

## Perfo radiometre: Mesures 5E vs P2

Study variable	<b>TRO_HUM_RAD_ALG02</b>
Reference variable	<b>TRO_HUM_RAD_ALG06</b>
Missions	AltiKa ( <i>al</i> )
Period	[23083.0, 23889.0]

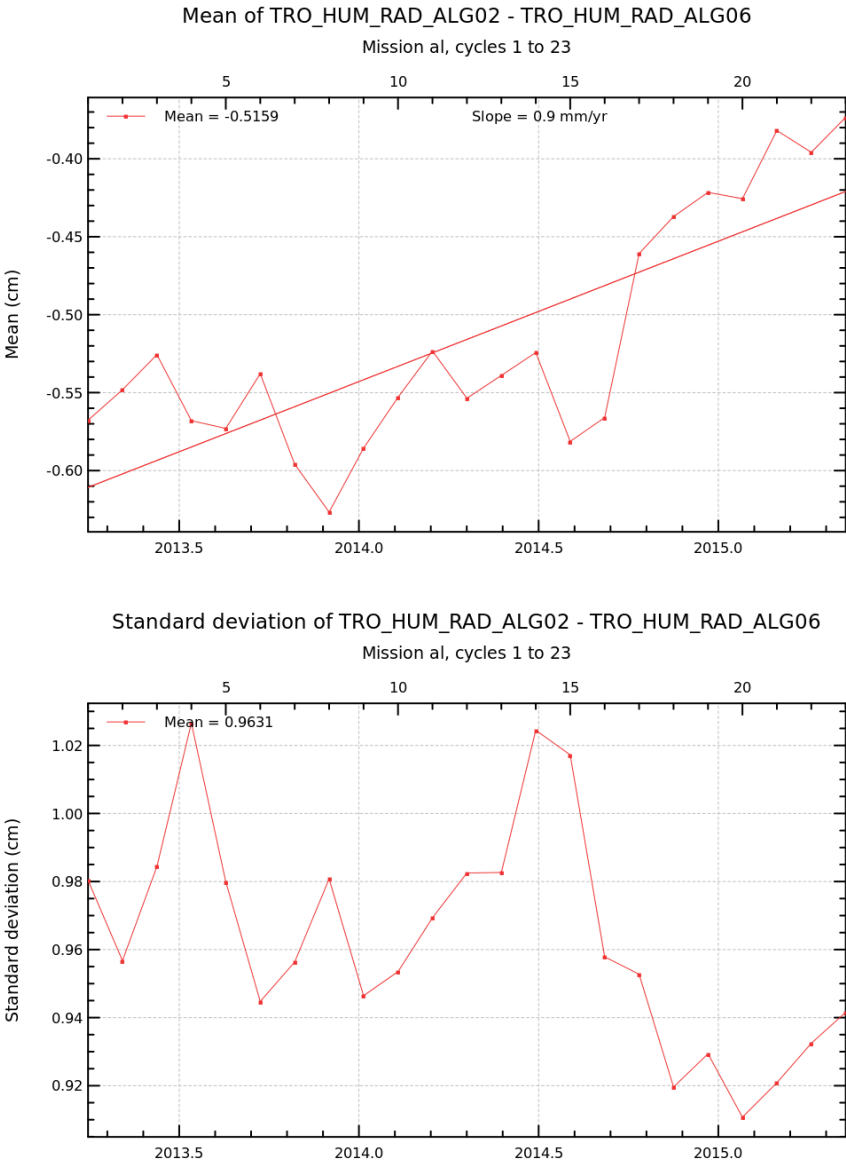
Creation date : 2015/11/18

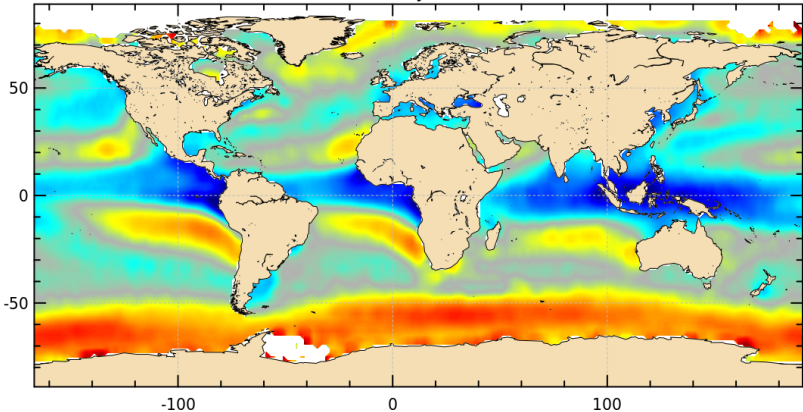
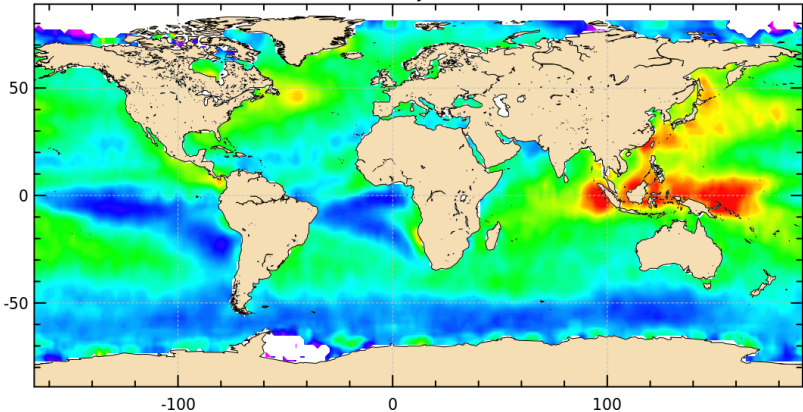
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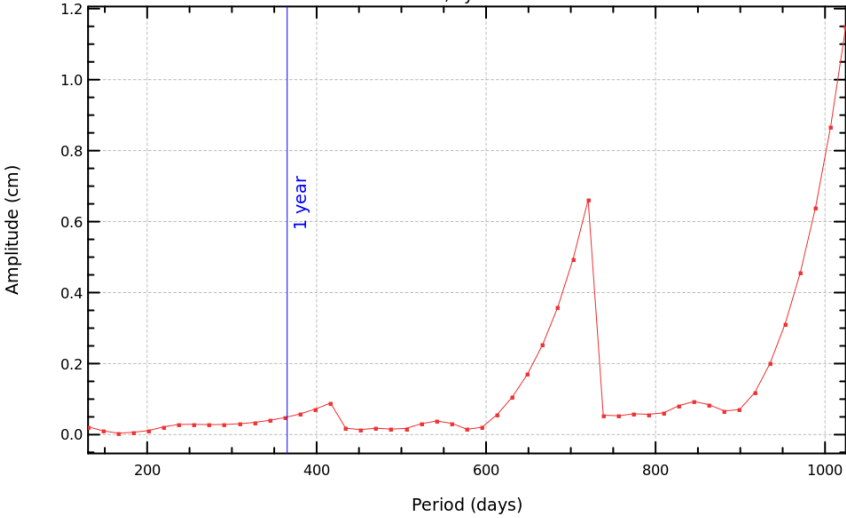
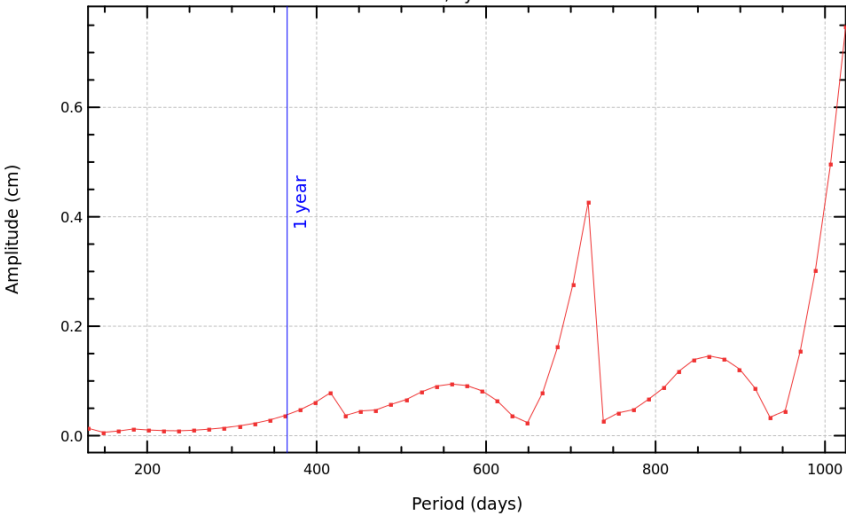


Diagnostic A002 (mission al)	
Name : Temporal evolution of differences between both altimetric components	
Input data : Along track altimetric components	
Description : The temporal evolution of global statistics (mean, variance, slope) of differences between 2 different standards of a same altimetric 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.	



Diagnostic A003 (mission al)	
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.	
<div>Mean of TRO_HUM_RAD_ALG02 - TRO_HUM_RAD_ALG06</div> <div>Mission al, cycles 1 to 23</div>  <div>Mean (cm)</div> <div>-1.5 -1.0 -0.5 0.0 0.5 1.0</div> <div>Standard deviation of TRO_HUM_RAD_ALG02 - TRO_HUM_RAD_ALG06</div> <div>Mission al, cycles 1 to 23</div>  <div>Standard Deviation (cm)</div> <div>0.4 0.6 0.8 1.0 1.2</div>	



Diagnostic type : Mono-mission analyses	<b>Diagnostic A004_a (mission al)</b>
	<b>Name :</b> Periodogram derived from temporal evolution of altimetric component differences
	<b>Input data :</b> Along track altimetric components
	<b>Description :</b> 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.
	<div><p>f the mean of TRO_HUM_RAD_ALG02 - TRO_HUM_RAD_ALG06 (reference p</p><p>Mission al, cycles 1 to 23</p><p>Amplitude (cm)</p><p>Period (days)</p></div> <div><p>andard deviation of TRO_HUM_RAD_ALG02 - TRO_HUM_RAD_ALG06 (refer</p><p>Mission al, cycles 1 to 23</p><p>Amplitude (cm)</p><p>Period (days)</p></div>

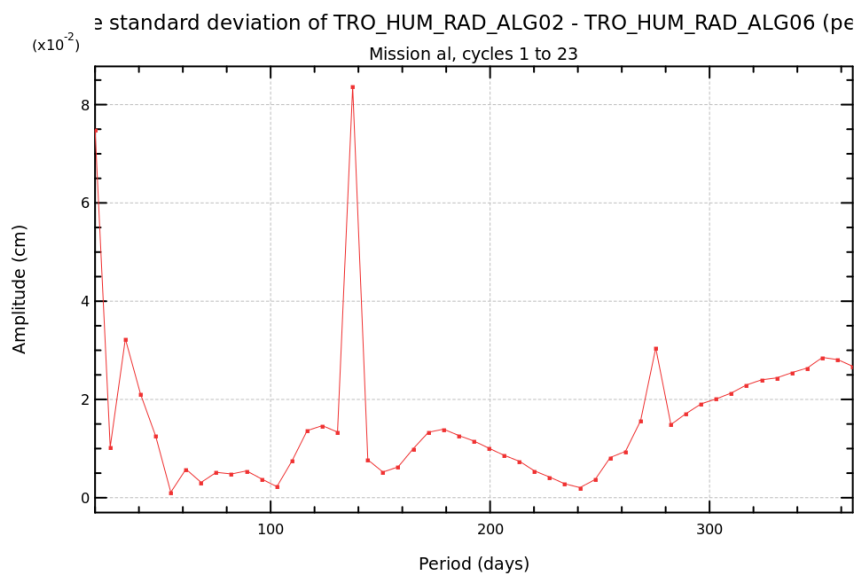
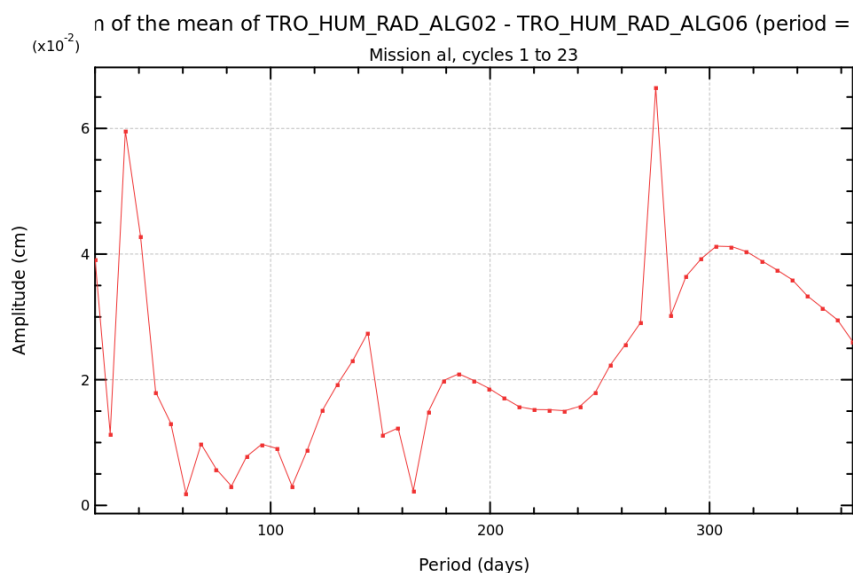
## Diagnostic A004\_b (mission al)

