission en)

Name: Differences between maps of SLA

Input data: Along track SLA

Description: The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).

SLA with RX_and_PTR_CCI trends – SLA with RX_and_PTR_IPF trends
Mission en, cycles 10 to 84

Trends (mm/yr)
**Diagnostic A204_b (mission en)**

**Name**: Differences between maps of SLA

**Input data**: Along track SLA

**Description**: The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).

![Graph 1](image1.png)

**RX_and_PTR_CCI trends – SLA with RX_and_PTR_IPF trends**: even pass

Mission en, cycles 10 to 84

![Graph 2](image2.png)

**RX_and_PTR_CCI trends – SLA with RX_and_PTR_IPF trends**: odd pass

Mission en, cycles 10 to 84
**Diagnostic A204_a (mission j1)**

**Name**: Differences between maps of SLA

**Input data**: Along track SLA

**Description**: The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).

**SLA with RX_and_PTR_CCI trends – SLA with RX_and_PTR_IPF trends**

**Mission j1, cycles 28 to 291**
**Diagnostic A204_b (mission j1)**

**Name:** Differences between maps of SLA

**Input data:** Along track SLA

**Description:** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).

![Graph 1: RX_and_PTR_CCI trends – SLA with RX_and_PTR_IPF trends: even pass](image1)

Mission j1, cycles 28 to 291

![Graph 2: RX_and_PTR_CCI trends – SLA with RX_and_PTR_IPF trends: odd pass](image2)

Mission j1, cycles 28 to 291
Name: Differences between maps of SLA (2)

Input data: Along track SLA

Description: The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).
Name: Differences between maps of SLA (2)

Input data: Along track SLA

Description: The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).
Name: Differences between maps of SLA (2)

Input data: Along track SLA

Description: The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).
**Diagnostic A205.b (mission j1)**

**Name:** Differences between maps of SLA (2)

**Input data:** Along track SLA

**Description:** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).

\_and\_PTR\_CCI amplitude – SLA with RX\_and\_PTR\_IPF amplitude : semi–
Mission j1, cycles 28 to 291

\_RX\_and\_PTR\_CCI phase – SLA with RX\_and\_PTR\_IPF phase : semi–annual
Mission j1, cycles 28 to 291
Name: Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.
**Name:** Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

**Input data:** Along track SLA

**Description:** The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.

![Periodogram of north hemisphere SLA](image1)

![Periodogram of north hemisphere SLA](image2)
**Diagnostic A206.c (mission en)**

**Name**: Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.

![Periodogram of south hemisphere SLA (reference period = 1 year)](image1)

![Periodogram of south hemisphere SLA (period = [0, 1 year])](image2)
Name: Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

Input data: Along track SLA

Description: The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.
Diagnostic A206_b (mission j1)

**Name**: Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

**Input data**: Along track SLA

**Description**: The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.

![Periodogram of north hemisphere SLA (reference period = 1 year)](image1)

Mission j1, cycles 28 to 291

Amplitude (cm)

Period (days)

![Periodogram of north hemisphere SLA (period = [0, 1 year])](image2)

Mission j1, cycles 28 to 291

Amplitude (cm)

Period (days)
**Name:** Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

**Input data:** Along track SLA

**Description:** The periodogram derived from temporal evolution of SLA (global, northern or southern hemisphere) can be done over all periods or focusing on particular periods, such as annual, semi annual or 60 day signal. Therefore mean of SLA differences are computed (every day or cycle), and time data series are plotted as a periodogram.
**Name**: Sea Level Anomaly (SLA) versus coastal distance

**Input data**: Along track SLA

**Description**: Mean and standard deviation of SLA - computed by using successively both altimetric components - are plotted in function of coastal distances between 0 and 100 km.

![Graphs showing SLA and standard deviation vs coastal distance](image-url)
Diagnostic A207 (mission j1)

**Name**: Sea Level Anomaly (SLA) versus coastal distance

**Input data**: Along track SLA

**Description**: Mean and standard deviation of SLA - computed by using successively both altimetric components - are plotted in function of coastal distances between 0 and 100 km.
Diagnostic A208 (mission en)

**Name:** Sea Level Anomaly (SLA) differences versus coastal distance

**Input data:** Along track SLA

**Description:** The differences of SLA variances - computed by using successively both altimetric components - are plotted in function of coastal distances between 0 and 100 km.

