

# Tide models comparison : GOT4V8 versus GOT4V10

Study variable	<b>GOT4V10</b>
Reference variable	<b>GOT4V8</b>
Missions	Envisat ( <i>en</i> ), Jason-1 ( <i>j1</i> )
Period	[19007, 23183]

Creation date : 2014/04/07

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## Study overview

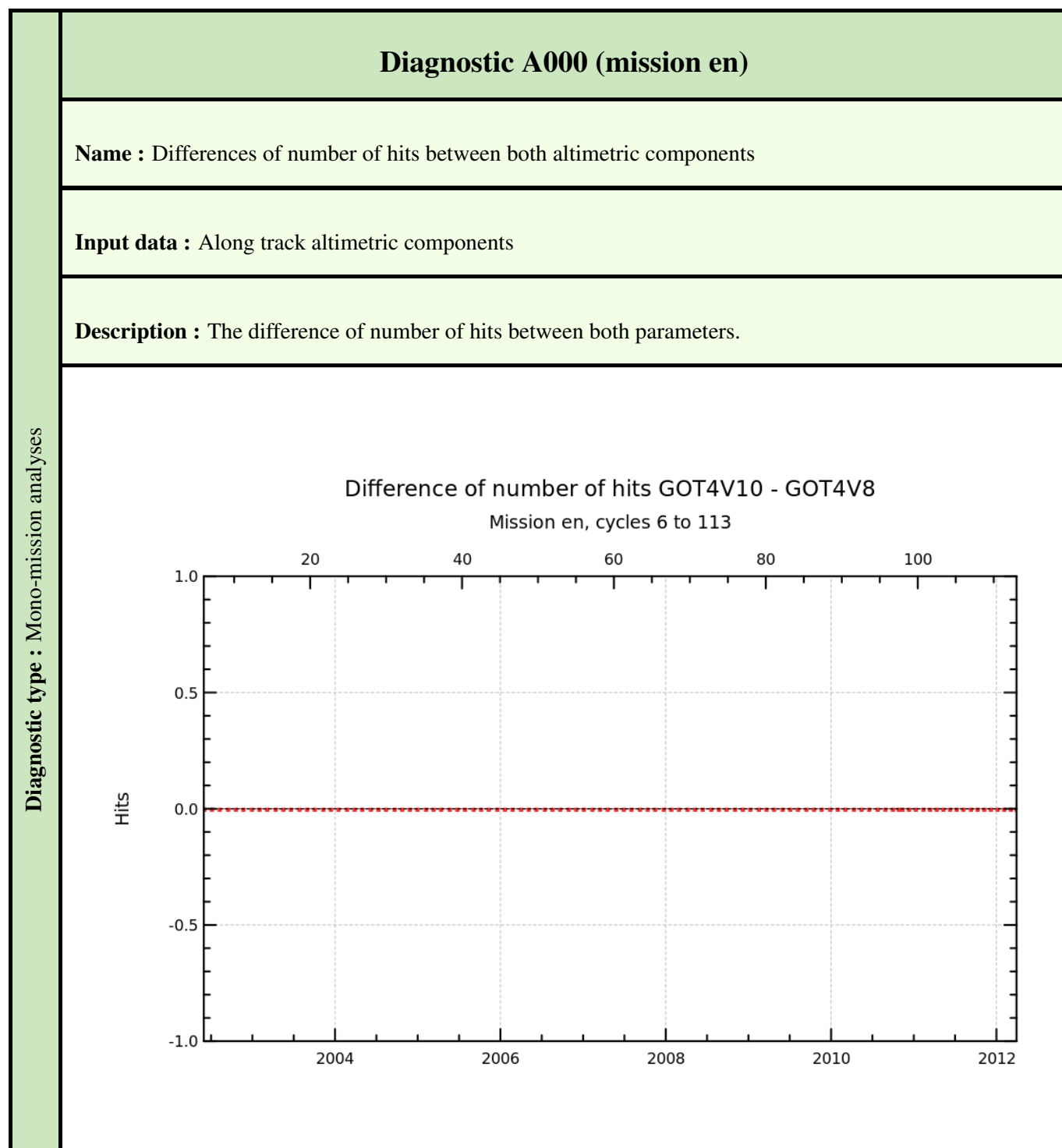
In this study, the tide model GOT 4.10 has been compared to the previous version of the model, GOT 4.8 .

The impact of using these both GOT models on the SSH calculation has been analyzed for Envisat and Jason-1 missions.

- for Jason-1 : from January 2002 (cycle 1) to June 2013 (Cycle 537)
- for Envisat : from May 2002 (cycle 6) to April 2012 (Cycle 113)

The tide model GOT 4.10 corresponds to the last version of the GOT model produced by R. Ray (2011). The difference with GOT4.8 is due to the use of Jason-1 and Jason-2 altimeter instead of TOPEX/Poseidon in the computation of the S2 semi-diurnal wave. The model GOT is described in Ray, R. (1999). "A global ocean tide model from Topex/Poseidon altimetry: GOT 99.2." NASA Tech Memo 209478: 58 pages.

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



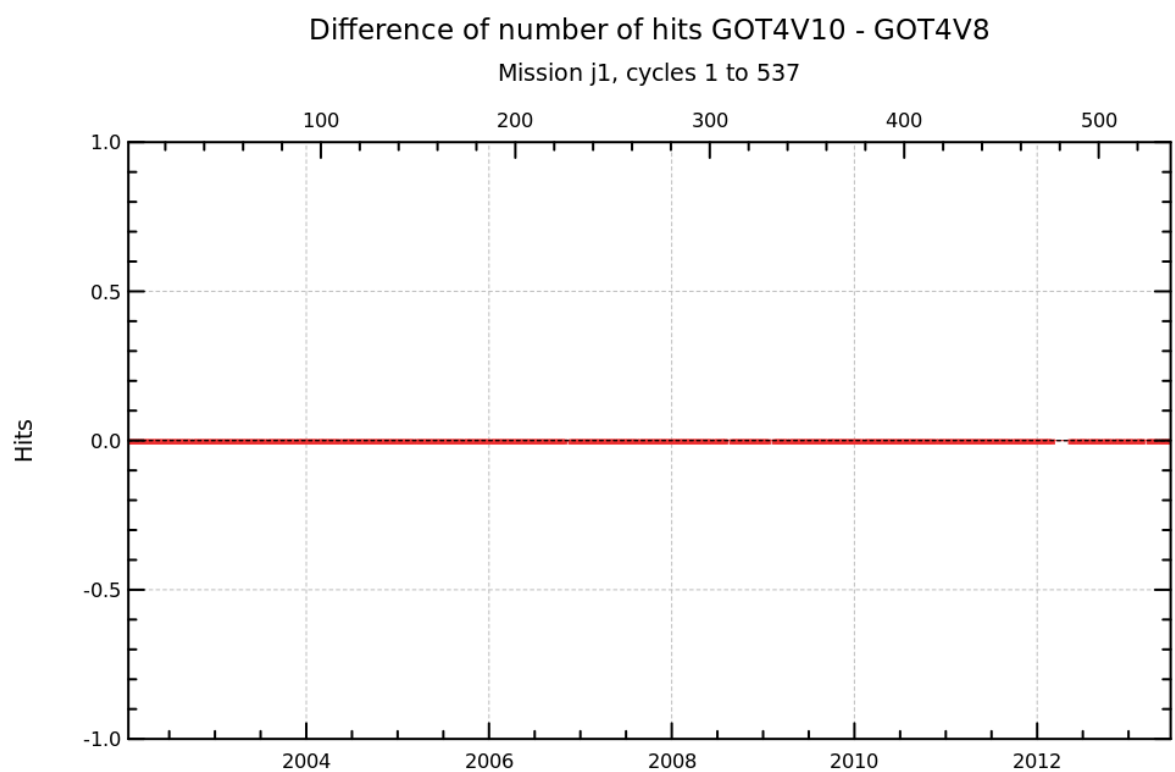
## Diagnostic A000 (mission j1)

**Name :** Differences of number of hits between both altimetric components

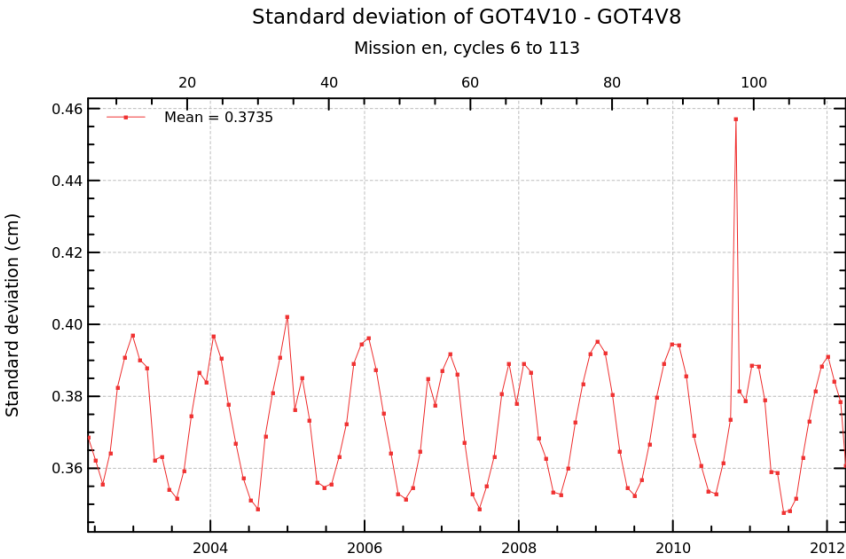
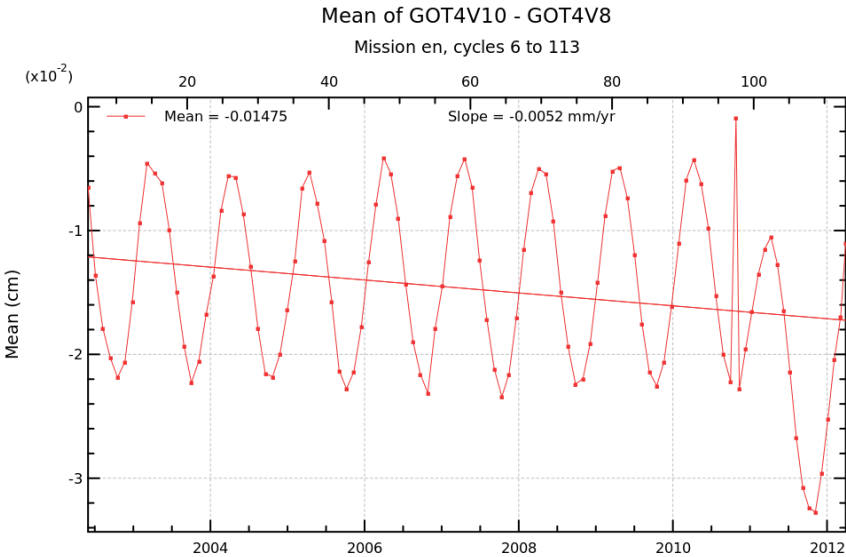
**Input data :** Along track altimetric components

**Description :** The difference of number of hits between both parameters.

Diagnostic type : Mono-mission analyses



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.	



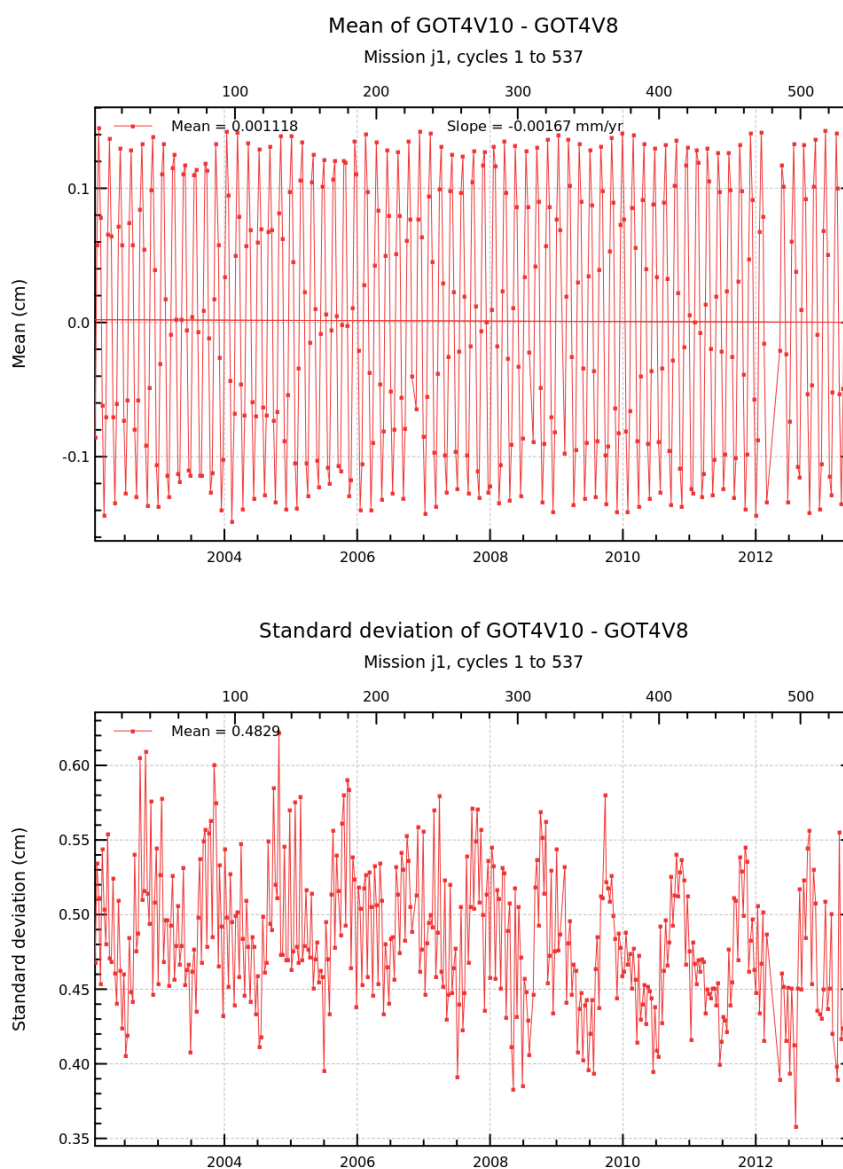
## Diagnostic A001 (mission j1)