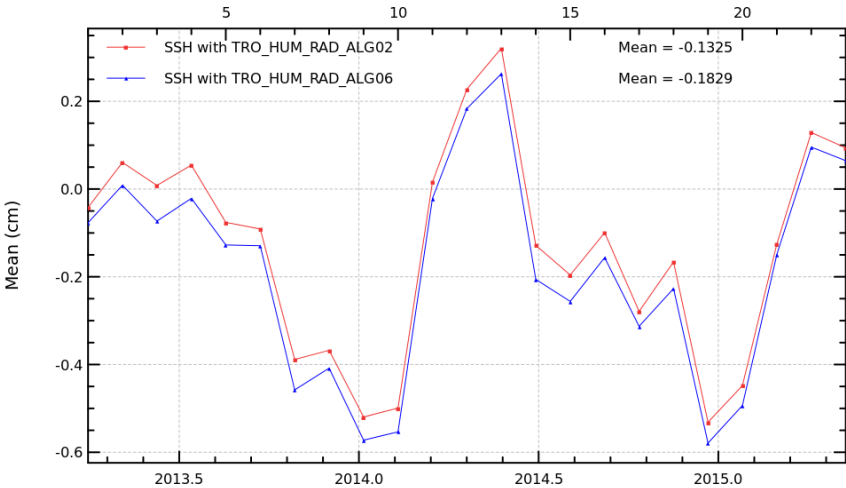
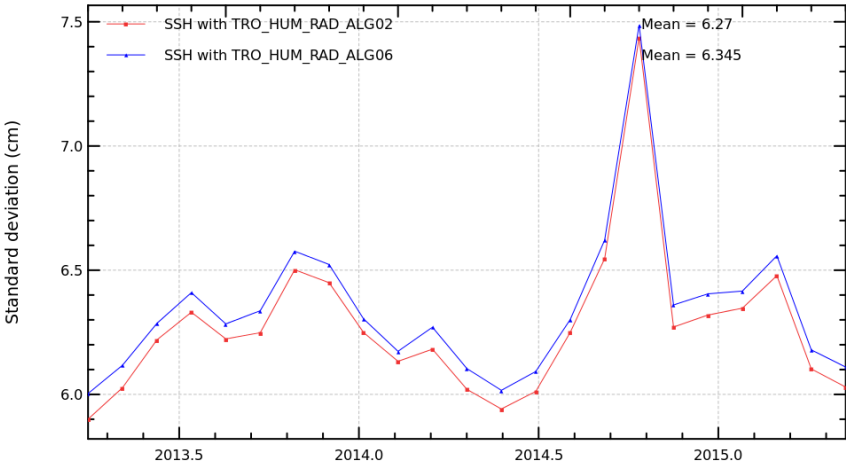
**Name :** Periodogram derived from temporal evolution of altimetric component differences

**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 type : Mono-mission analyses



Diagnostic A101_a (mission al)	
Name : Temporal evolution of SSH crossovers	
Input data : Sea Surface Height (SSH) crossovers	
<p><b>Description :</b> 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).</p>	
<div><div><div>Mean of SSH crossovers</div><div>Mission al, cycles 1 to 23</div><div></div></div><div><div><div>Standard deviations of SSH crossovers</div><div>Mission al, cycles 1 to 23</div><div></div></div></div></div>	

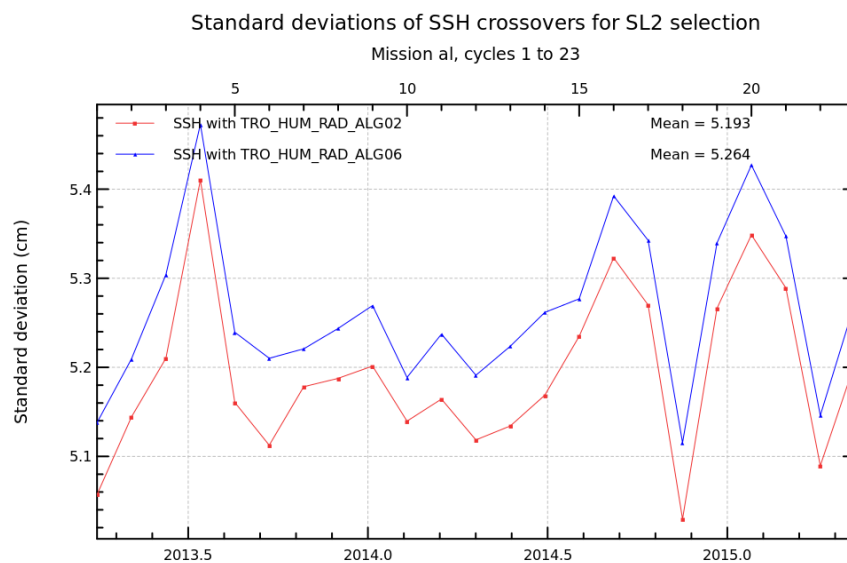
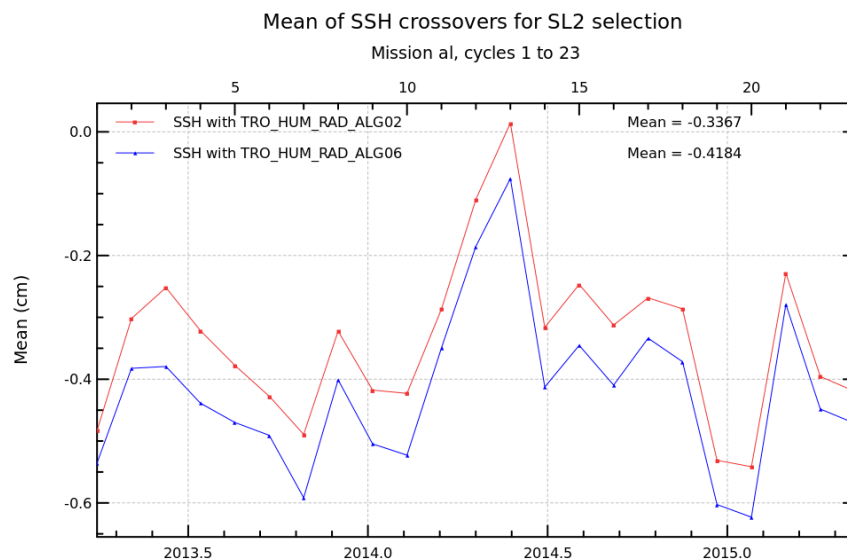
## Diagnostic A101\_b (mission al)

**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).

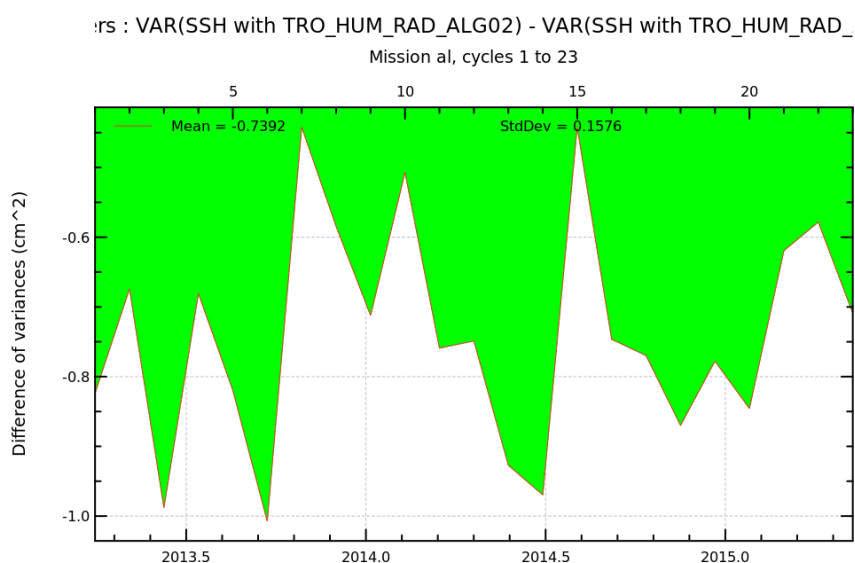
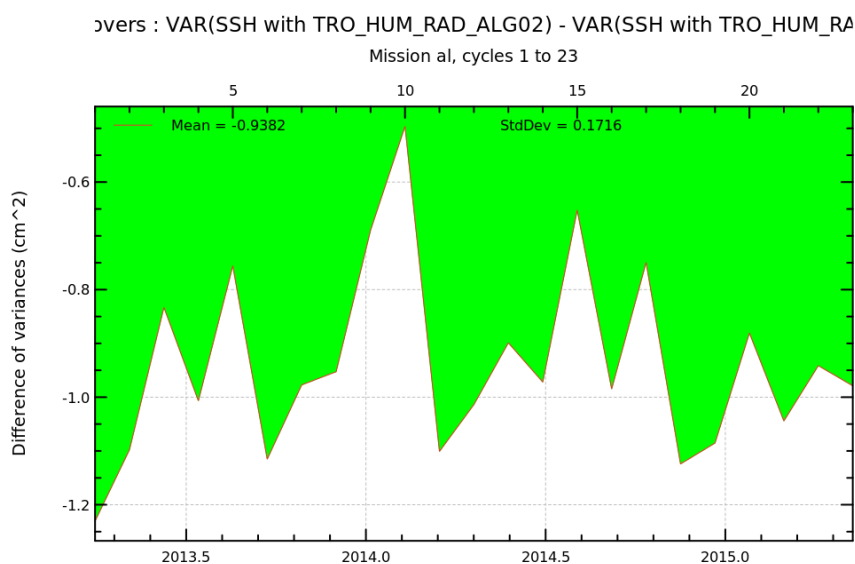
Diagnostic type : Mono-mission analyses



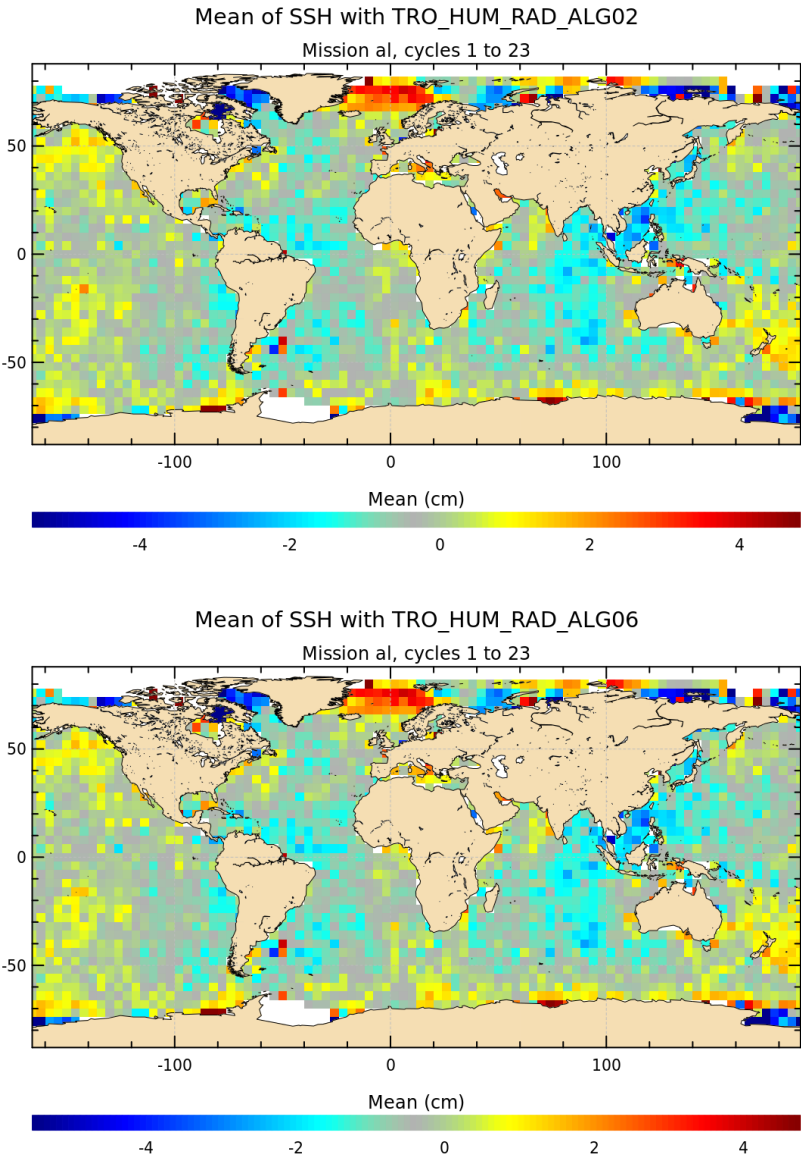
**Name :** Differences between temporal evolution of SSH crossovers