![Diagram showing the differences of SLA variances](image)

VAR(SLA with RX_and_PTR_CCI) - VAR(SLA with RX_and_PTR_IPF)

Mission en, cycles 10 to 84

Mean = 0.9306
Name: Sea Level Anomaly (SLA) differences versus coastal distance

Input data: Along track SLA

Description: The differences of SLA variances - computed by using successively both altimetric components - are plotted in function of coastal distances between 0 and 100 km.
Diagnostic A209 (mission en)

Name: Differences between maps of SLA (3)

Input data: Along track SLA

Description: The differences between maps of SLA are calculated from the SLA differences (mean, standard deviation) using successively both altimetric components in the SLA calculation.

VAR(SLA with RX_and_PTR_CCI) – VAR(SLA with RX_and_PTR_IPF)
Mission en, cycles 10 to 84

Difference of variances (cm^2)
Diagnostic A209 (mission j1)

Name: Differences between maps of SLA (3)

Input data: Along track SLA

Description: The differences between maps of SLA are calculated from the SLA differences (mean, standard deviation) using successively both altimetric components in the SLA calculation.

$$\text{VAR(SLA with RX\_and\_PTR\_CCI)} - \text{VAR(SLA with RX\_and\_PTR\_IPF)}$$

Mission j1, cycles 28 to 291

Difference of variances (cm$^2$)
Name: Temporal evolution of Sea level Anomaly (SLA) for 2 missions over the same period

Input data: Along track SLA

Description: Temporal evolution of SLA statistics (mean, standard deviation) of 2 or more missions are computed over the same period as long as possible using successively both components in the SLA calculation. This can be done globally, or separating in ascending and descending or in northern and southern hemisphere. In order to assure comparability, statistics are computed using sea level standard calculation (mean per box of 2x2 and weighted by cosine of latitude for the global mean) limited to 66 latitude.
**Diagnostic B201_b**

**Name**: Temporal evolution of Sea level Anomaly (SLA) for 2 missions over the same period

**Input data**: Along track SLA

**Description**: Temporal evolution of SLA statistics (mean, standard deviation) of 2 or more missions are computed over the same period as long as possible using successively both components in the SLA calculation. This can be done globally, or separating in ascending and descending or in northern and southern hemisphere. In order to assure comparability, statistics are computed using sea level standard calculation (mean per box of 2x2 and weighted by cosine of latitude for the global mean) limited to 66 latitude.
Name: Temporal evolution of Sea level Anomaly (SLA) for 2 missions over the same period

Input data: Along track SLA

Description: Temporal evolution of SLA statistics (mean, standard deviation) of 2 or more missions are computed over the same period as long as possible using successively both components in the SLA calculation. This can be done globally, or separating in ascending and descending or in northern and southern hemisphere. In order to assure comparability, statistics are computed using sea level standard calculation (mean per box of 2x2 and weighted by cosine of latitude for the global mean) limited to 66 latitude.
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**Name**: Temporal evolution of Sea level Anomaly (SLA) for 2 missions over the same period

**Input data**: Along track SLA

**Description**: Temporal evolution of SLA statistics (mean, standard deviation) of 2 or more missions are computed over the same period as longest as possible using successively both components in the SLA calculation. This can be done globally, or separating in ascending and descending or in northern and southern hemisphere. In order to assure comparability, statistics are computed using sea level standard calculation (mean per box of 2x2 and weighted by cosine of latitude for the global mean) limited to 66 latitude.
Name : Differences between maps of Sea Level Anomaly (SLA) for 2 missions over the same period

Input data : Along track SLA

Description : The differences between maps of SLA (mean, variance or slope) derived from 2 altimetric missions are computed over the same period (as long as possible) using successively both altimetric components in the SLA calculation. Maps are calculated globally, they can be also calculated separating ascending and descending passes.
**Diagnostic B202_b**

**Name**: Differences between maps of Sea Level Anomaly (SLA) for 2 missions over the same period

**Input data**: Along track SLA

**Description**: The differences between maps of SLA (mean, variance or slope) derived from 2 altimetric missions are computed over the same period (as long as possible) using successively both altimetric components in the SLA calculation. Maps are calculated globally, they can be also calculated separating ascending and descending passes.

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**SLA with RX_and_PTR_CCI differences**: en – j1, even pass numbers
Missions en (cycles 11 to 83) and j1 (cycles 28 to 291)

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**SLA with RX_and_PTR_IPF differences**: en – j1, even pass numbers
Missions en (cycles 11 to 83) and j1 (cycles 28 to 291)
Name: Differences between maps of Sea Level Anomaly (SLA) for 2 missions over the same period

Input data: Along track SLA

Description: The differences between maps of SLA (mean, variance or slope) derived from 2 altimetric missions are computed over the same period (as long as possible) using successively both altimetric components in the SLA calculation. Maps are calculated globally, they can be also calculated separating ascending and descending passes.