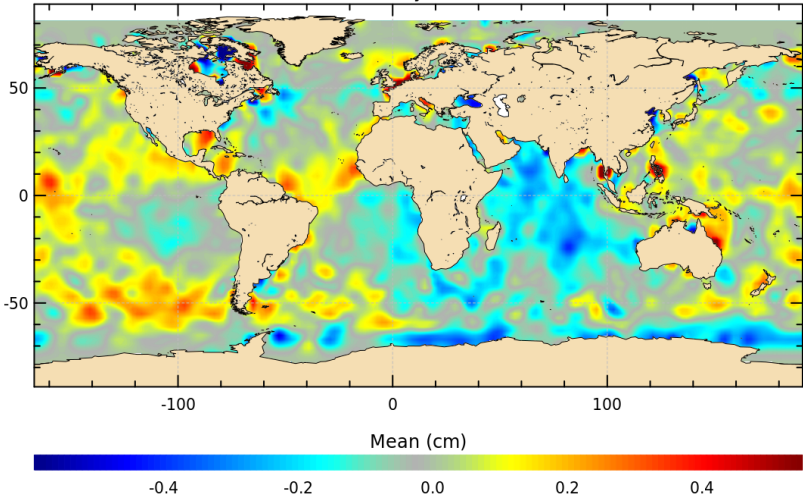
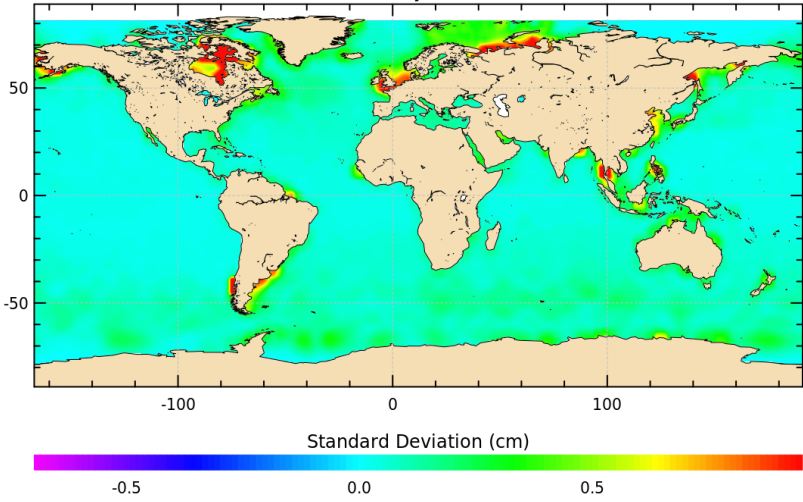
**Name :** Temporal evolution of differences between both altimetric components

**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 type : Mono-mission analyses



Diagnostic type : Mono-mission analyses	Diagnostic A002 (mission en)	
	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><div>Mean of GOT4V10 - GOT4V8</div><div>Mission en, cycles 6 to 113</div><div>Mean (cm)</div><div>-0.4 -0.2 0.0 0.2 0.4</div></div> <div><div>Standard deviation of GOT4V10 - GOT4V8</div><div>Mission en, cycles 6 to 113</div><div>Standard Deviation (cm)</div><div>-0.5 0.0 0.5</div></div>	

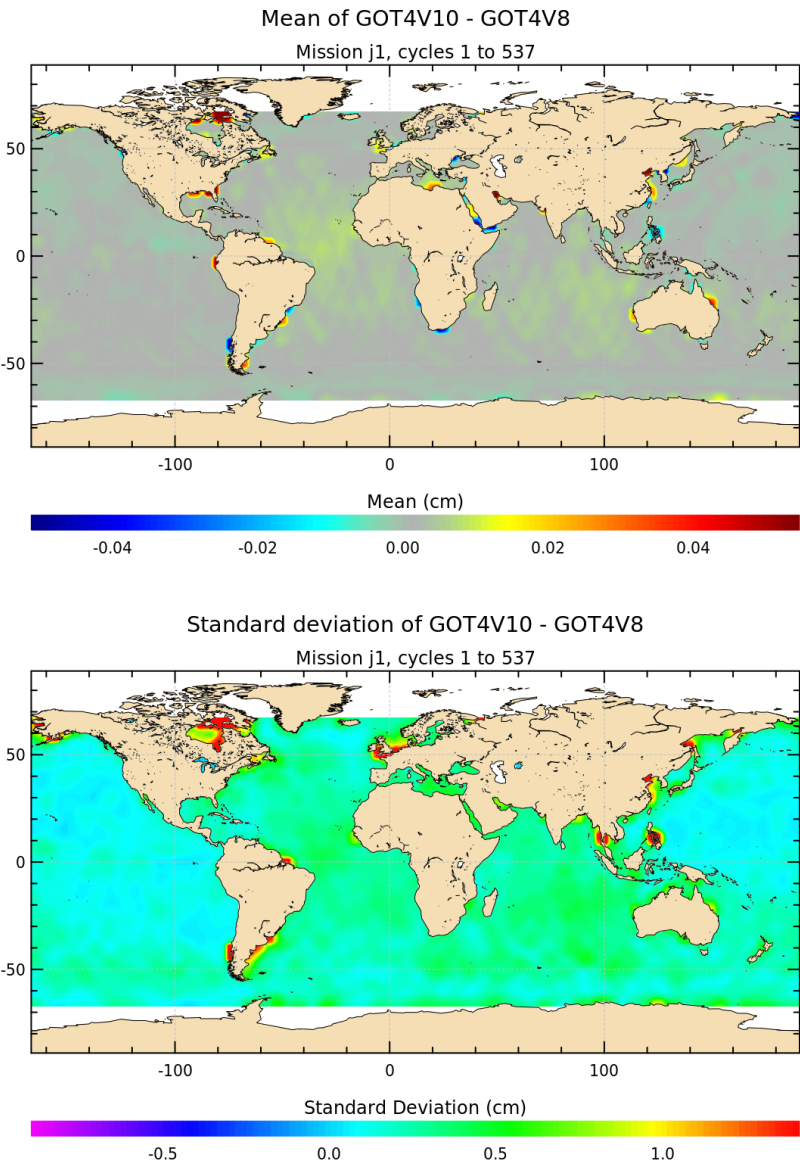
## Diagnostic A002 (mission j1)

**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.

Diagnostic type : Mono-mission analyses

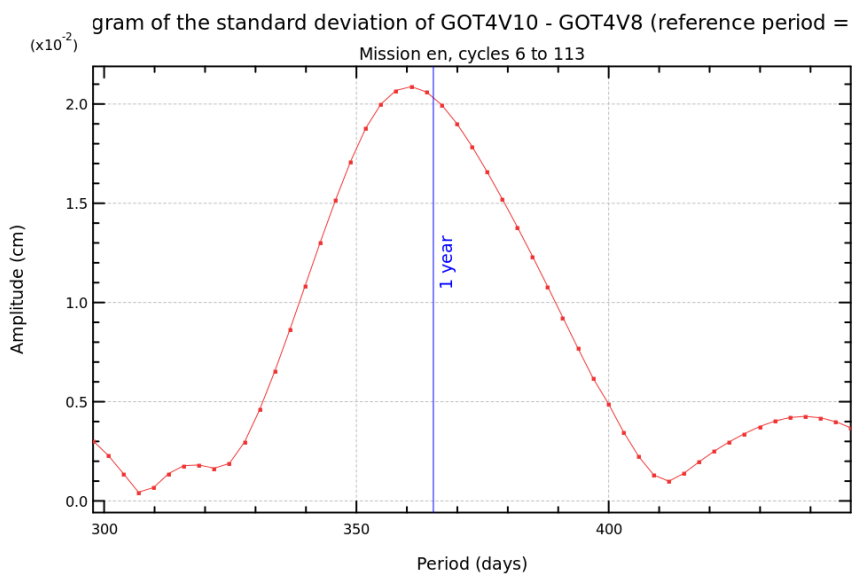
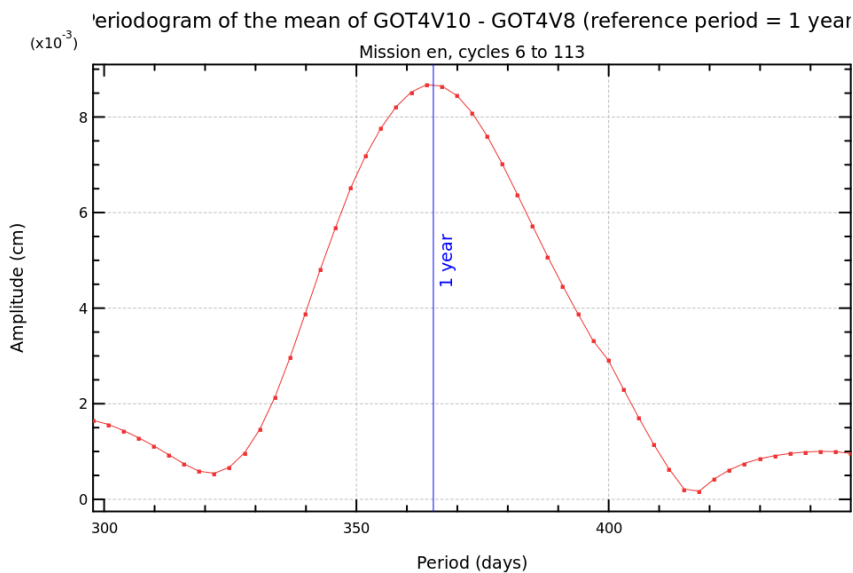


Diagnostic A003\_a (mission en)

**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.



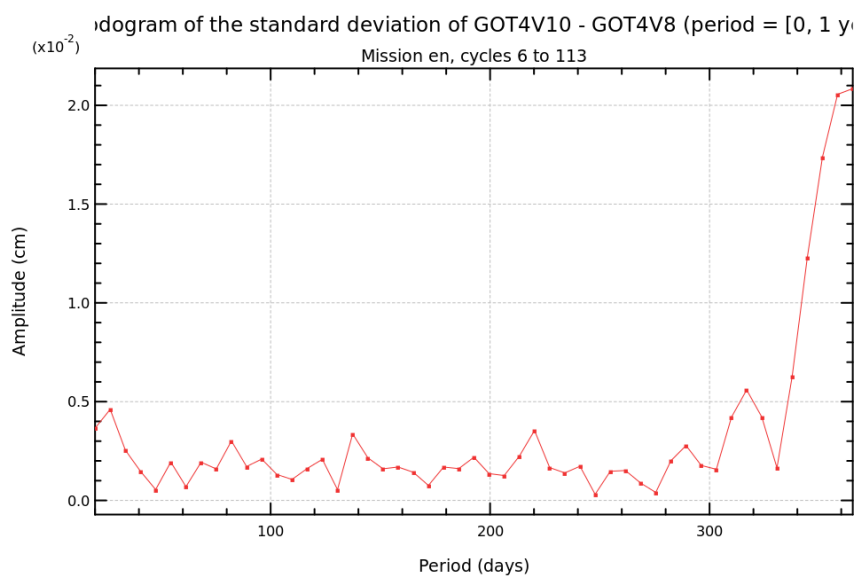
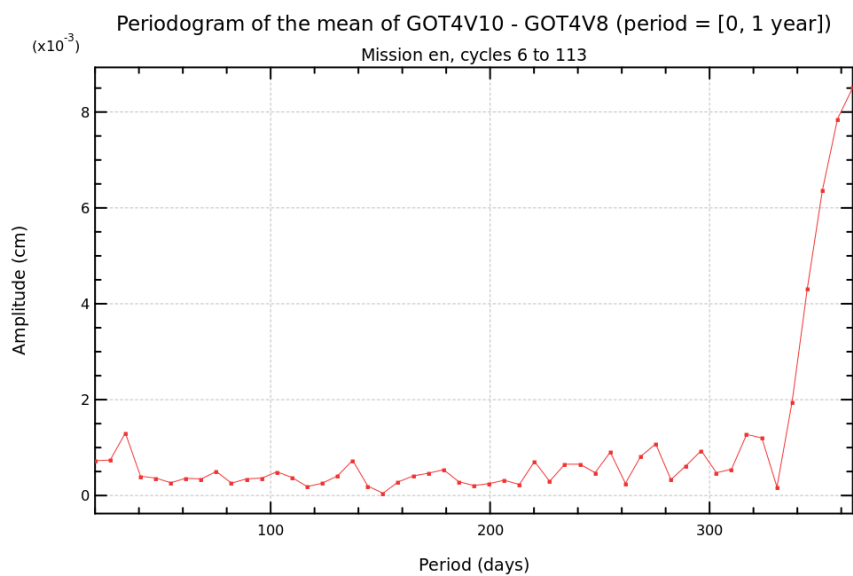
## Diagnostic A003\_b (mission en)

**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.

Diagnostic type : Mono-mission analyses



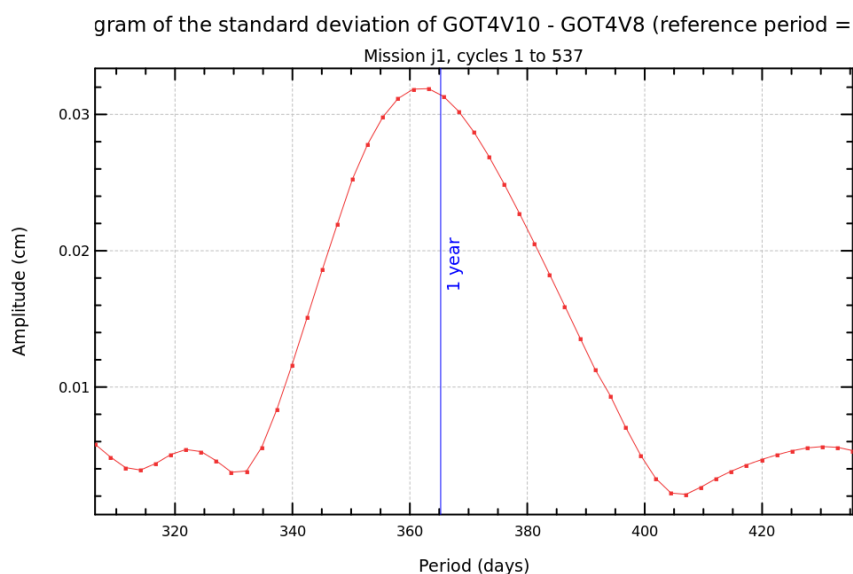
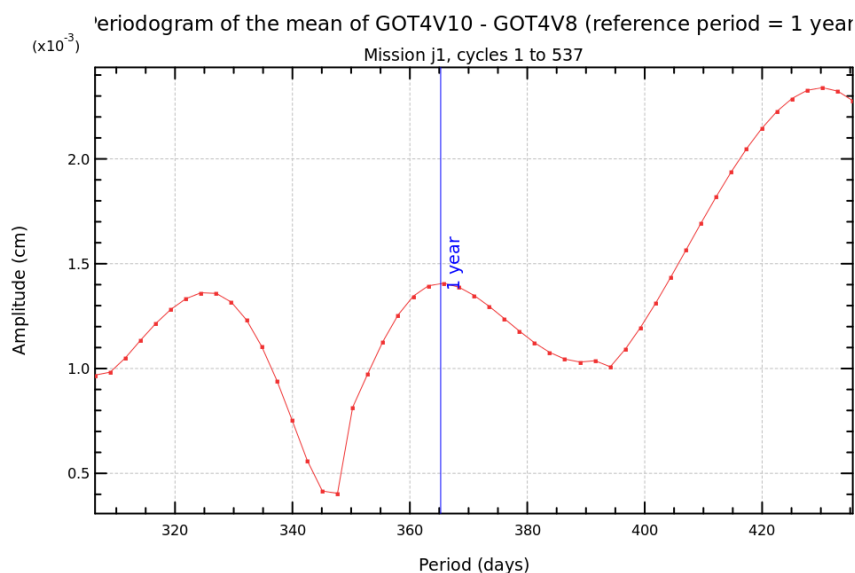
## Diagnostic A003\_a (mission j1)