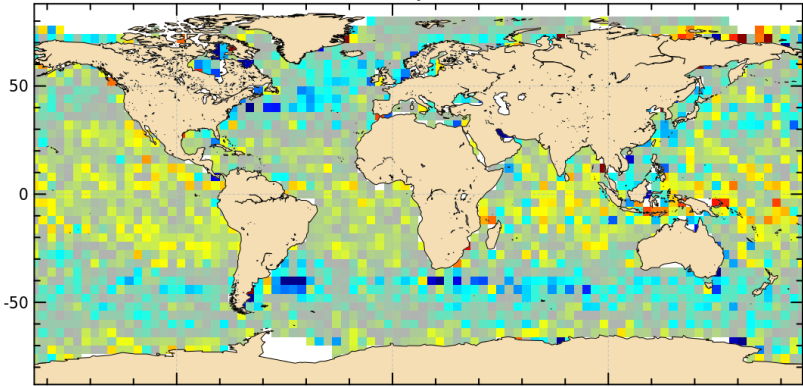
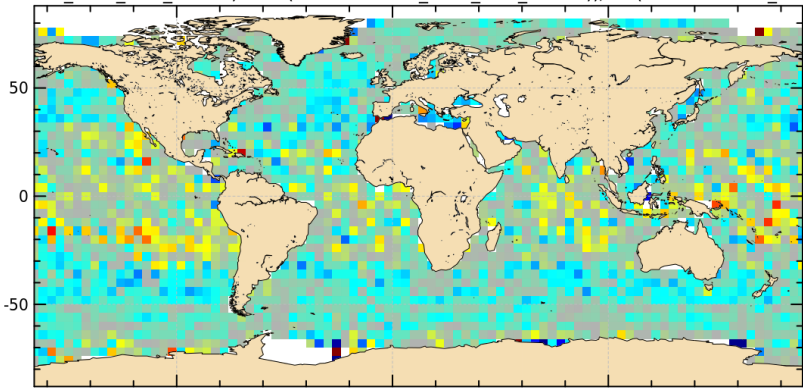
**Input data :** Sea Surface Height (SSH) crossovers

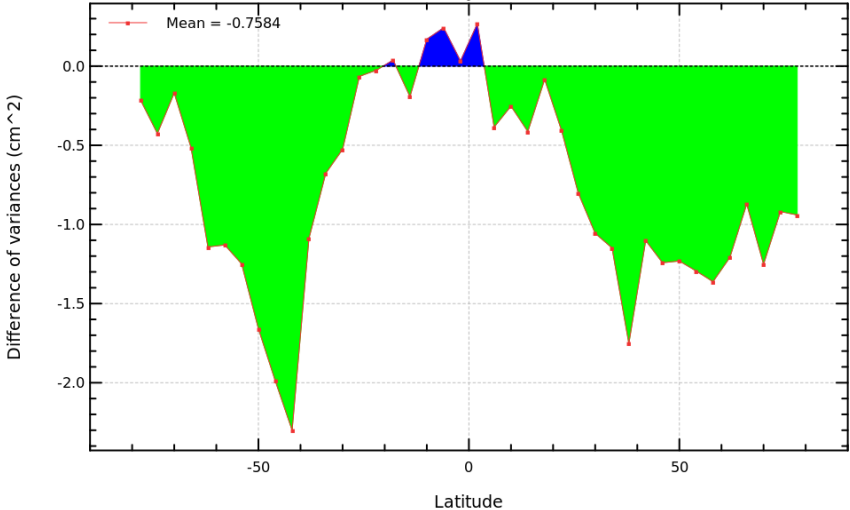
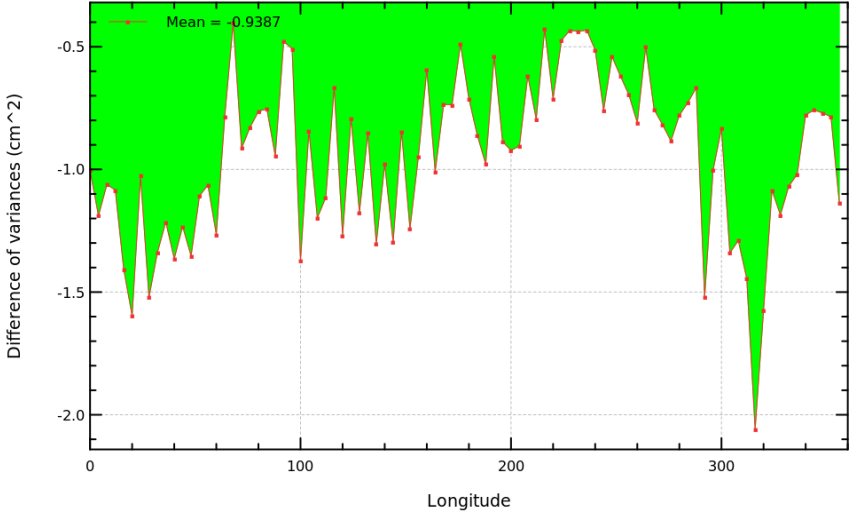
**Description :** The difference of temporal evolution between the global statistics (mean, standard deviation) of SSH differences are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences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



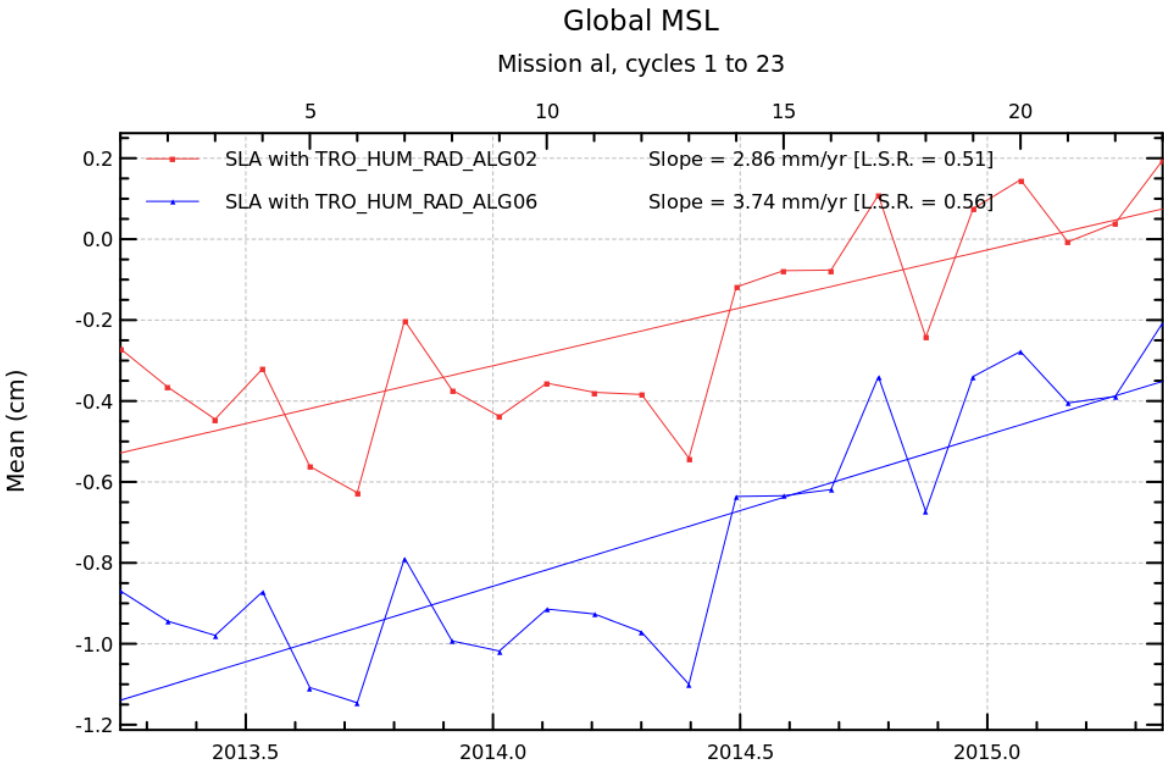
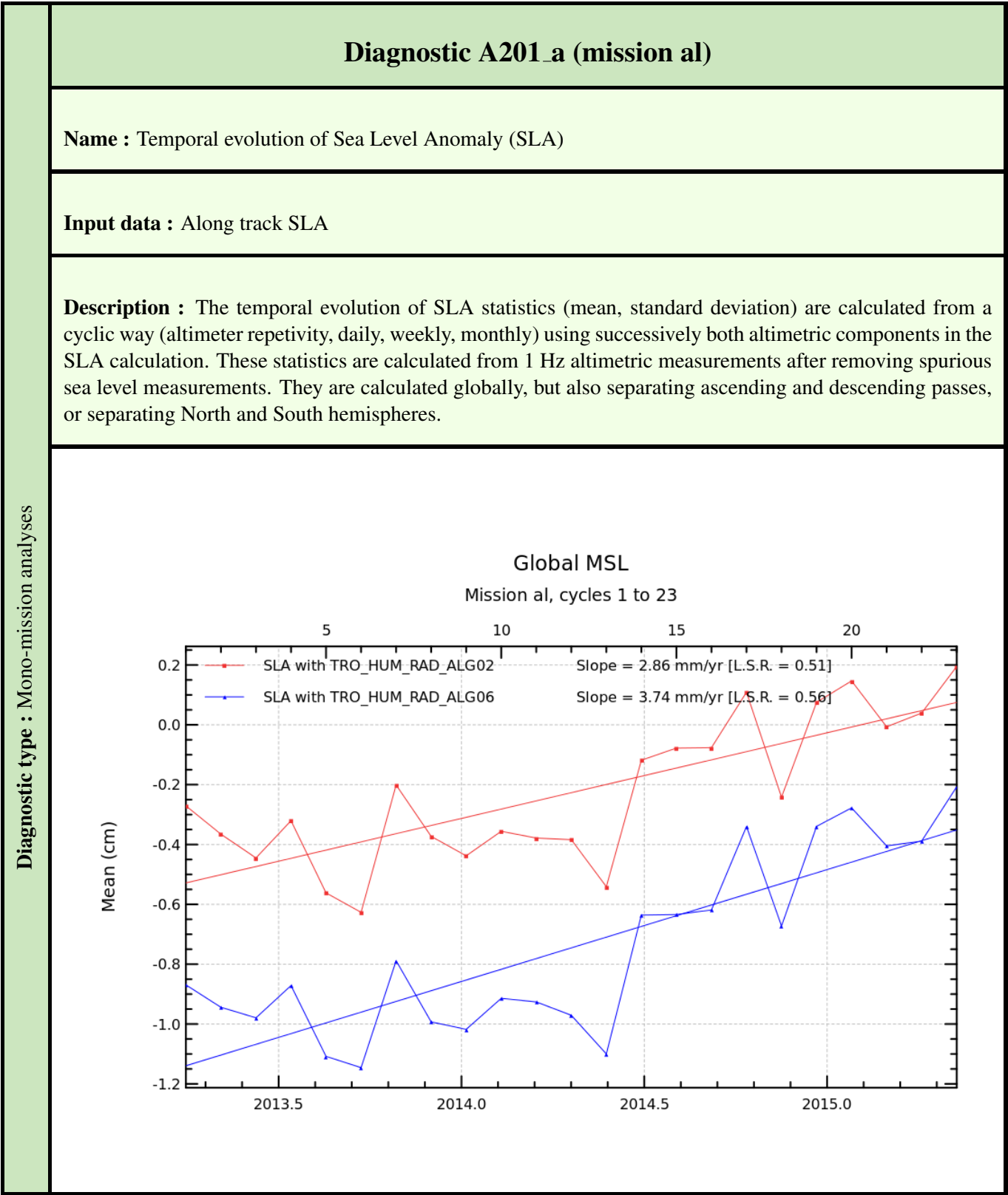
Diagnostic A103 (mission al)	
Name : Map of SSH crossovers	
Input data : Sea Surface Height (SSH) crossovers	
Description : The differences between maps of SSH crossovers differences (mean, variance) are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are 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 type : Mono-mission analyses	<div>Diagnostic A104 (mission al)</div>
	<div>Name : Differences between maps of SSH crossovers</div>
	<div>Input data : Sea Surface Height (SSH) crossovers</div>
	<div>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).</div>
	<div><div><div><math>\Delta(\text{SSH with TRO\_HUM\_RAD\_ALG02}) - \text{VAR}(\text{SSH with TRO\_HUM\_RAD\_ALG02})</math></div><div>Mission al, cycles 1 to 23</div><div>SSH crossovers : difference of variances (cm^2)</div><div><div>-5</div><div>0</div><div>5</div></div></div><div><div><math>\text{TRO\_HUM\_RAD\_ALG02}) - \text{Var}(\text{SSH with TRO\_HUM\_RAD\_ALG06}) / \text{Var}(\text{SSH with TRO\_HUM\_RAD\_ALG02}) - \ln \%</math></div><div>Percentage of X_SSH error reduction</div><div>Reduction/Increase of variance of X_SSH - ln %</div><div><div>-20</div><div>0</div><div>20</div></div></div></div>

Diagnostic type : Mono-mission analyses	Diagnostic A105 (mission al)	
	Name : Differences between SSH crossovers vs coastal distance	
	Input data : Sea Surface Height (SSH) crossovers	
	Description : The differences of SSH variances at crossovers are plotted in function of coastal distance, latitudes and longitudes.	
	<div><div><div>AR(SSH with TRO_HUM_RAD_ALG02) - VAR(SSH with TRO_HUM_RAD_ALG02)</div><div>Mission al, cycles 1 to 23</div><div>Mean = -0.7584</div><div></div></div><div><div>AR(SSH with TRO_HUM_RAD_ALG02) - VAR(SSH with TRO_HUM_RAD_ALG02)</div><div>Mission al, cycles 1 to 23</div><div>Mean = -0.9387</div><div></div></div></div>	





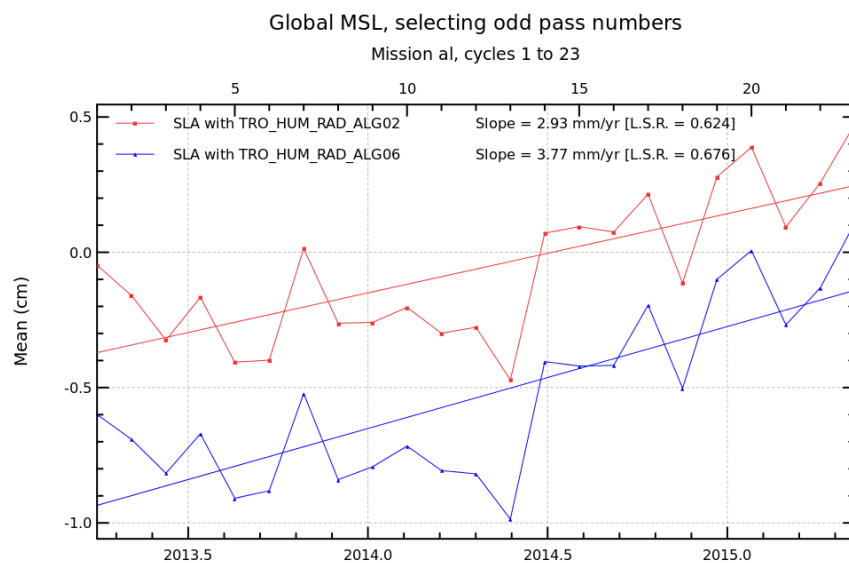
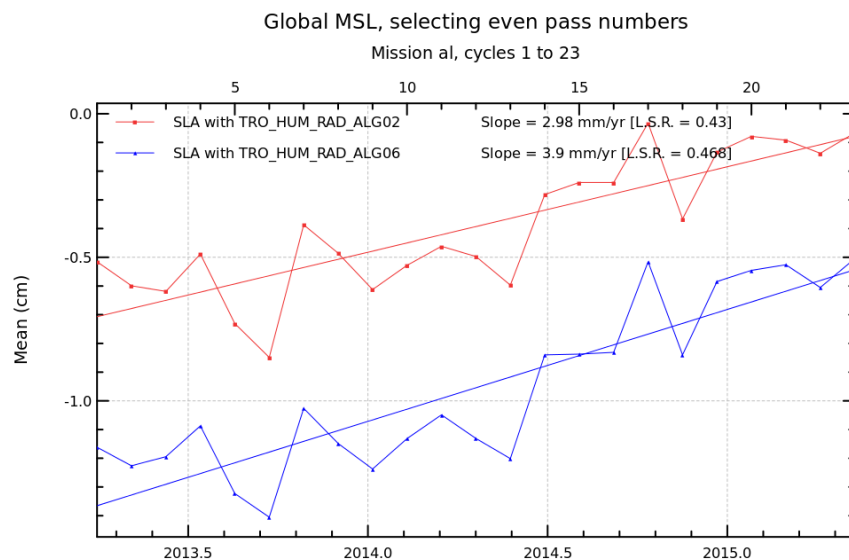
## Diagnostic A201\_b (mission al)

**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, or separating North and South hemispheres.

Diagnostic type : Mono-mission analyses



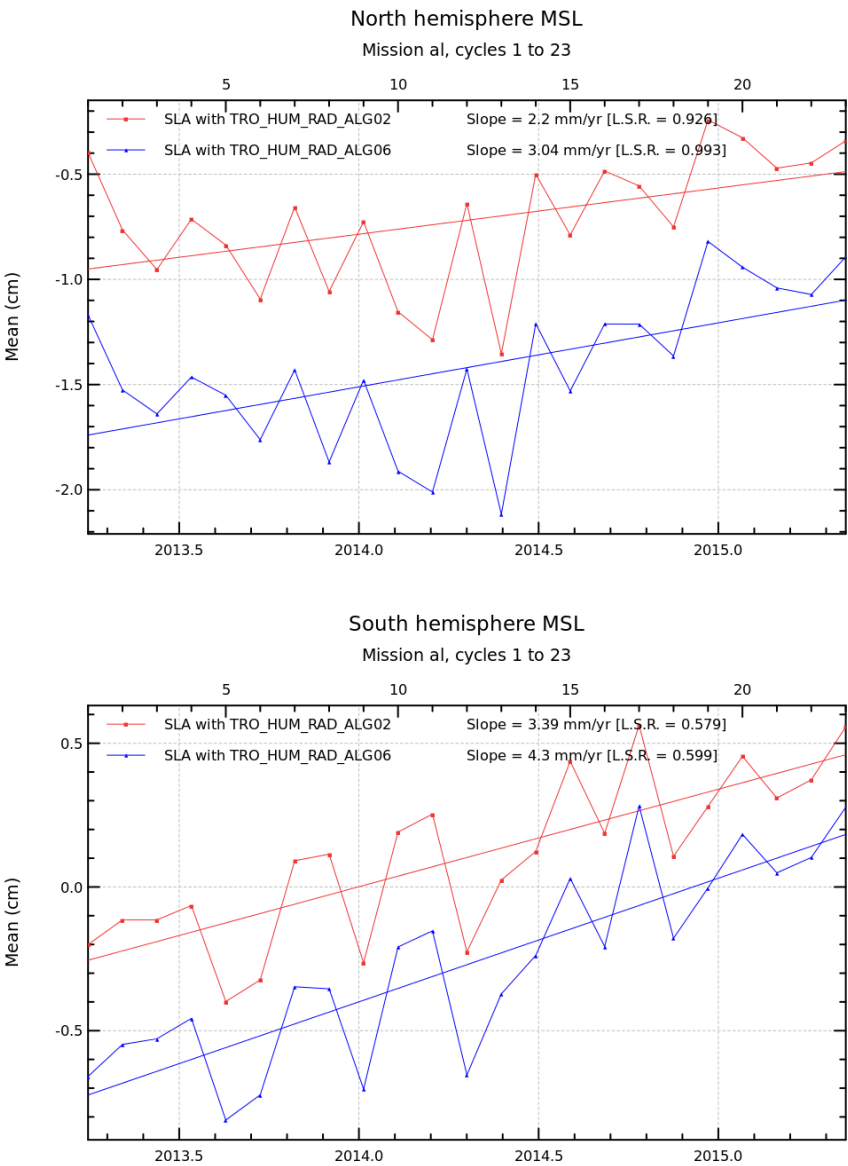
## Diagnostic A201\_c (mission al)

**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, or separating North and South hemispheres.

Diagnostic type : Mono-mission analyses



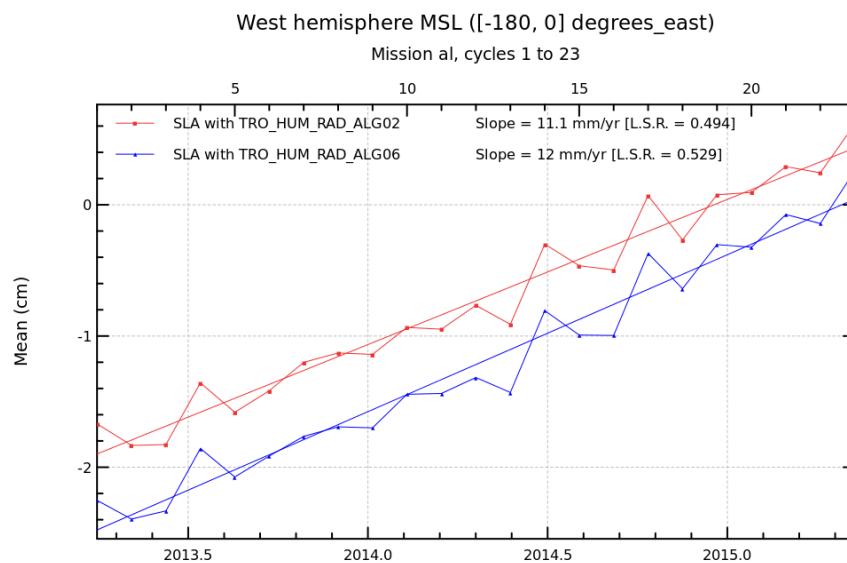
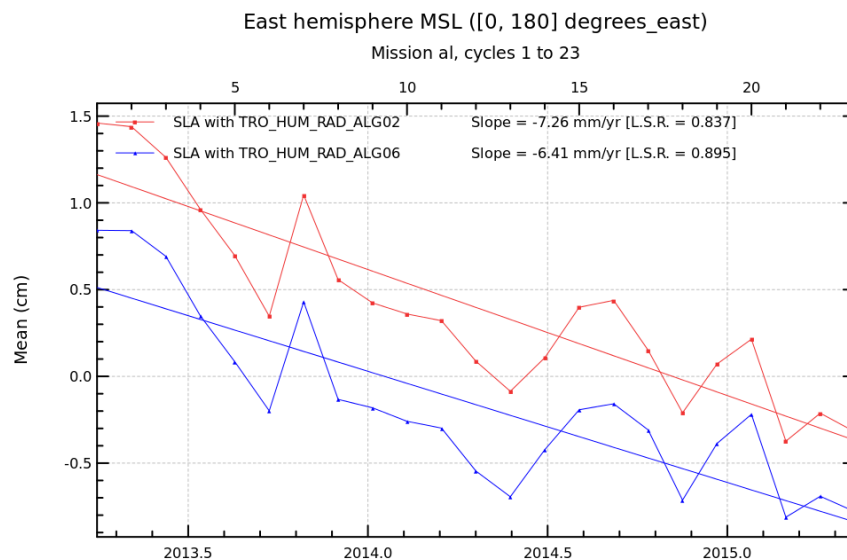
## Diagnostic A201\_d (mission al)