**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



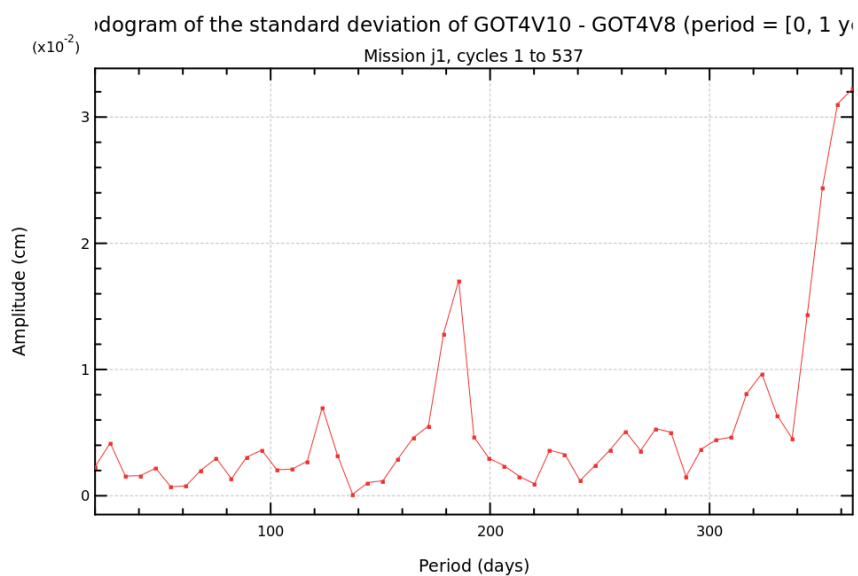
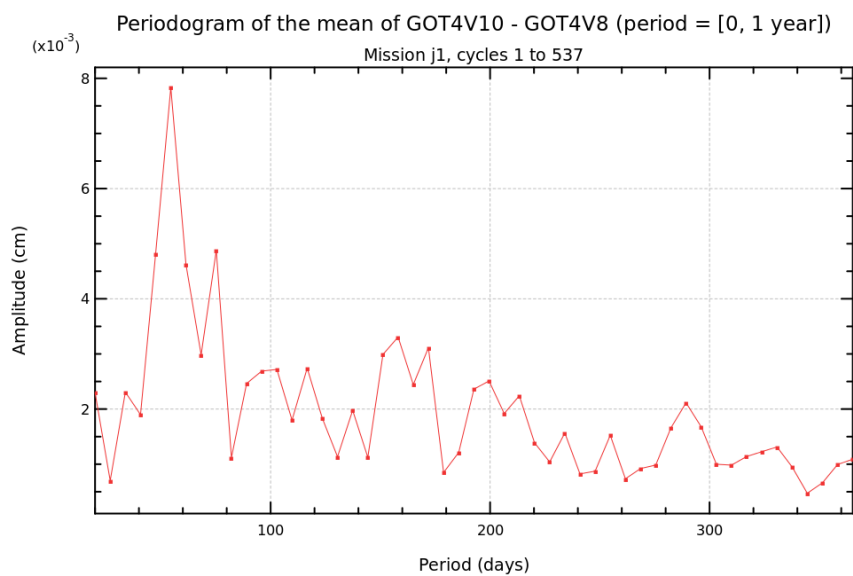
## Diagnostic A003\_b (mission j1)

**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



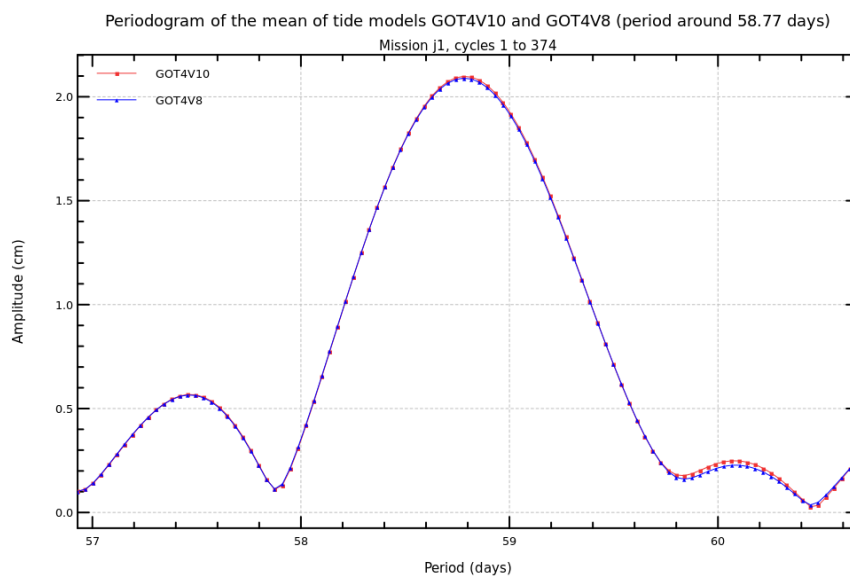
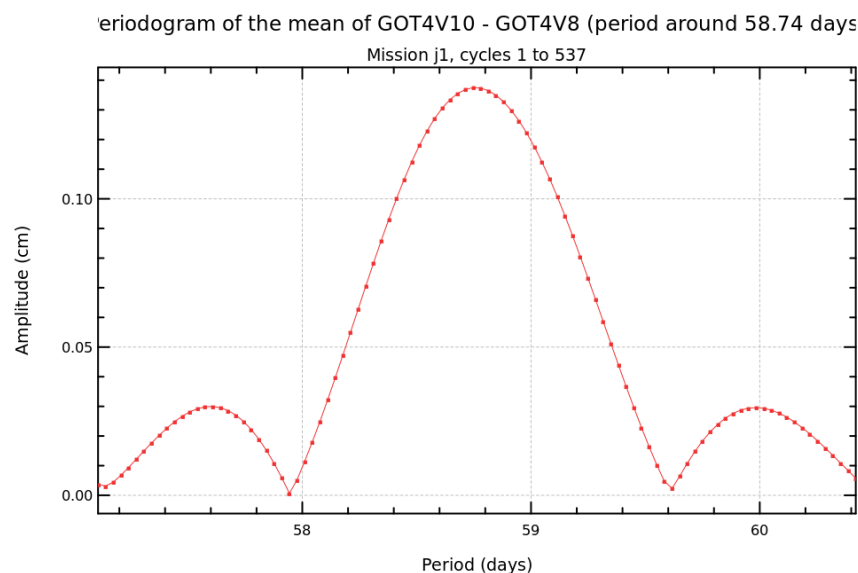
## Diagnostic A003\_c (mission j1)

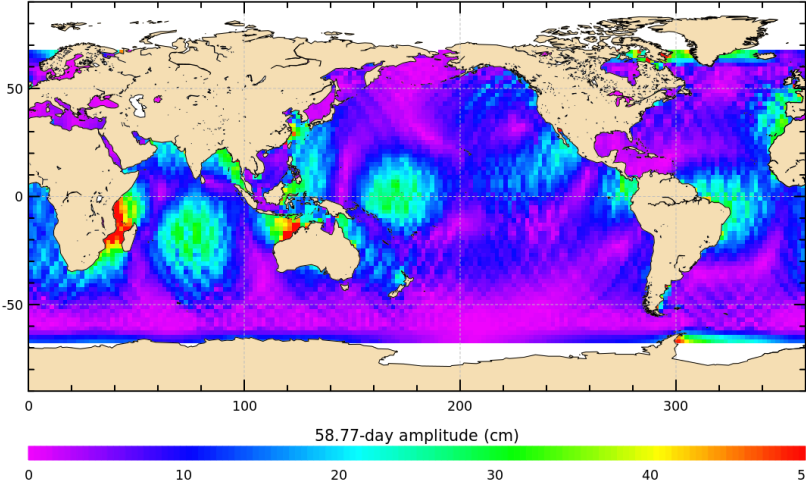
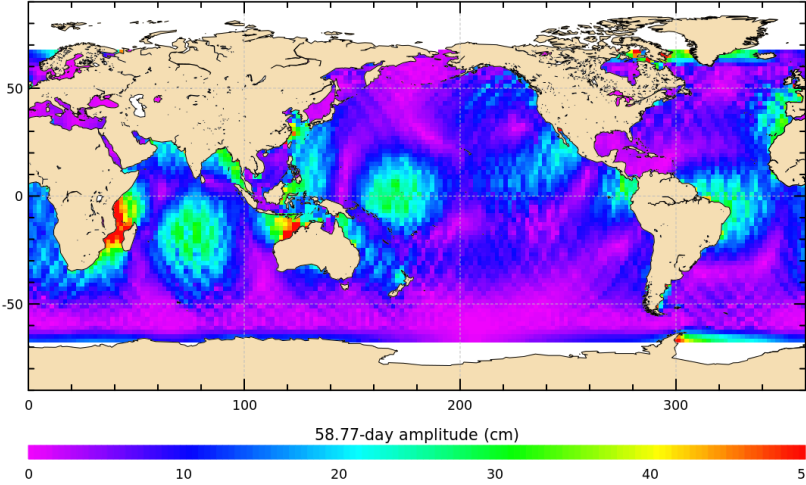
**Name :** Periodogram derived from temporal evolution of altimetric component differences

**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 type :	Diagnostics complementaires (mission j1)	
	Name : Map of residual signal (around period of 58.77 days)	
	Input data :	
	Description :	
	<div><p>   GOT4V8 J1)58.77d   </p><p>58.77-day amplitude (cm)</p><p>0 10 20 30 40 50</p></div> <div><p>   GOT4V10 J1)58.77d   </p><p>58.77-day amplitude (cm)</p><p>0 10 20 30 40 50</p></div>	

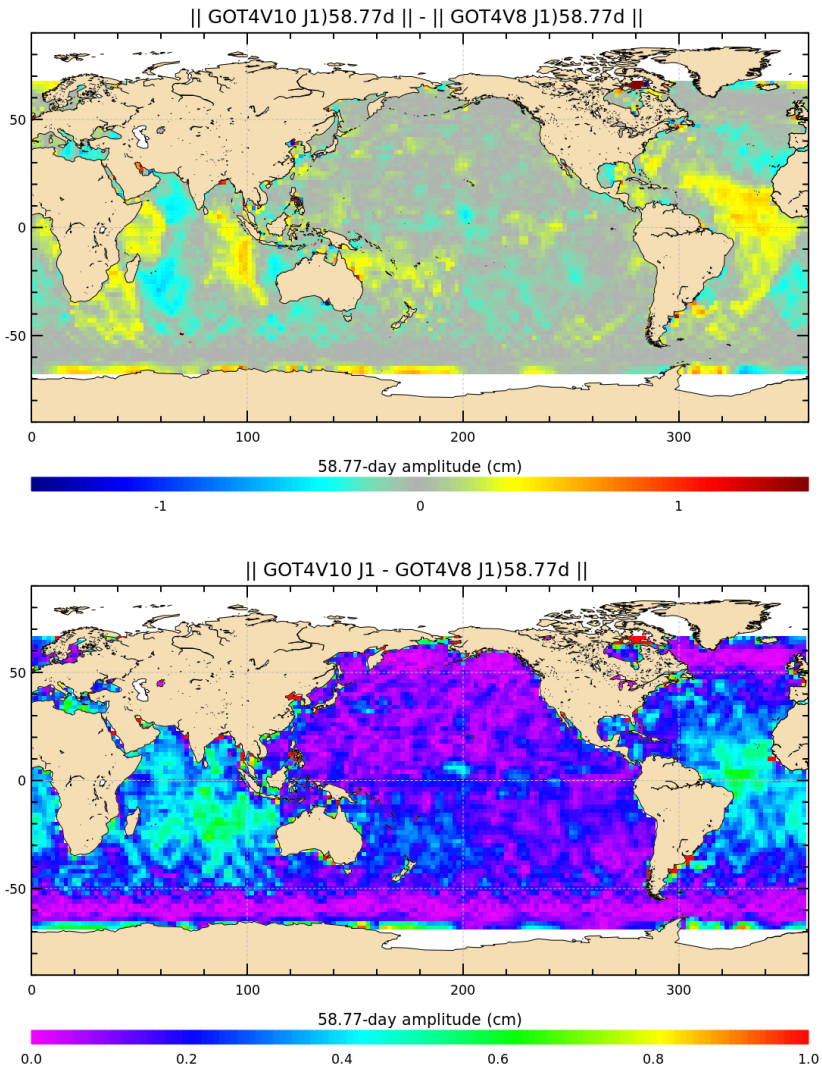
Diagnostics complementaires (mission j1)

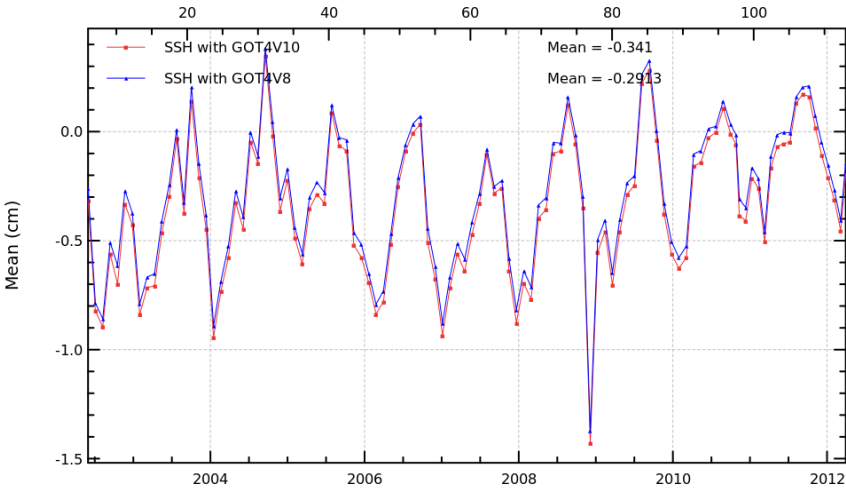
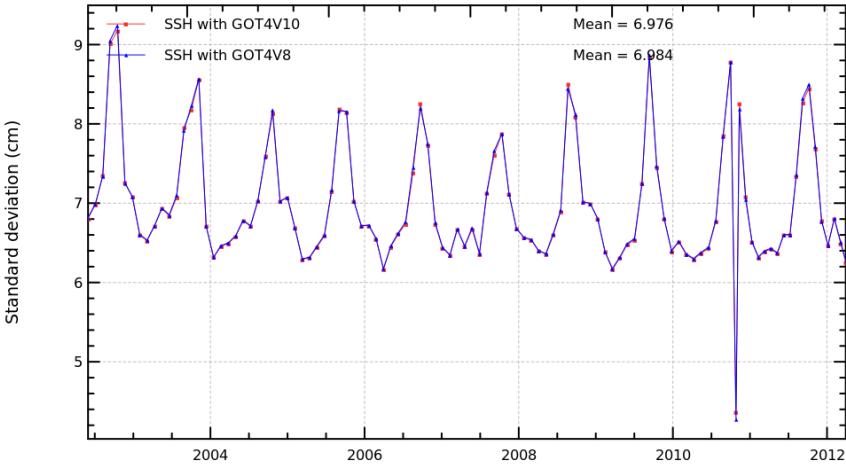
Name : Map of residual signal (around period of 58.77 days)

Input data :

Description :

Diagnostic type :



Diagnostic A101 a (mission en)	
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 en, cycles 6 to 113</div></div><div><div>Standard deviations of SSH crossovers</div><div>Mission en, cycles 6 to 113</div></div></div>	

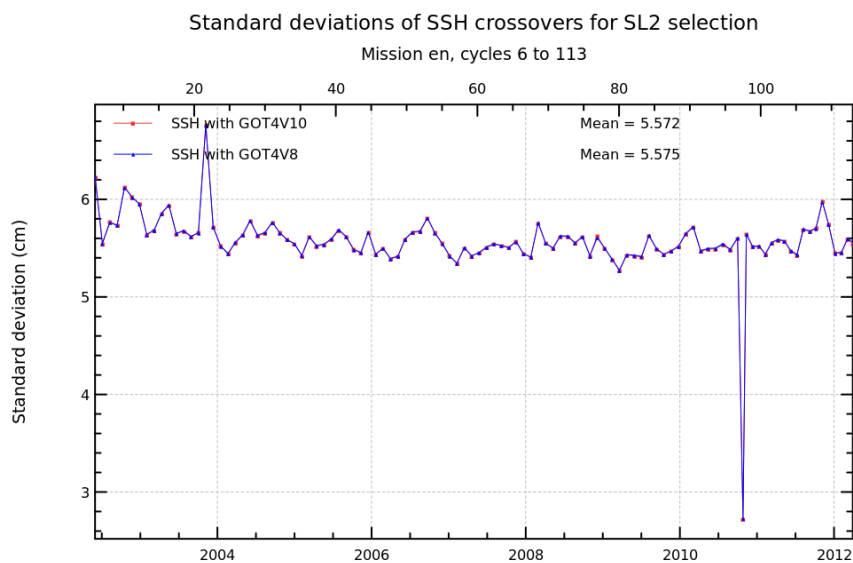
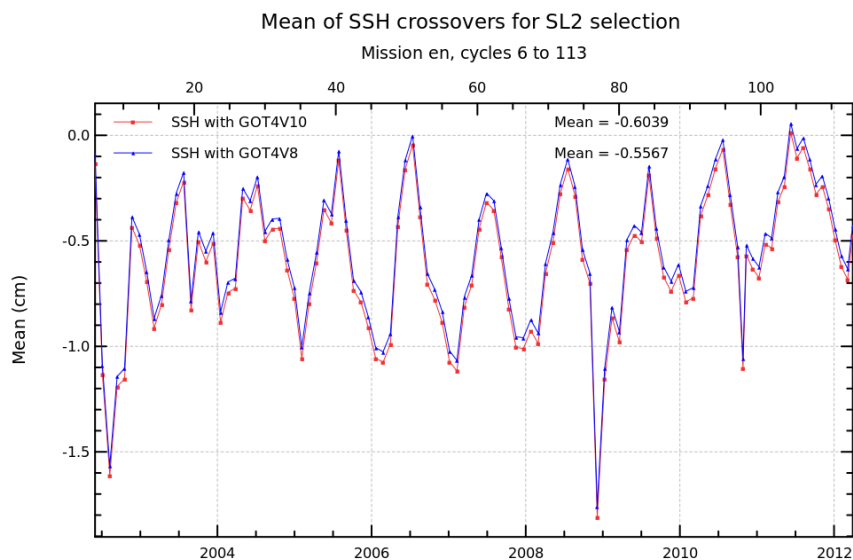
## Diagnostic A101\_b (mission en)

**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).

Diagnostic type : Mono-mission analyses



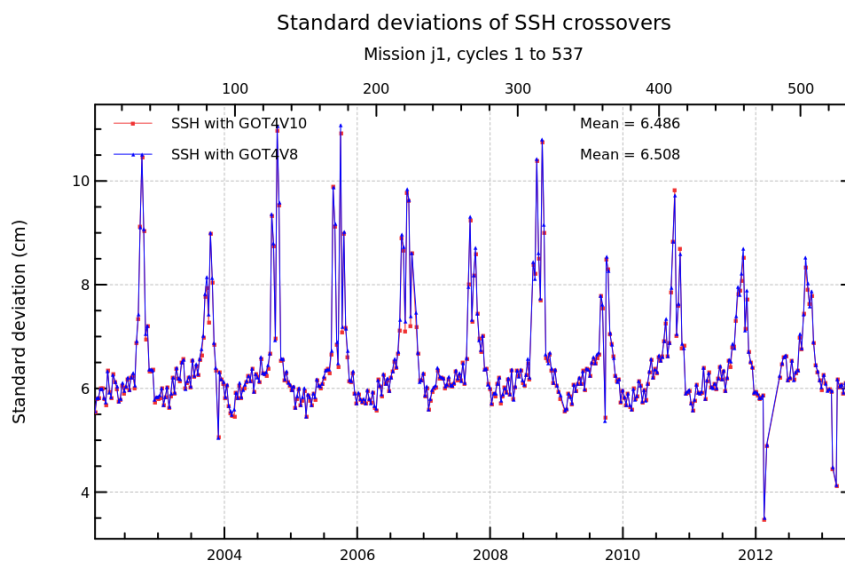
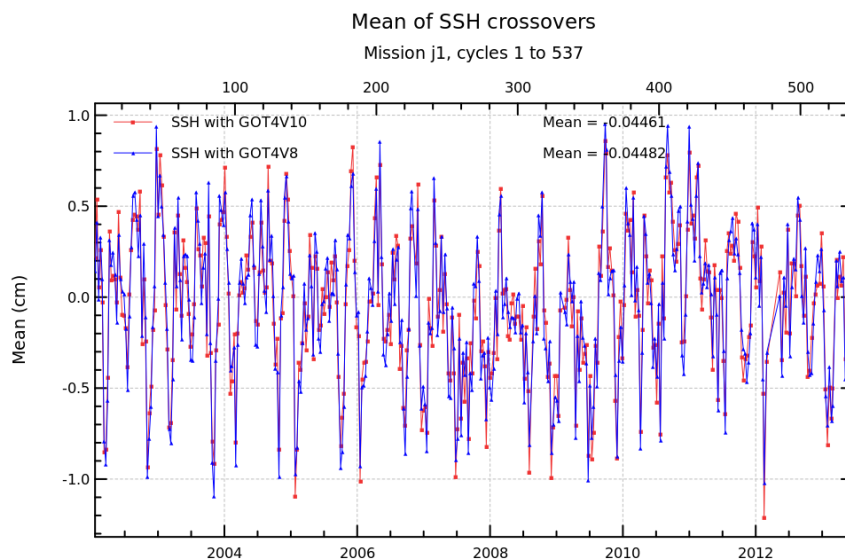
## Diagnostic A101\_a (mission j1)

**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



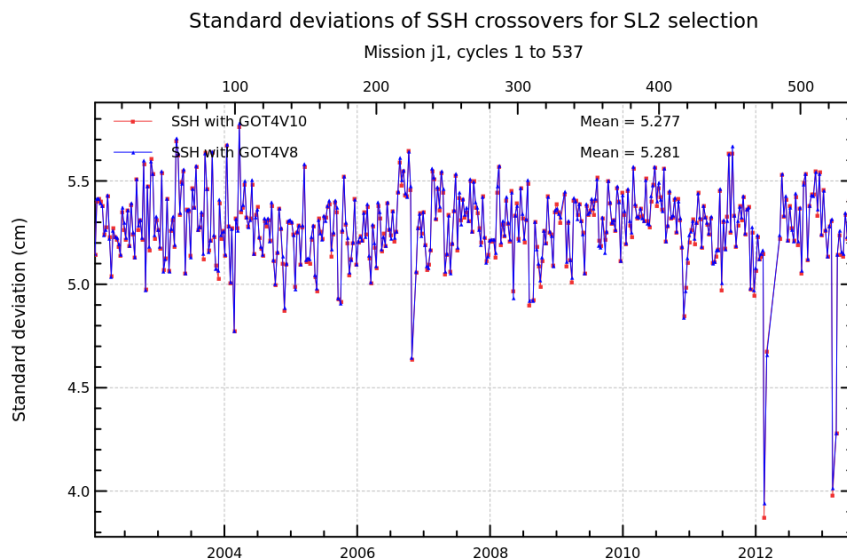
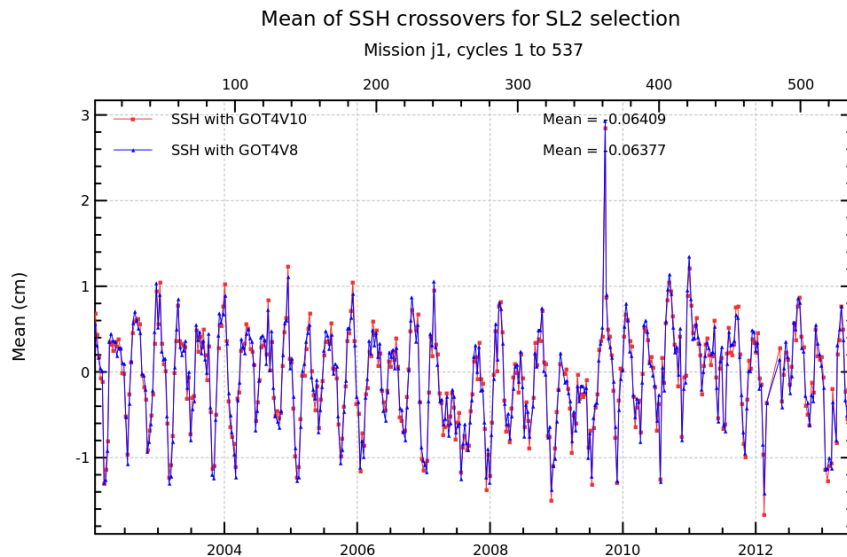
## Diagnostic A101\_b (mission j1)

**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



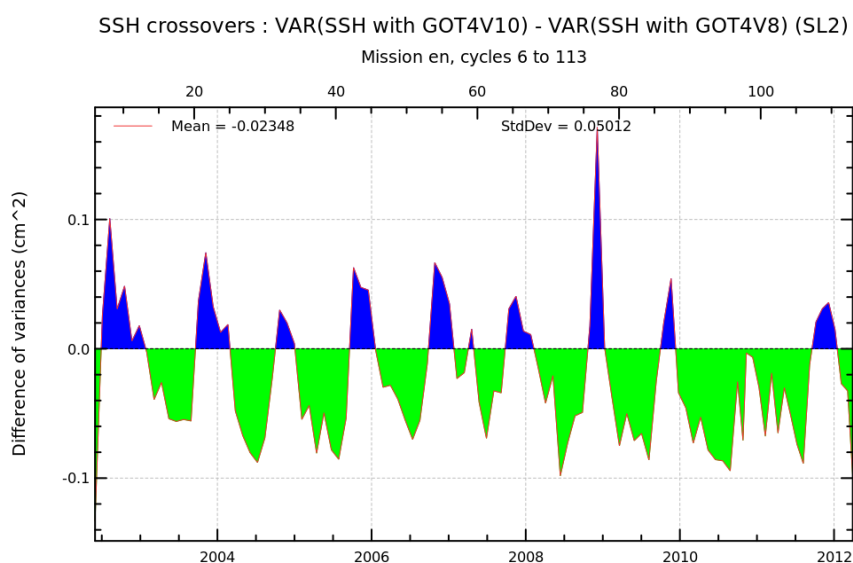
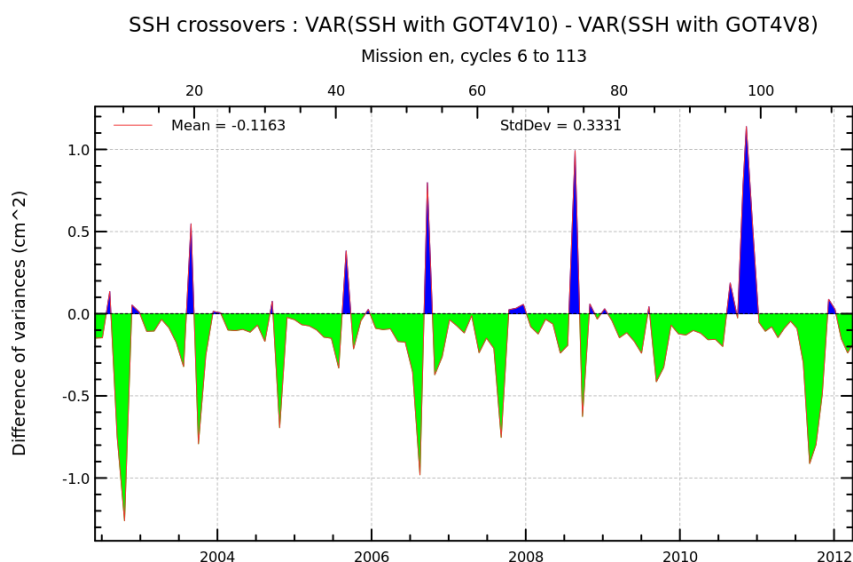
## Diagnostic A102 (mission en)