**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, or separating North and South hemispheres.

Diagnostic type : Mono-mission analyses



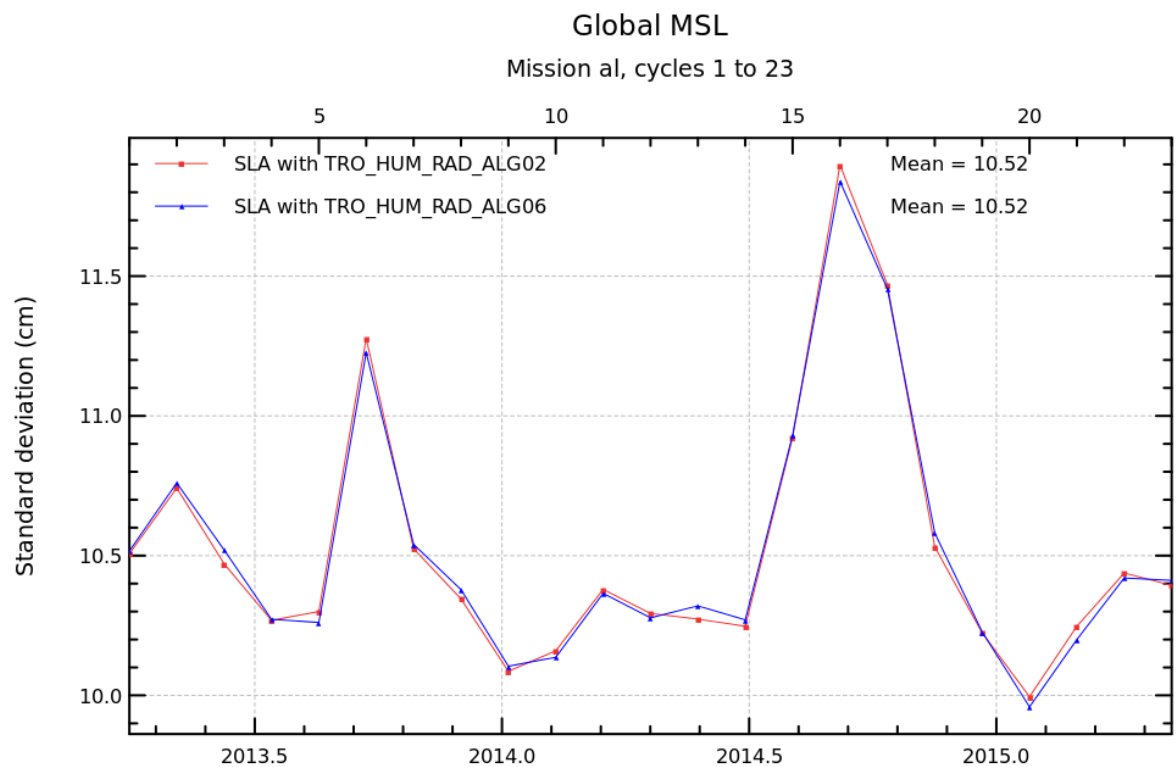
## Diagnostic A201\_e (mission al)

**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, or separating North and South hemispheres.

Diagnostic type : Mono-mission analyses



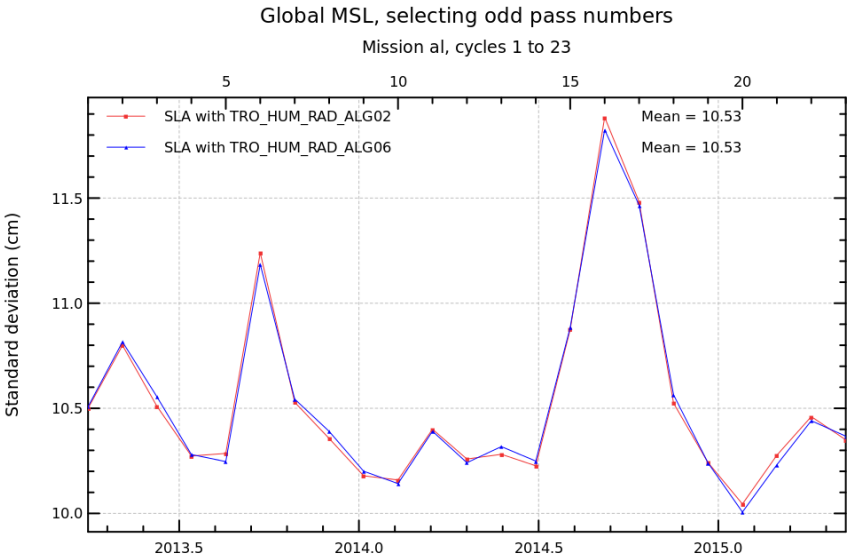
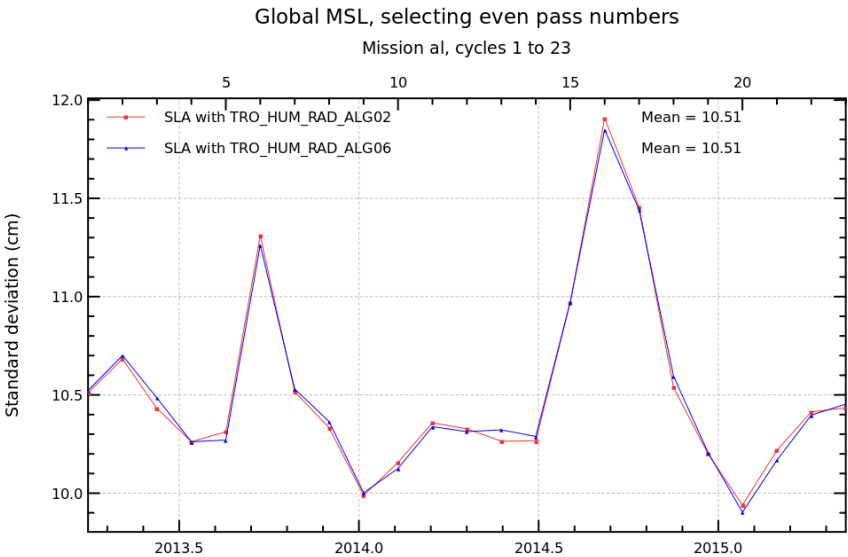
## Diagnostic A201\_f (mission al)

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

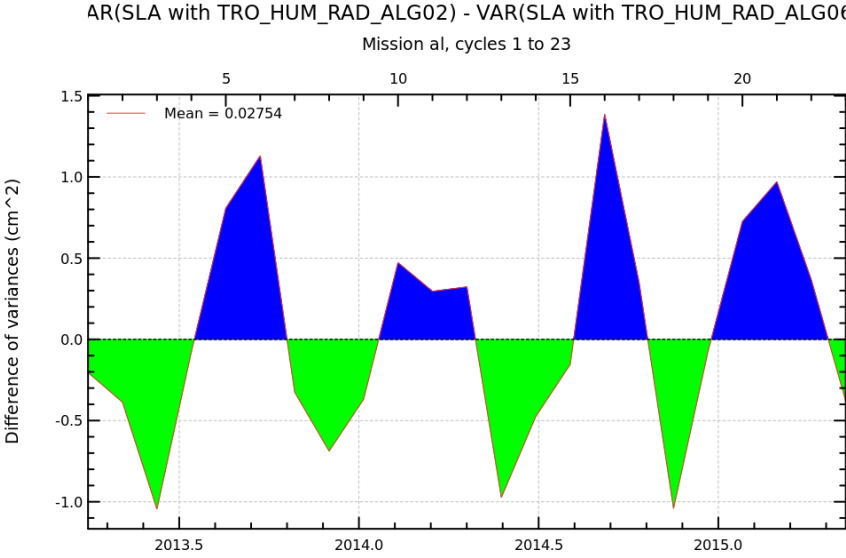
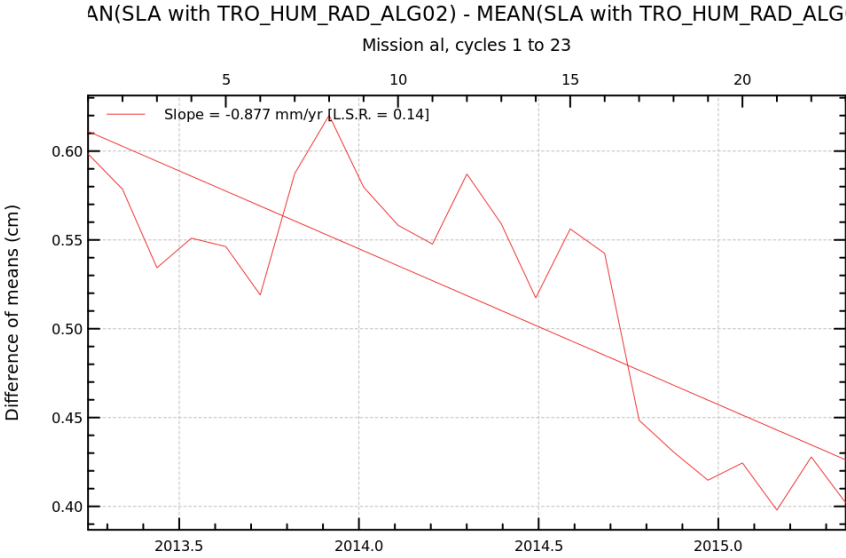
**Input data :** Along track SLA

**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, or separating North and South hemispheres.

Diagnostic type : Mono-mission analyses



Diagnostic A202_a (mission al)	
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 or separating North and South hemispheres.	



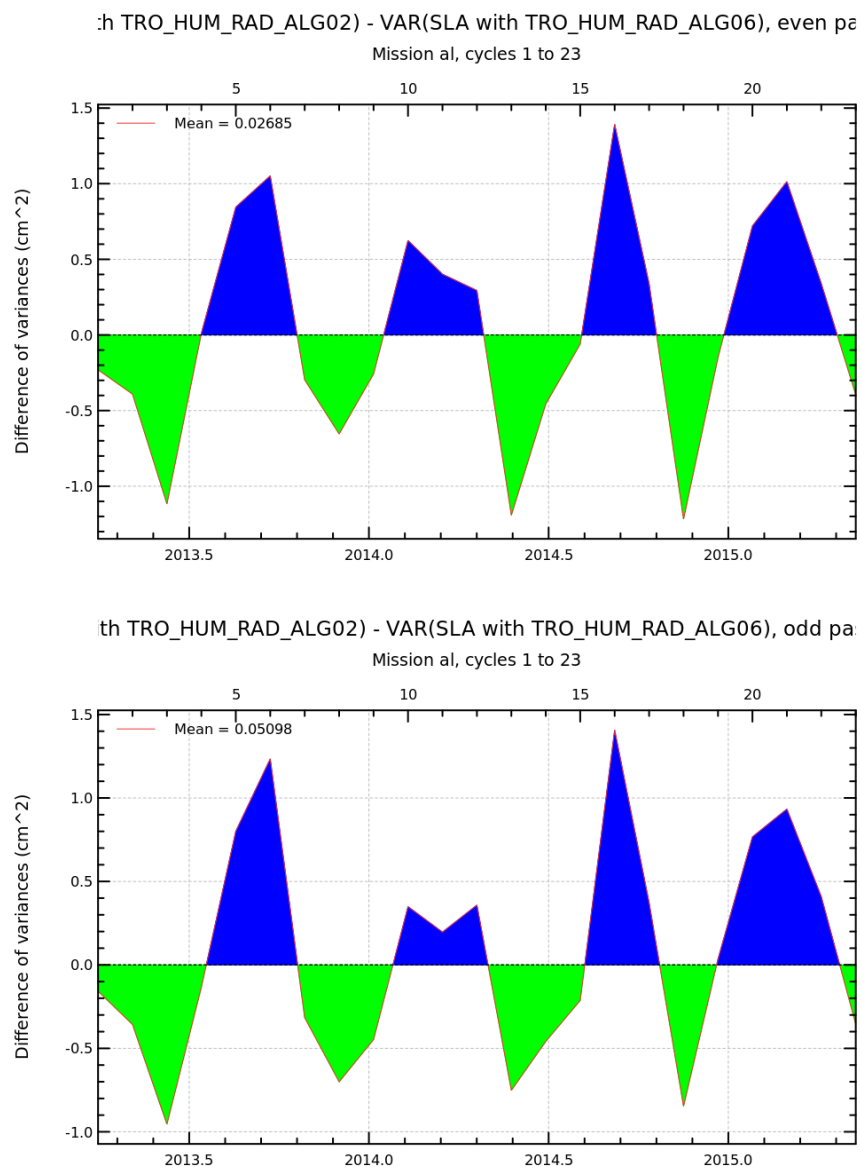
## Diagnostic A202\_b (mission al)