**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 type : Mono-mission analyses



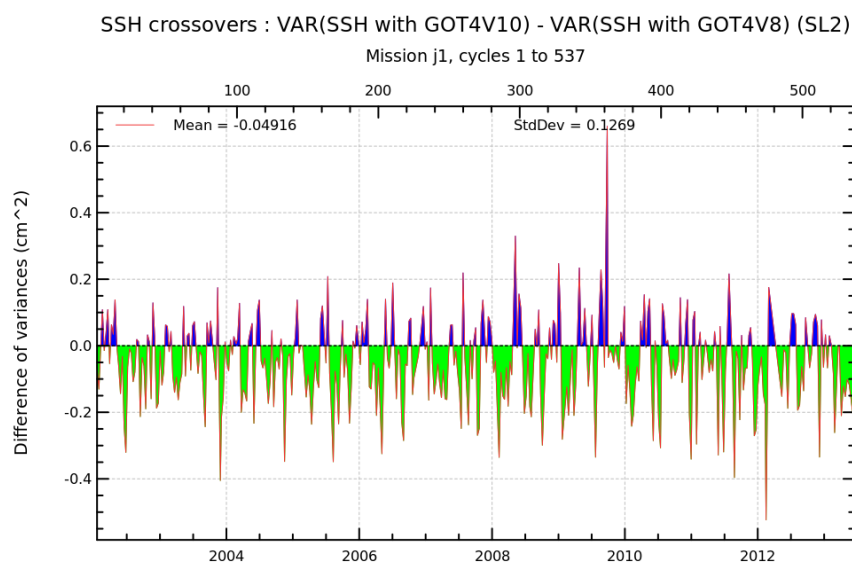
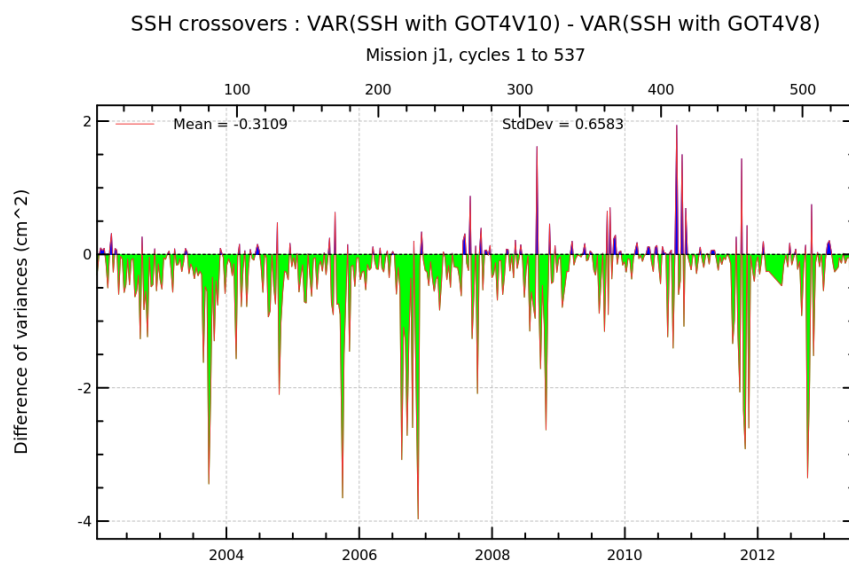
## Diagnostic A102 (mission j1)

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

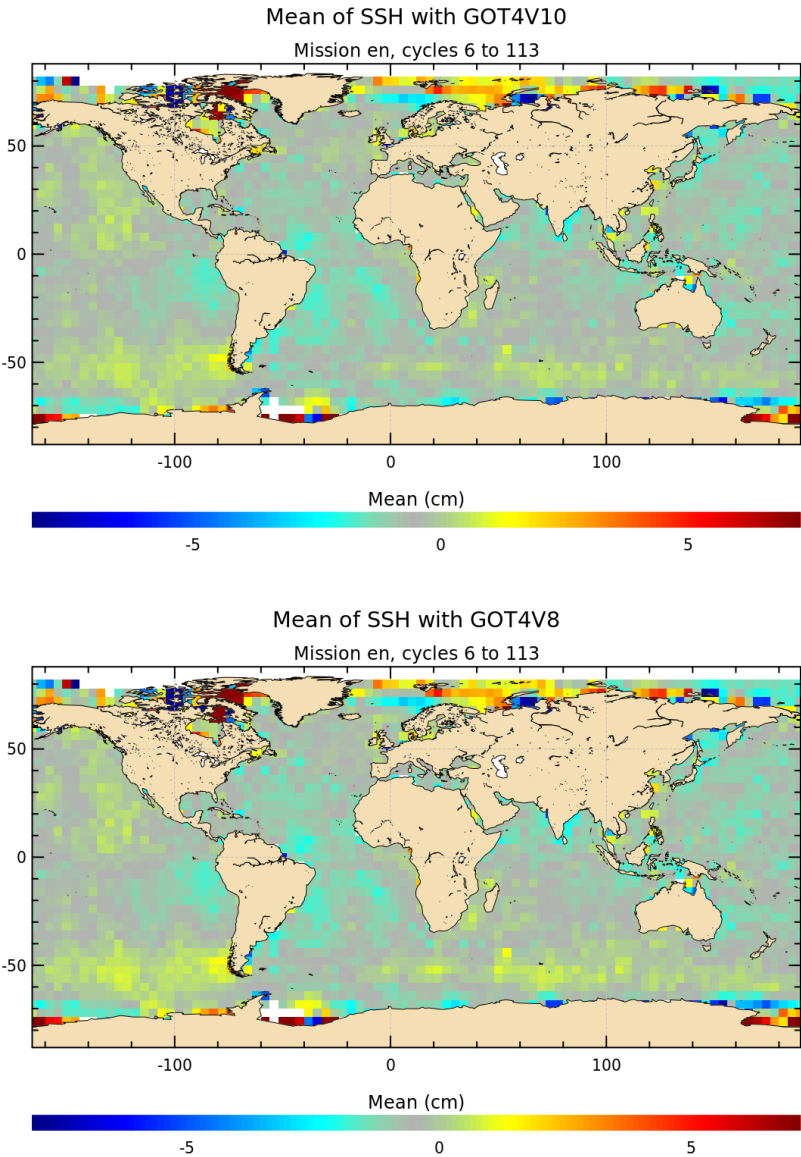
**Input data :** Sea Surface Height (SSH) crossovers

**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).

Diagnostic type : Mono-mission analyses



Diagnostic A103 (mission en)	
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).	



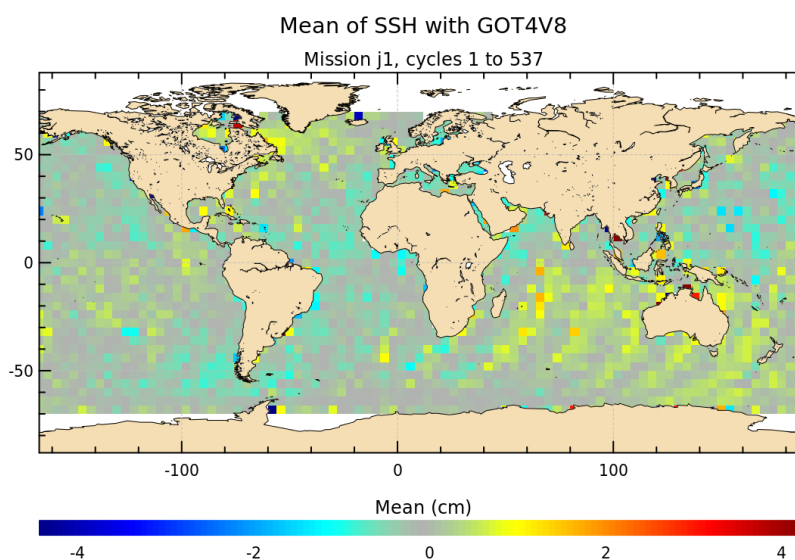
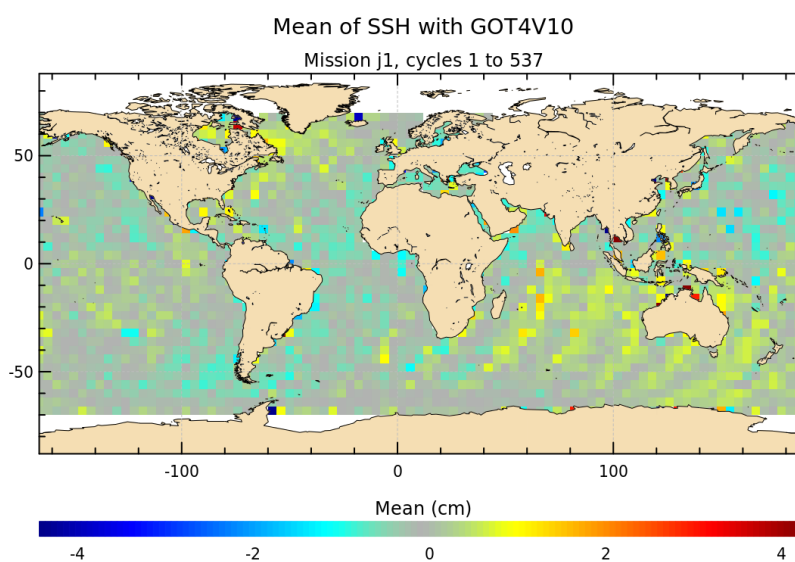
## Diagnostic A103 (mission j1)

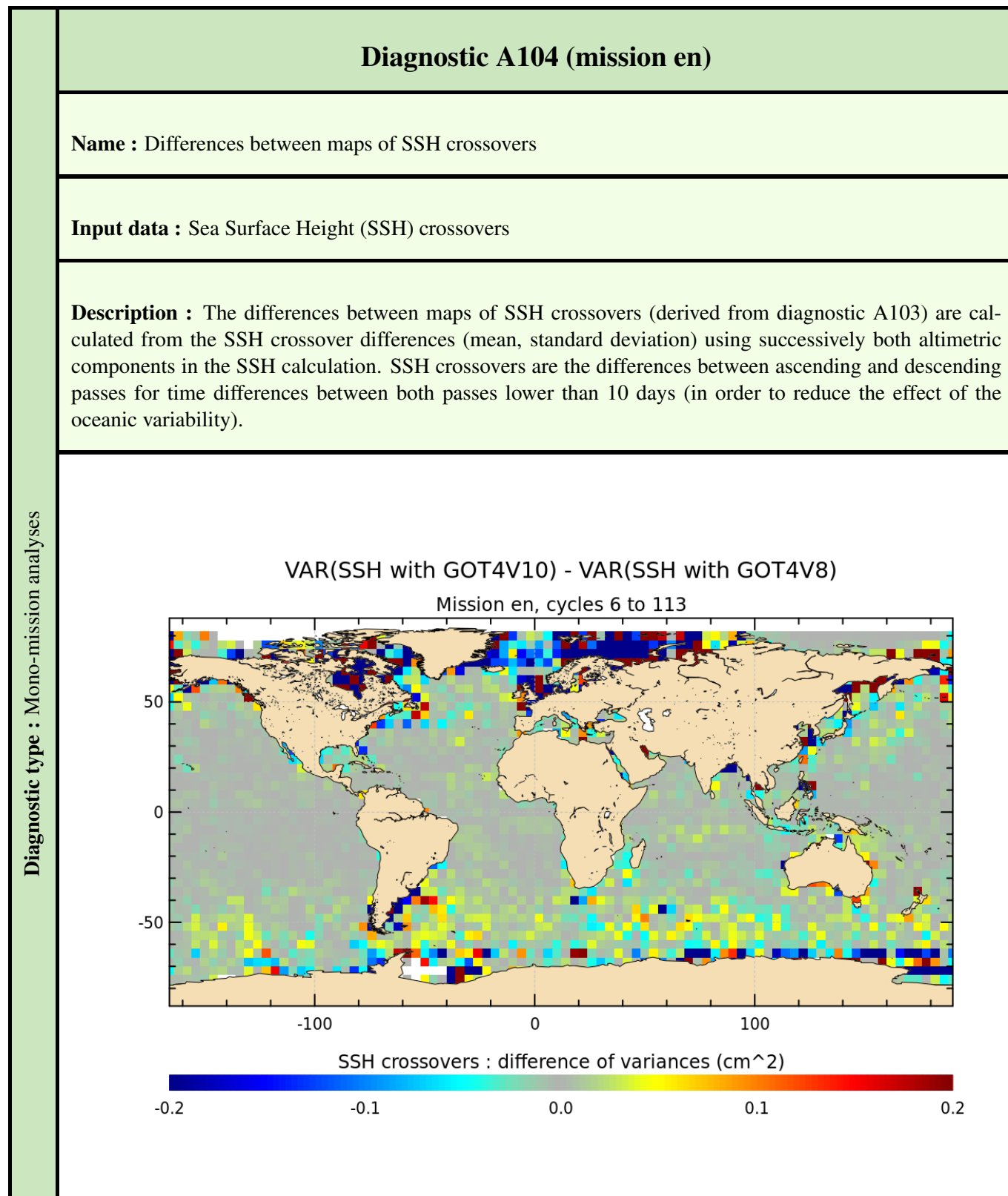
**Name :** Map of SSH crossovers

**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 type : Mono-mission analyses





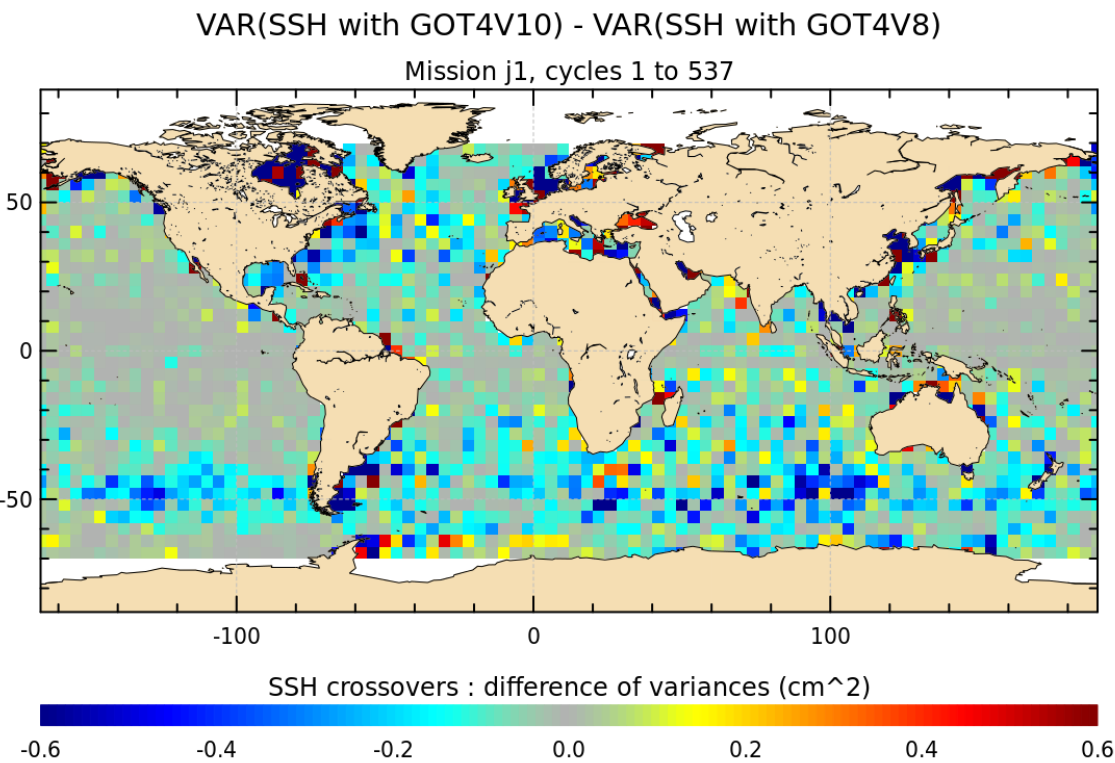
## Diagnostic A104 (mission j1)

**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).

Diagnostic type : Mono-mission analyses



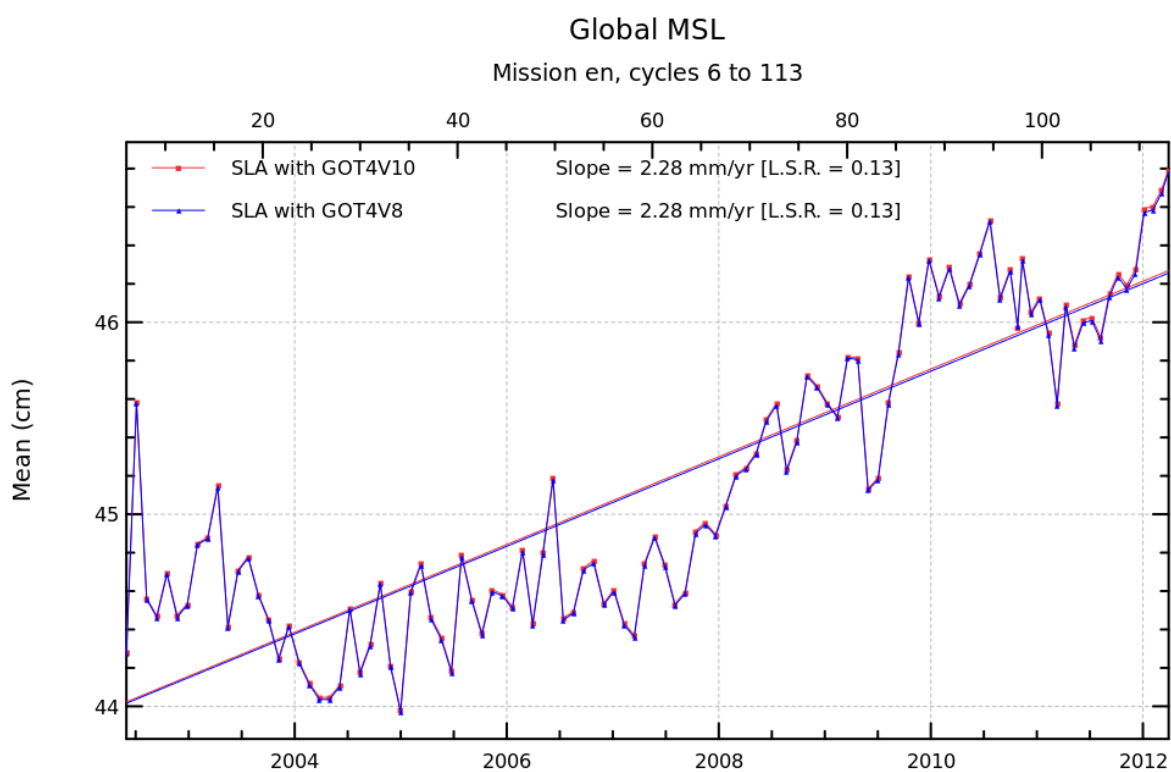
## Diagnostic A201 a (mission en)

**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 type : Mono-mission analyses



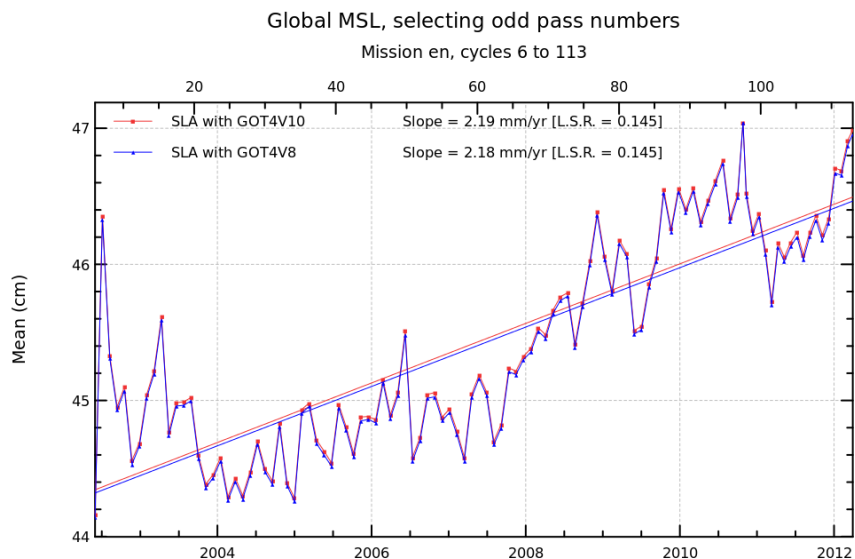
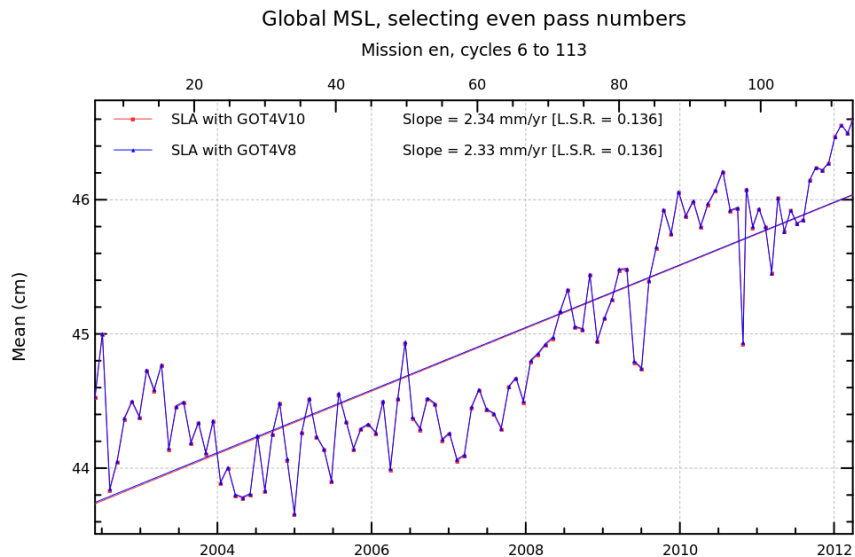
## Diagnostic A201\_b (mission en)

**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 type : Mono-mission analyses



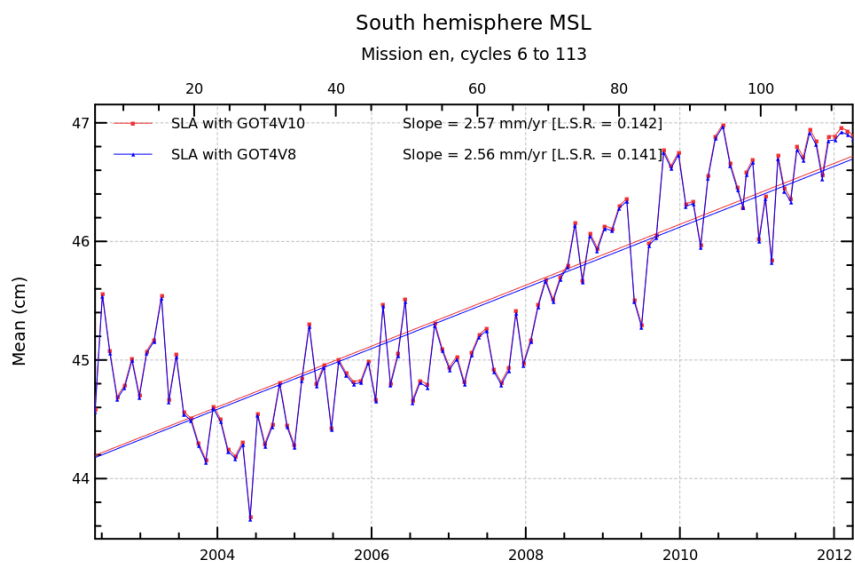
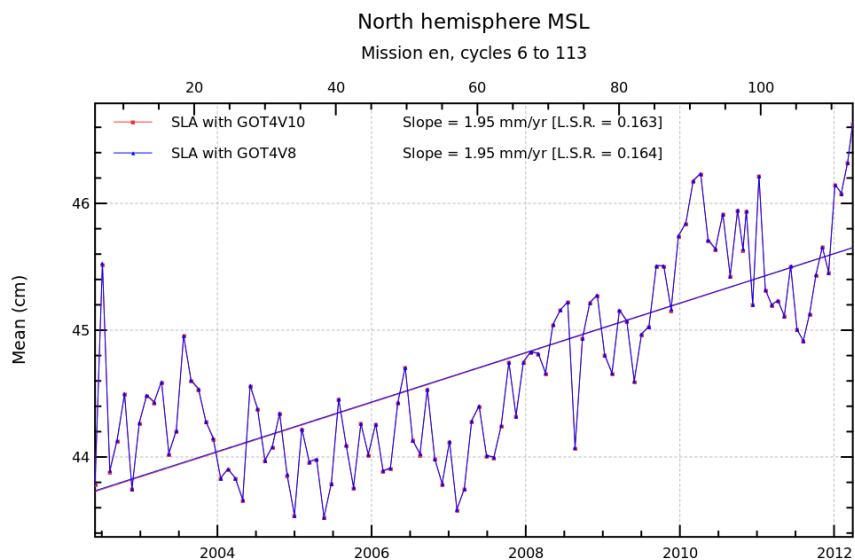
## Diagnostic A201\_c (mission en)

**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 type : Mono-mission analyses



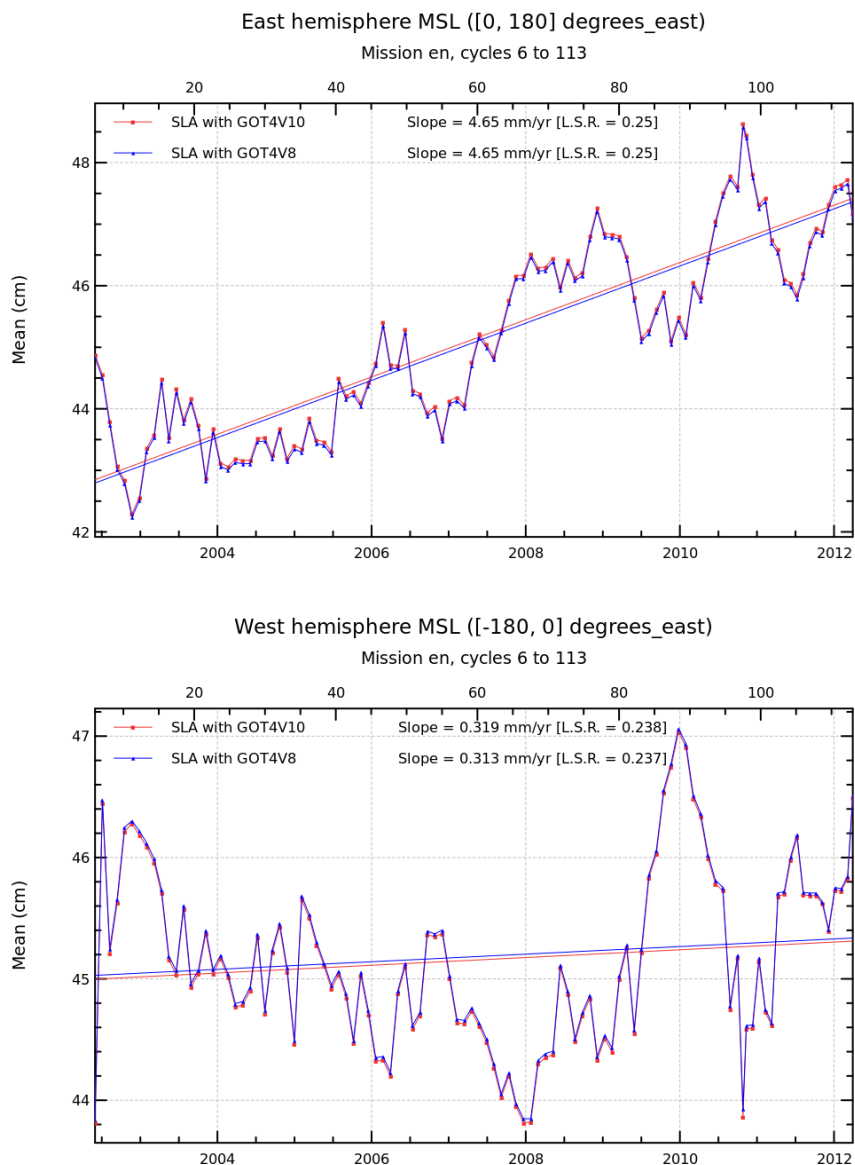
## Diagnostic A201\_d (mission en)