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

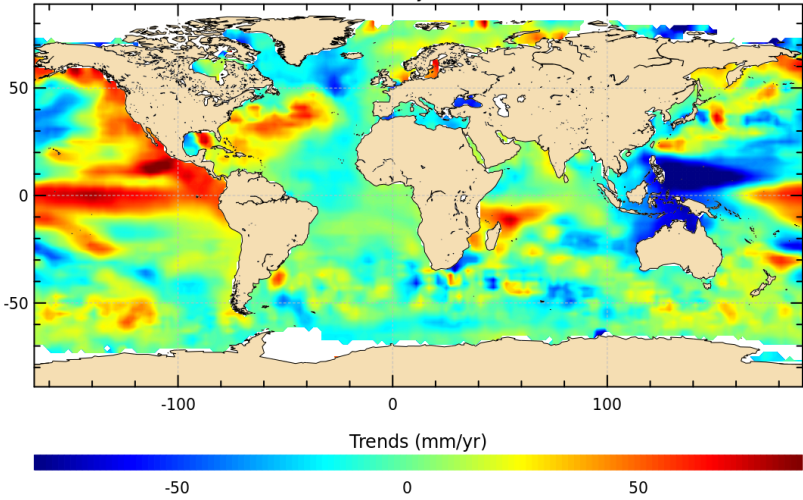
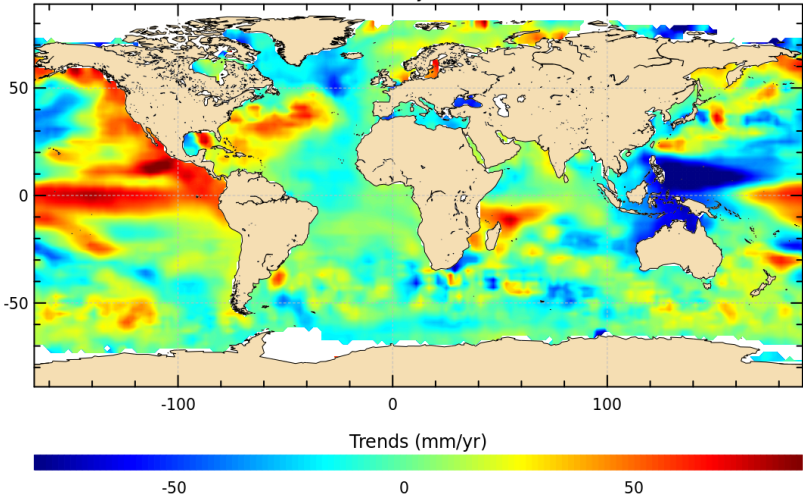
**Input data :** Along track SLA

**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 or separating North and South hemispheres.

Diagnostic type : Mono-mission analyses





Diagnostic type : Mono-mission analyses	Diagnostic A203_a (mission al)	
	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.	
	<div>SLA with TRO_HUM_RAD_ALG02 trends Mission al, cycles 1 to 23</div>  <div>SLA with TRO_HUM_RAD_ALG06 trends Mission al, cycles 1 to 23</div> 	

## Diagnostic A203\_b (mission al)

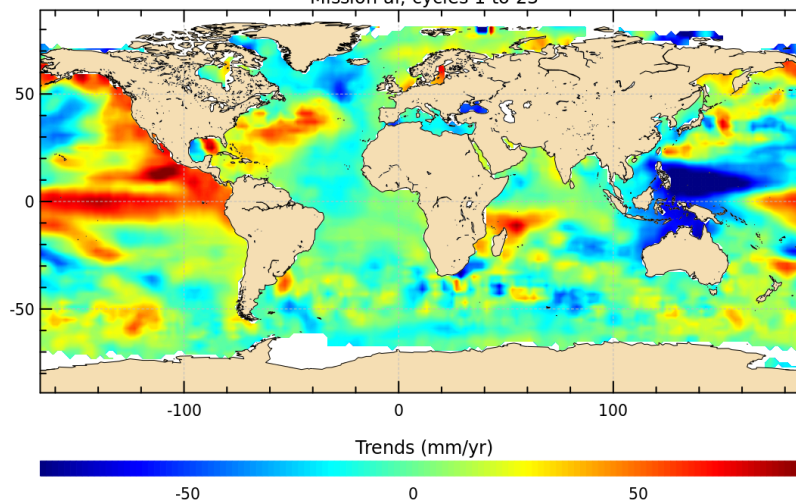
**Name :** Map of Sea Level Anomaly (SLA) over all the period

**Input data :** Along track SLA

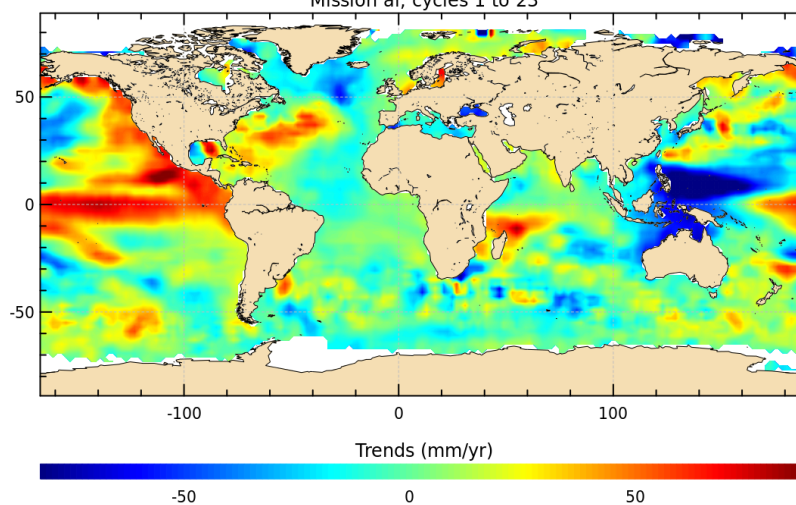
**Description :** The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

Diagnostic type : Mono-mission analyses

SLA with TRO\_HUM\_RAD\_ALG02 trends : even pass numbers  
Mission al, cycles 1 to 23



SLA with TRO\_HUM\_RAD\_ALG06 trends : even pass numbers  
Mission al, cycles 1 to 23



## Diagnostic A203\_c (mission al)

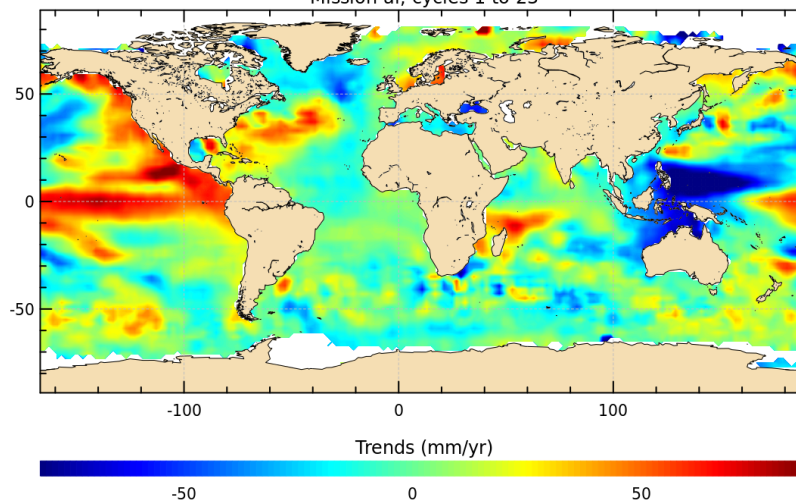
**Name :** Map of Sea Level Anomaly (SLA) over all the period

**Input data :** Along track SLA

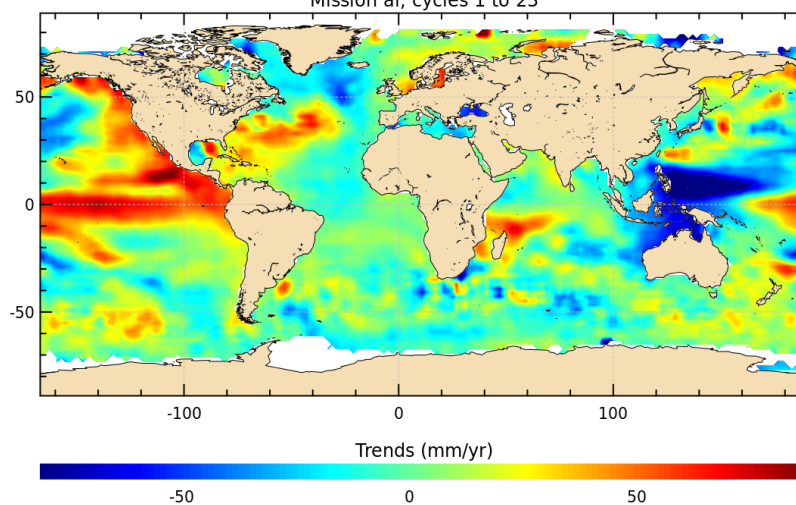
**Description :** The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

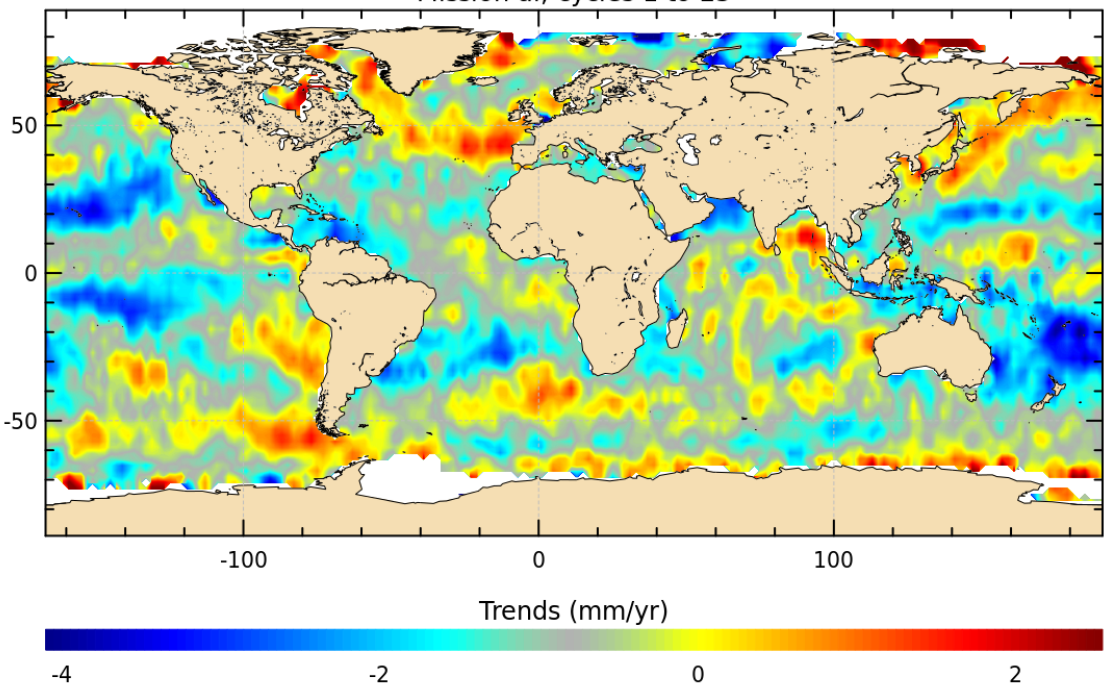
Diagnostic type : Mono-mission analyses

SLA with TRO\_HUM\_RAD\_ALG02 trends : odd pass numbers  
Mission al, cycles 1 to 23



SLA with TRO\_HUM\_RAD\_ALG06 trends : odd pass numbers  
Mission al, cycles 1 to 23



Diagnostic type : Mono-mission analyses	Diagnostic A204_a (mission al)	
	Name : Differences between maps of SLA trends	
	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).	
	<p>with TRO_HUM_RAD_ALG02 trends - SLA with TRO_HUM_RAD_ALG06 tr</p> <p>Mission al, cycles 1 to 23</p> 	



## Diagnostic A204\_b (mission al)

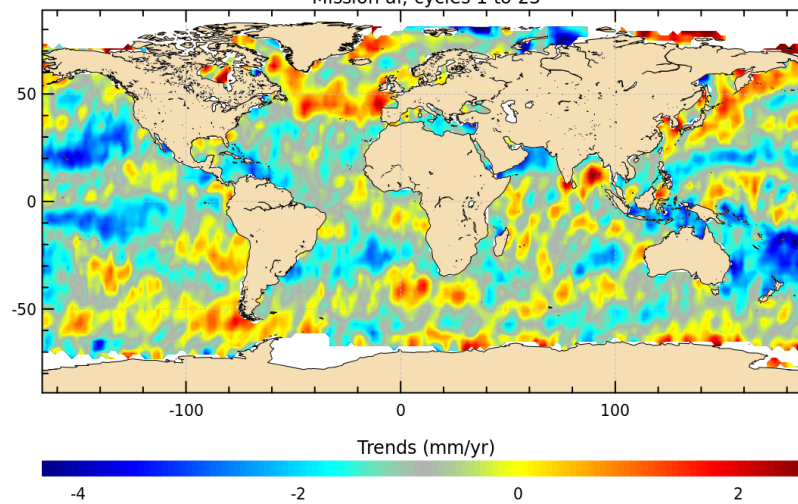
**Name :** Differences between maps of SLA trends