**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.

Diagnostic type : Mono-mission analyses



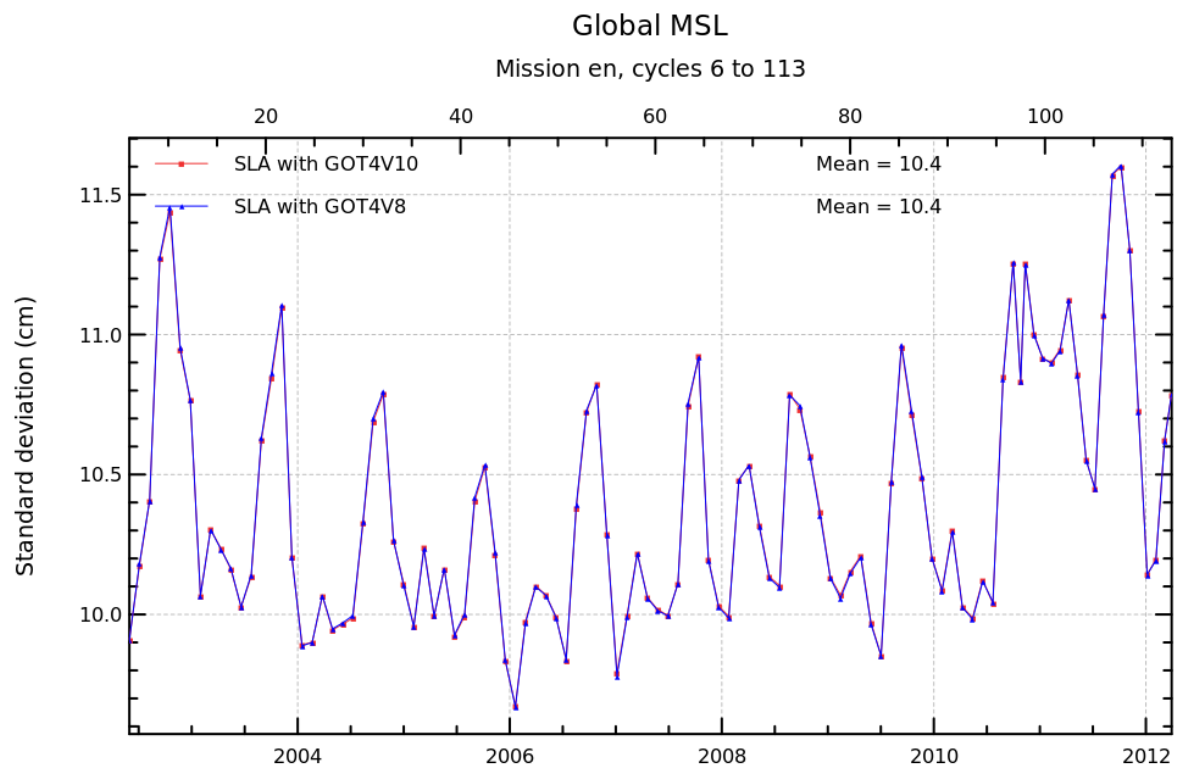
## Diagnostic A201\_e (mission en)

**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 type : Mono-mission analyses



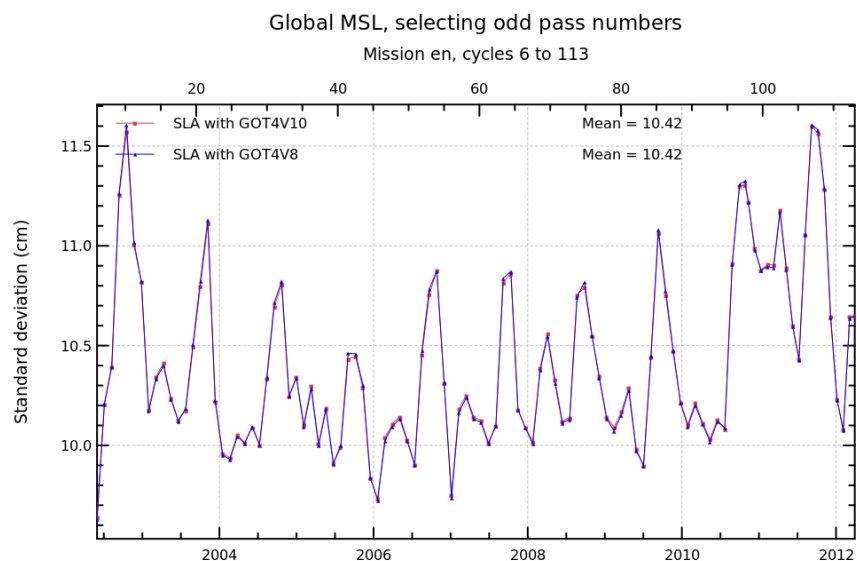
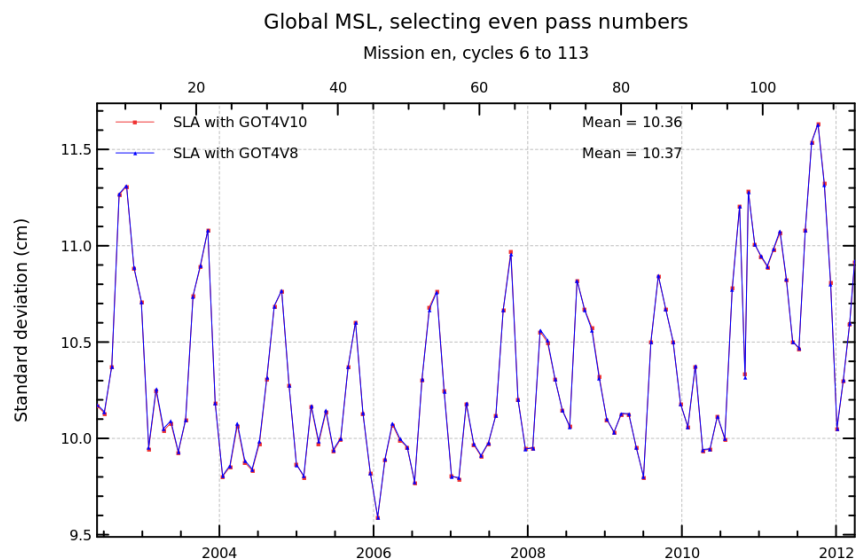
## Diagnostic A201\_f (mission en)

**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 type : Mono-mission analyses



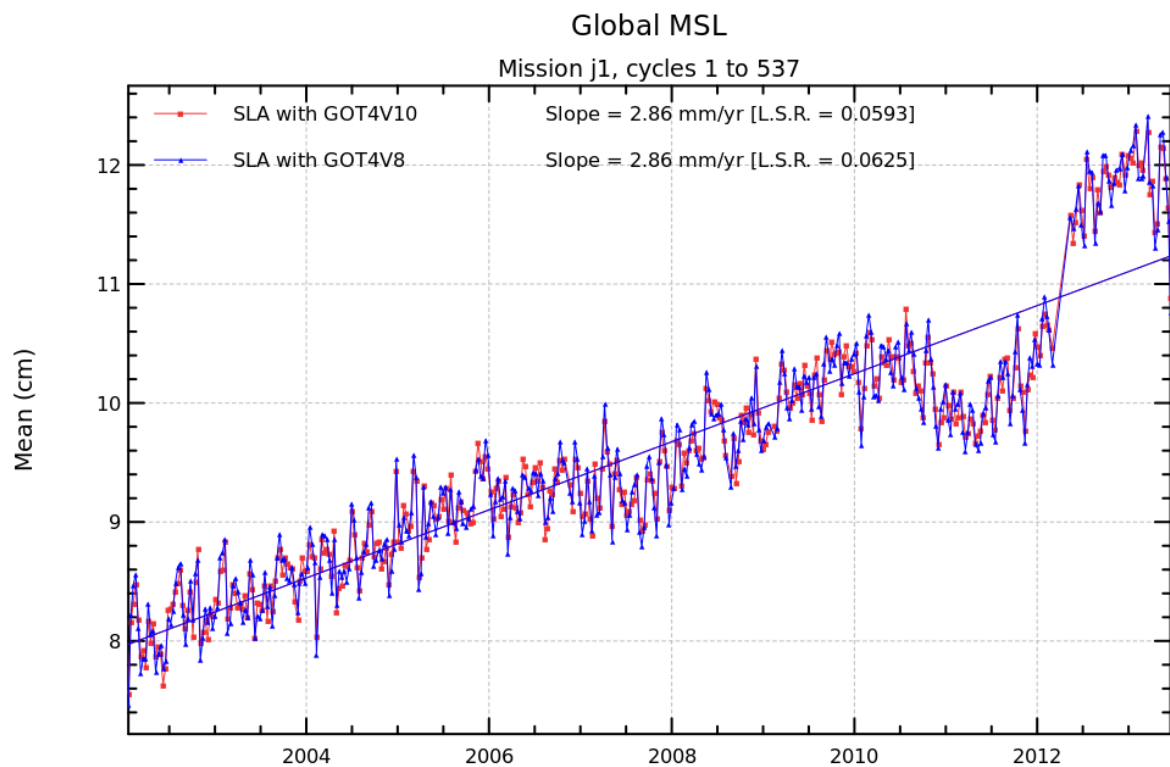
## Diagnostic A201\_a (mission j1)

**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 type : Mono-mission analyses



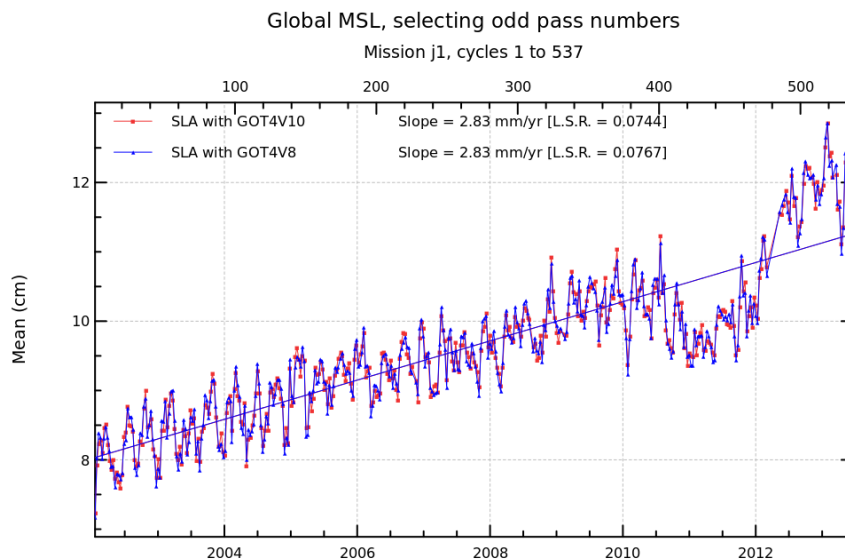
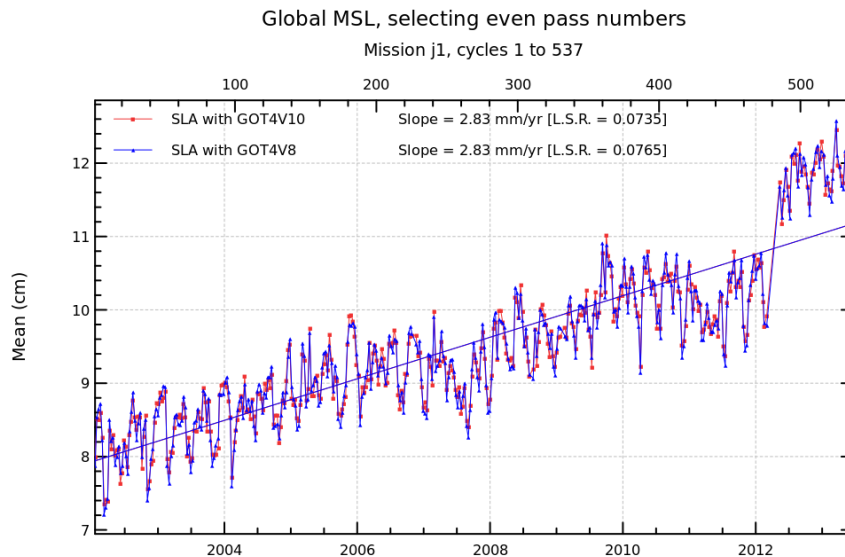
## Diagnostic A201\_b (mission j1)