**Input data :** Along track SLA

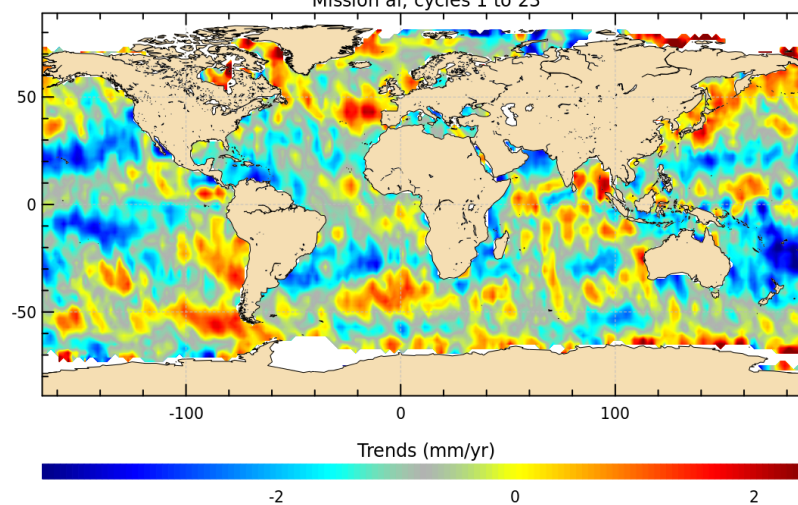
**Description :** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

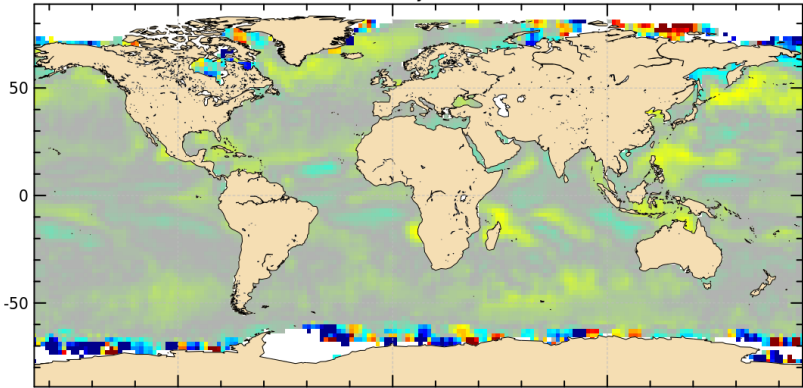
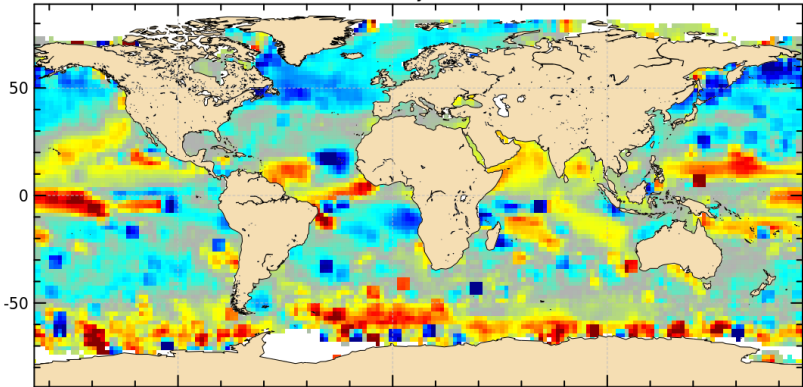
Diagnostic type : Mono-mission analyses

HUM\_RAD\_ALG02 trends - SLA with TRO\_HUM\_RAD\_ALG06 trends : even  
Mission al, cycles 1 to 23



HUM\_RAD\_ALG02 trends - SLA with TRO\_HUM\_RAD\_ALG06 trends : odd  
Mission al, cycles 1 to 23



Diagnostic type : Mono-mission analyses	Diagnostic A205_a (mission al)	
	Name : Differences between maps of SLA amplitude and phase	
	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).	
	<div>UM_RAD_ALG02 amplitude - SLA with TRO_HUM_RAD_ALG06 amplitude</div> <div>Mission al, cycles 1 to 23</div>  <div>Amplitude (cm)</div> <div>-202</div> <div>O_HUM_RAD_ALG02 phase - SLA with TRO_HUM_RAD_ALG06 phase : a</div> <div>Mission al, cycles 1 to 23</div>  <div>Phase (degree)</div> <div>-10010</div>	

## Diagnostic A205\_b (mission al)

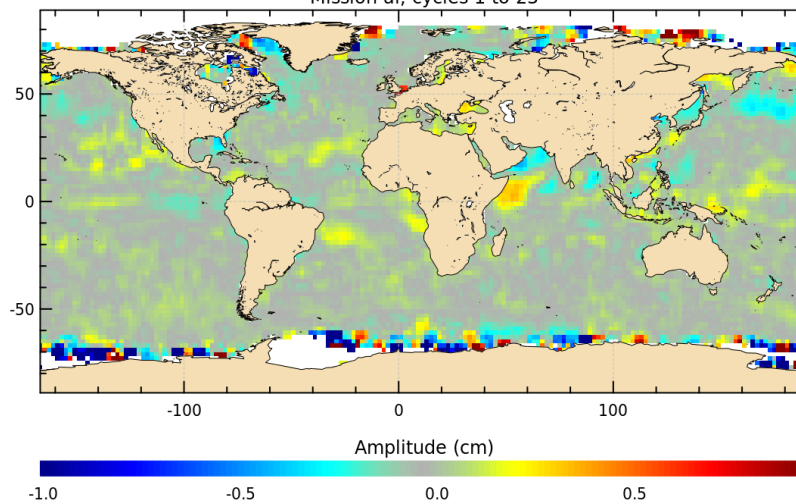
**Name :** Differences between maps of SLA amplitude and phase

**Input data :** Along track SLA

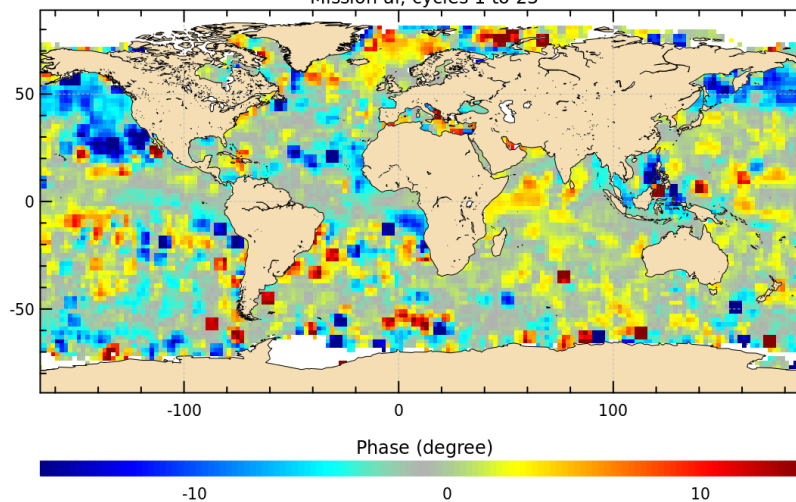
**Description :** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Mono-mission analyses

\_RAD\_ALG02 amplitude - SLA with TRO\_HUM\_RAD\_ALG06 amplitude : s  
Mission al, cycles 1 to 23



HUM\_RAD\_ALG02 phase - SLA with TRO\_HUM\_RAD\_ALG06 phase : sem  
Mission al, cycles 1 to 23



Diagnostic A206_a (mission al)	
Name : Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)	
Input data : Along track SLA	
<p><b>Description :</b> 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.</p>	
<div><div>Periodogram of SLA (reference period = 1 year)</div><div>Mission al, cycles 1 to 23</div><p>This plot shows the amplitude of SLA in centimeters versus the period in days for mission cycles 1 to 23. The y-axis ranges from 0 to 6 cm, and the x-axis ranges from 0 to 1000 days. Two data series are shown: SLA with TRO_HUM_RAD_ALG02 (red line with square markers) and SLA with TRO_HUM_RAD_ALG06 (blue line with triangle markers). Both series show a prominent peak at approximately 1000 days, reaching an amplitude of about 5.5 cm. A vertical green line at 365 days is labeled '1 year'. Other smaller peaks are visible at approximately 400, 550, 700, and 850 days.</p></div> <div><div>Periodogram of SLA (period = [0, 1 year])</div><div>Mission al, cycles 1 to 23</div><p>This plot shows the amplitude of SLA in centimeters versus the period in days for mission cycles 1 to 23, focusing on the period from 0 to 1 year. The y-axis ranges from 0.0 to 0.8 cm, and the x-axis ranges from 0 to 350 days. Two data series are shown: SLA with TRO_HUM_RAD_ALG02 (red line with square markers) and SLA with TRO_HUM_RAD_ALG06 (blue line with triangle markers). Both series show a sharp peak at approximately 25 days, reaching an amplitude of about 0.65 cm. Another significant peak occurs at approximately 270 days, reaching an amplitude of about 0.8 cm. The amplitude generally increases as the period approaches 350 days.</p></div>	



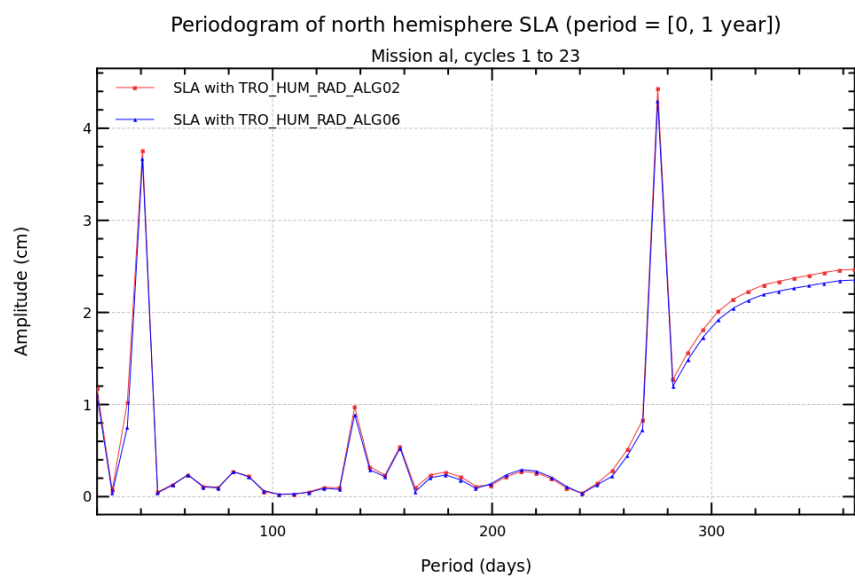
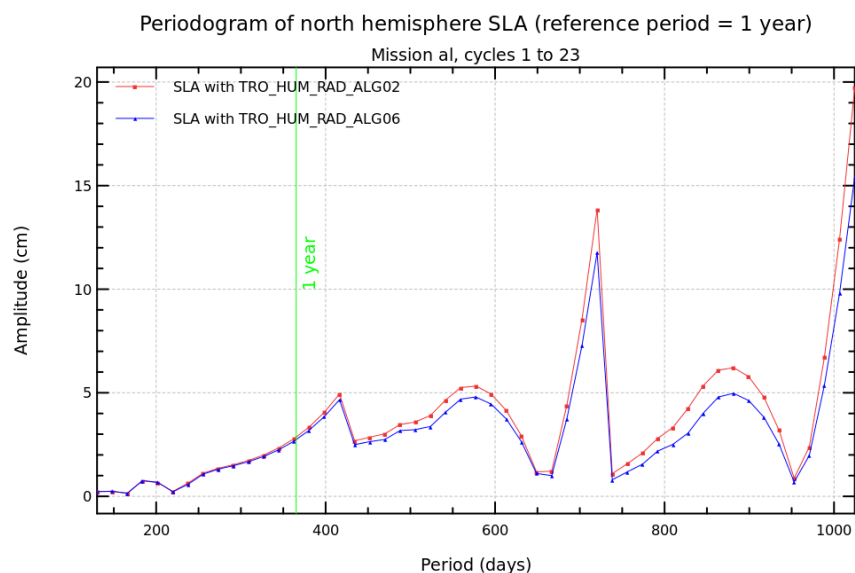
## Diagnostic A206\_b (mission al)

**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 type : Mono-mission analyses



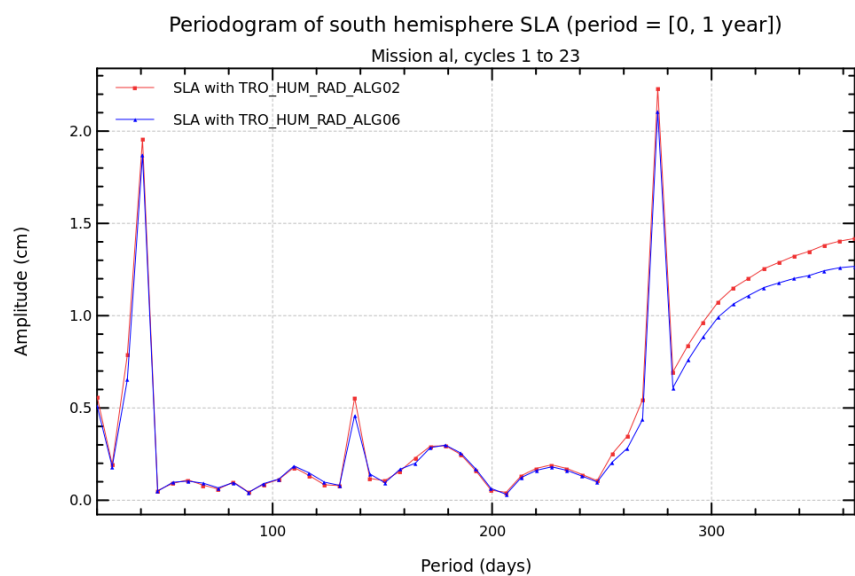
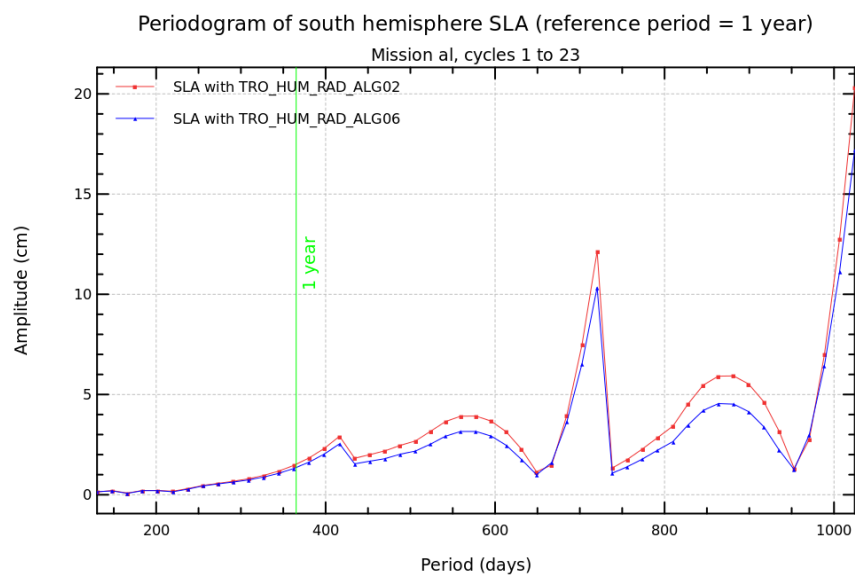
## Diagnostic A206\_c (mission al)

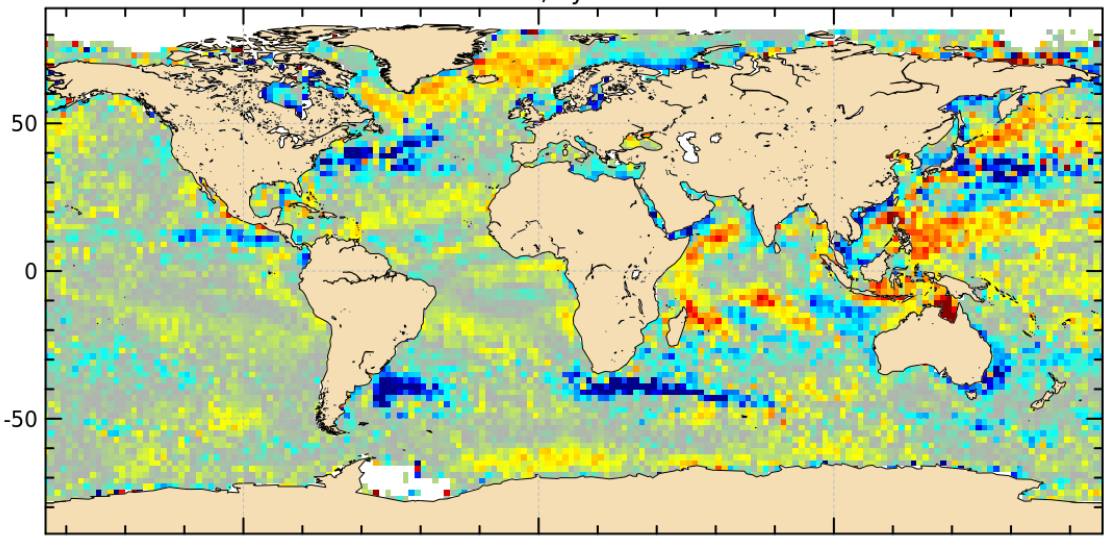
**Name :** Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

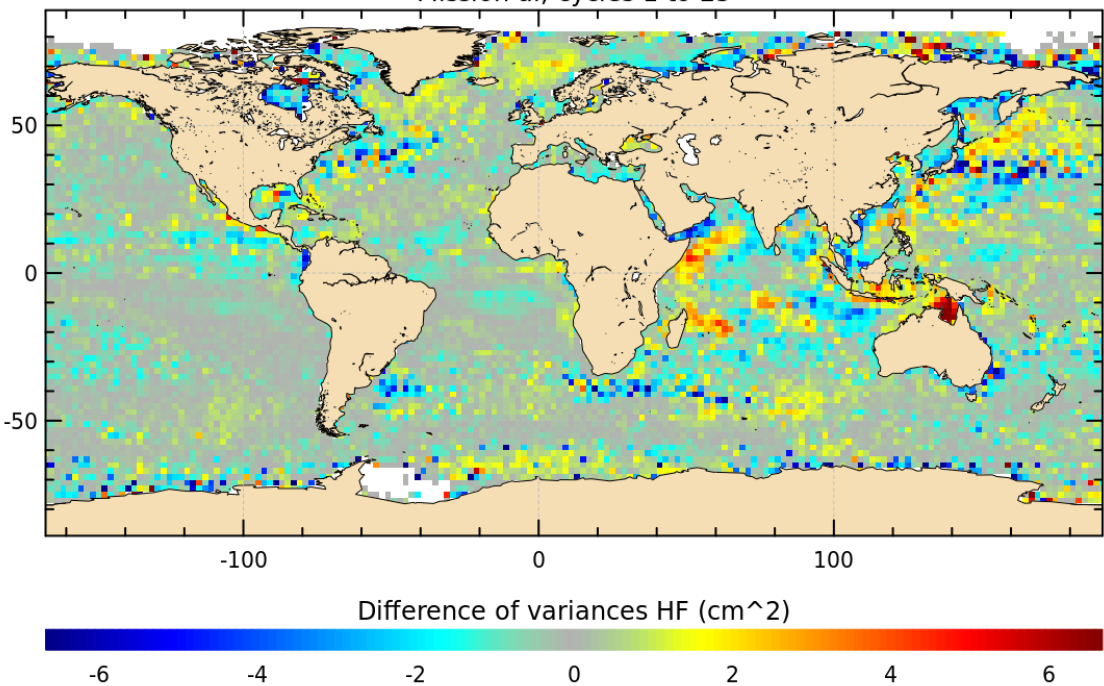
**Input data :** Along track SLA

**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 type : Mono-mission analyses



Diagnostic type : Mono-mission analyses	Diagnostic A209 (mission al)	
	Name : Differences between maps of SLA variance	
	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.	
	<div><div><math>\sigma(\text{SLA with TRO\_HUM\_RAD\_ALG02}) - \text{VAR}(\text{SLA with TRO\_HUM\_RAD\_ALG02})</math></div><div>Mission al, cycles 1 to 23</div><div>Difference of variances (cm^2)</div><div><div></div><div>-5</div><div>0</div><div>5</div></div></div>	

Diagnostic type : Mono-mission analyses	Diagnostic A210_a (mission al)	
	Name : Differences between maps of SLA variance for different frequency bands	
	Input data : Along track SLA	
	Description : The differences between maps of SLA (variance) are calculated from the mean SLA maps using successively both altimetric components in the SLA calculation filtered to separate high-frequency ( $T < 1$ yr), mid-frequency ( $1 \text{ yr} < T < 3$ yrs) and low-frequency ( $T > 3$ yrs) signals.	
	<div>with TRO_HUM_RAD_ALG02) - VAR(SLA with TRO_HUM_RAD_ALG06) for Mission al, cycles 1 to 23</div> 	

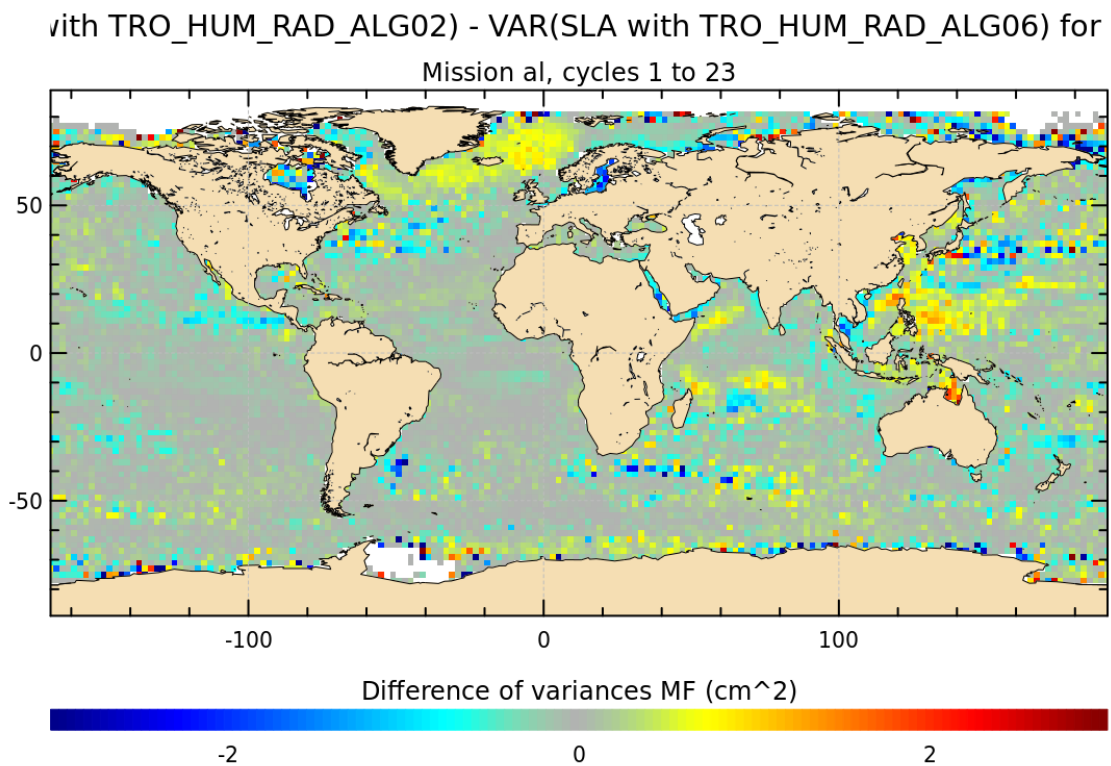
## Diagnostic A210\_b (mission al)

**Name :** Differences between maps of SLA variance for different frequency bands

**Input data :** Along track SLA

**Description :** The differences between maps of SLA (variance) are calculated from the mean SLA maps using successively both altimetric components in the SLA calculation filtered to separate high-frequency ( $T < 1$  yr), mid-frequency ( $1 \text{ yr} < T < 3$  yrs) and low-frequency ( $T > 3$  yrs) signals.

Diagnostic type : Mono-mission analyses



Diagnostic A210\_c (mission al)

Name : Differences between maps of SLA variance for different frequency bands

Input data : Along track SLA

Description : The differences between maps of SLA (variance) are calculated from the mean SLA maps using successively both altimetric components in the SLA calculation filtered to separate high-frequency ( $T < 1$  yr), mid-frequency ( $1 \text{ yr} < T < 3$  yrs) and low-frequency ( $T > 3$  yrs) signals.

Diagnostic type : Mono-mission analyses

with TRO\_HUM\_RAD\_ALG02) - VAR(SLA with TRO\_HUM\_RAD\_ALG06) for  
Mission al, cycles 1 to 23