**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.

Diagnostic type : Mono-mission analyses



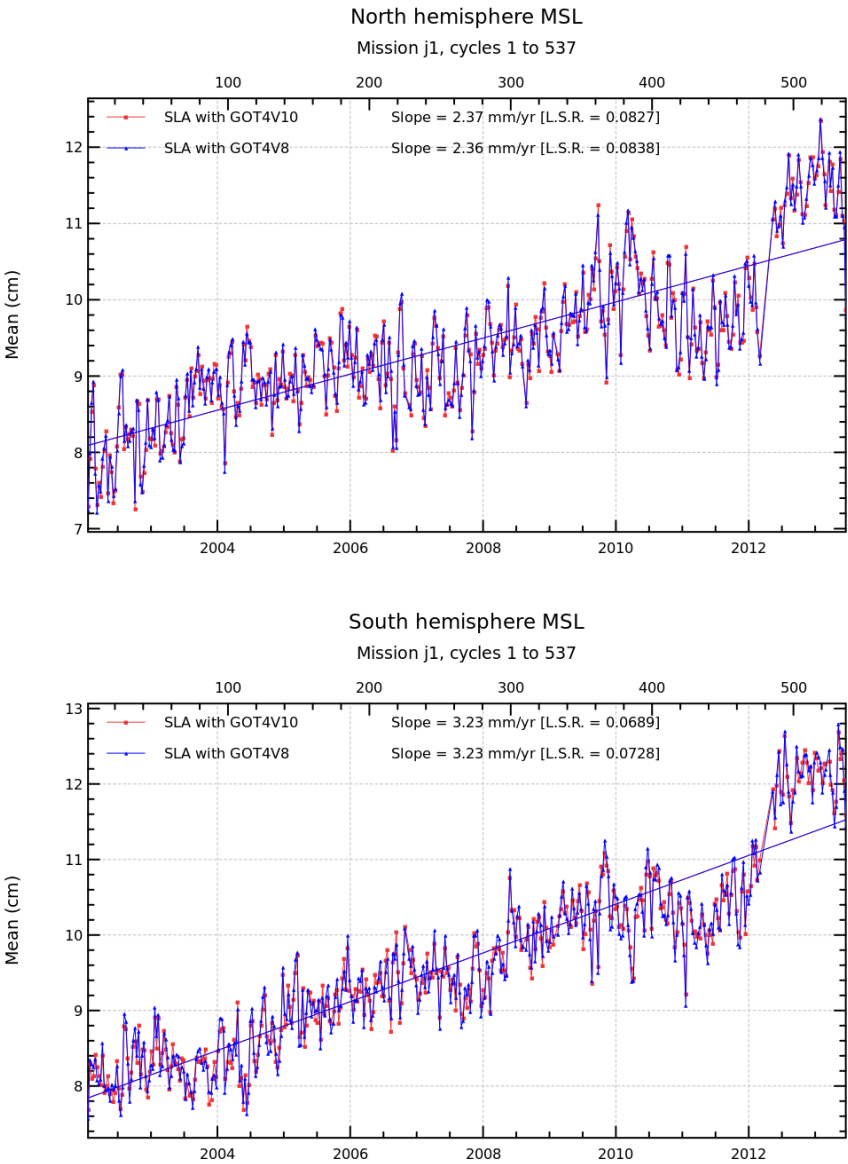
## Diagnostic A201\_c (mission j1)

**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 type : Mono-mission analyses



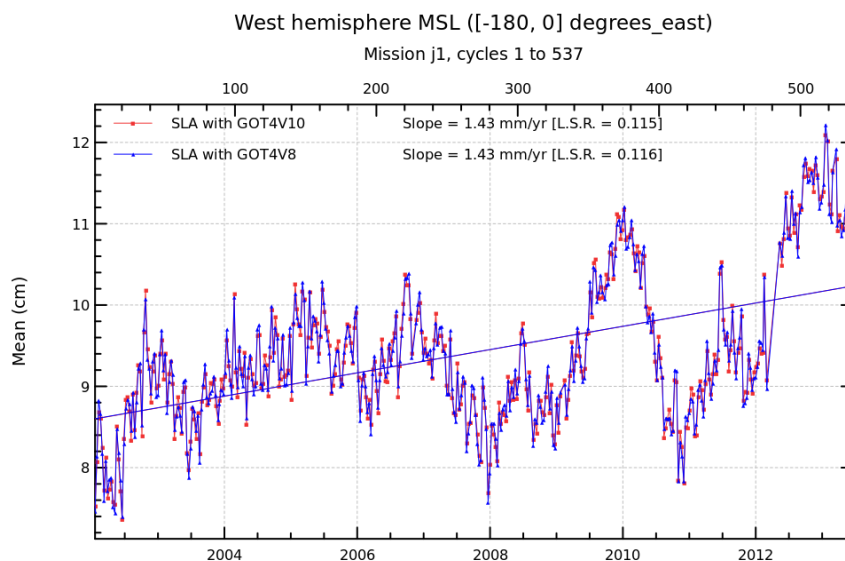
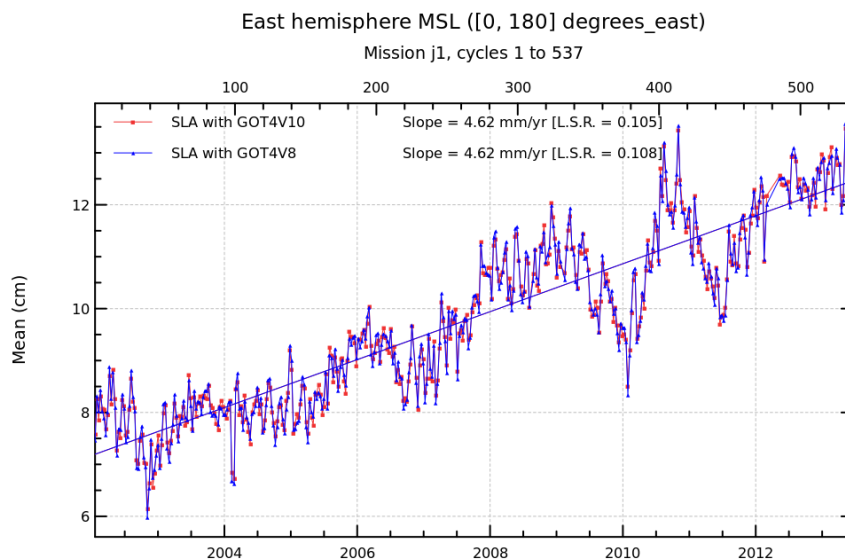
## Diagnostic A201\_d (mission j1)

**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.

Diagnostic type : Mono-mission analyses



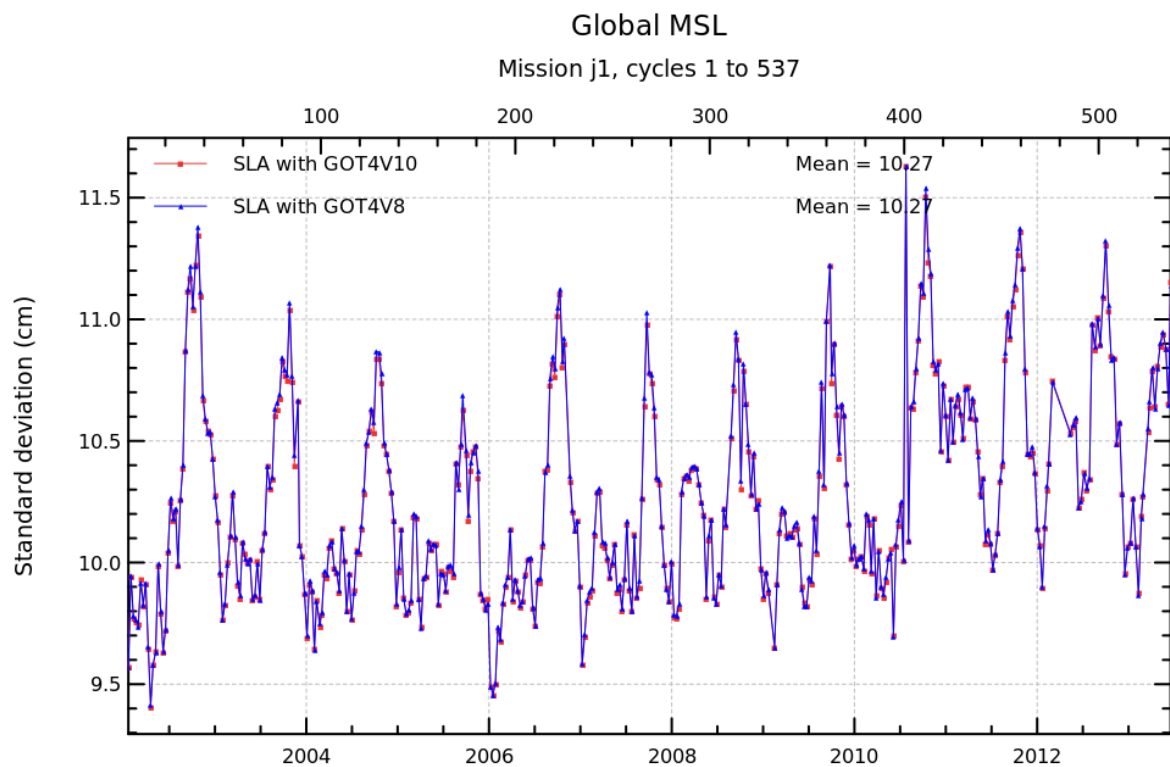
## Diagnostic A201\_e (mission j1)

**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 type : Mono-mission analyses



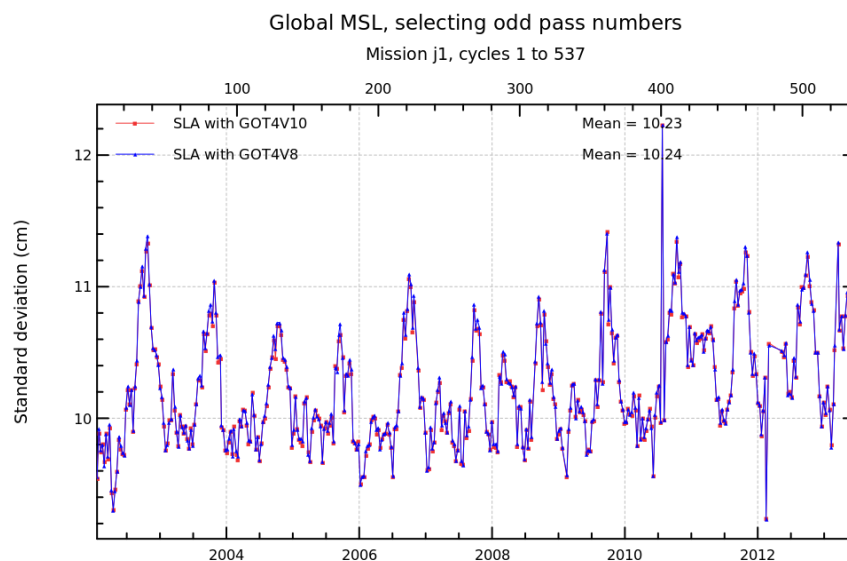
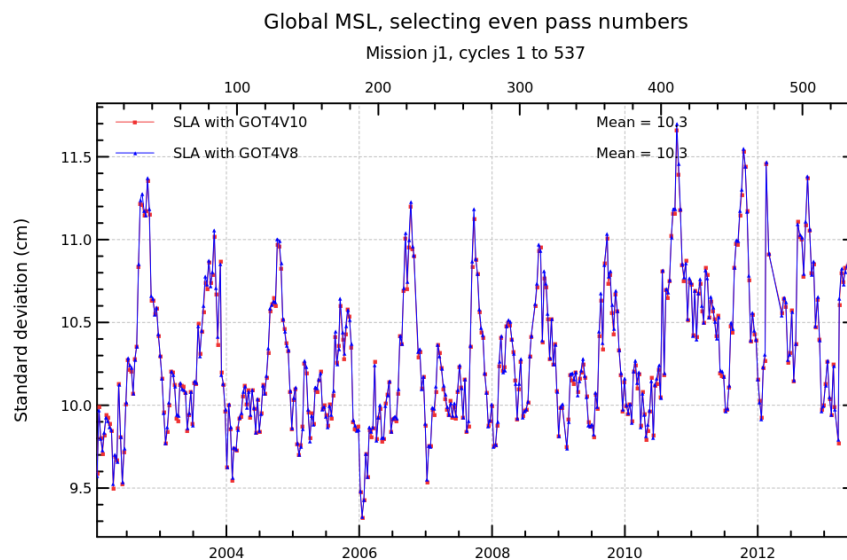
## Diagnostic A201\_f (mission j1)

**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 type : Mono-mission analyses



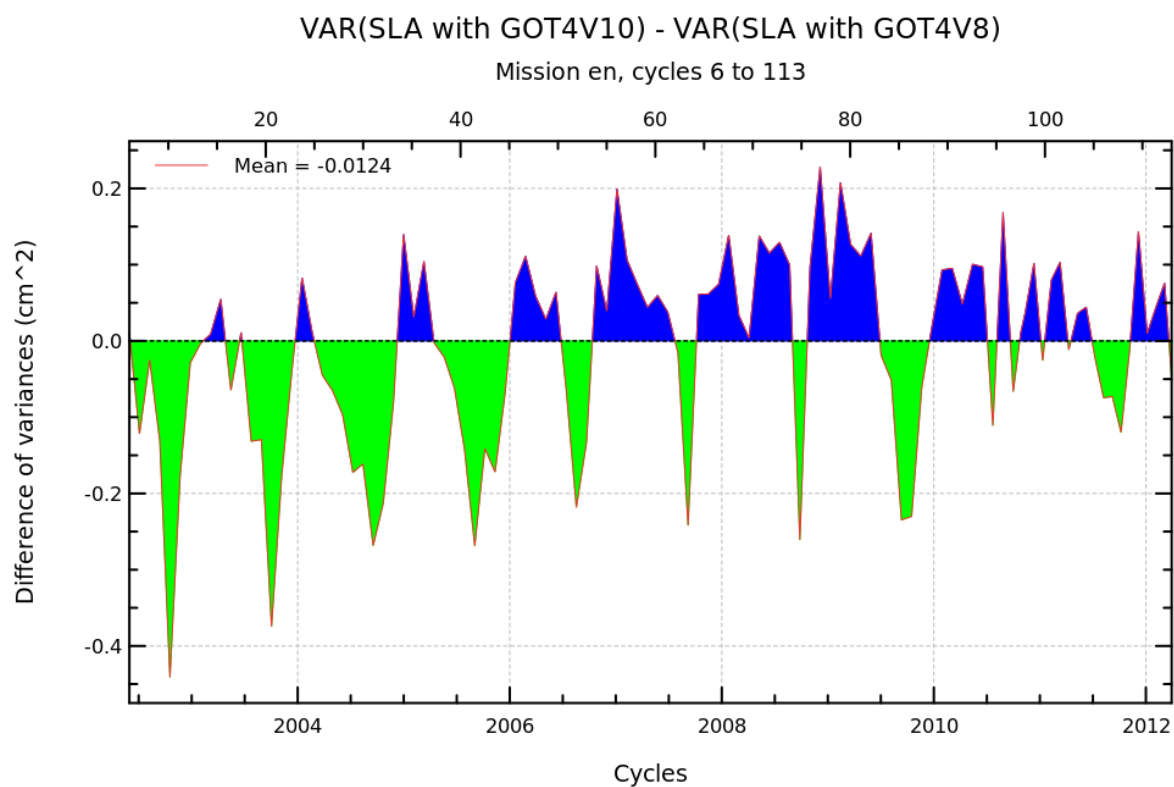
**Diagnostic A202\_a (mission en)**

**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.

Diagnostic type : Mono-mission analyses



## Diagnostic A202\_b (mission en)

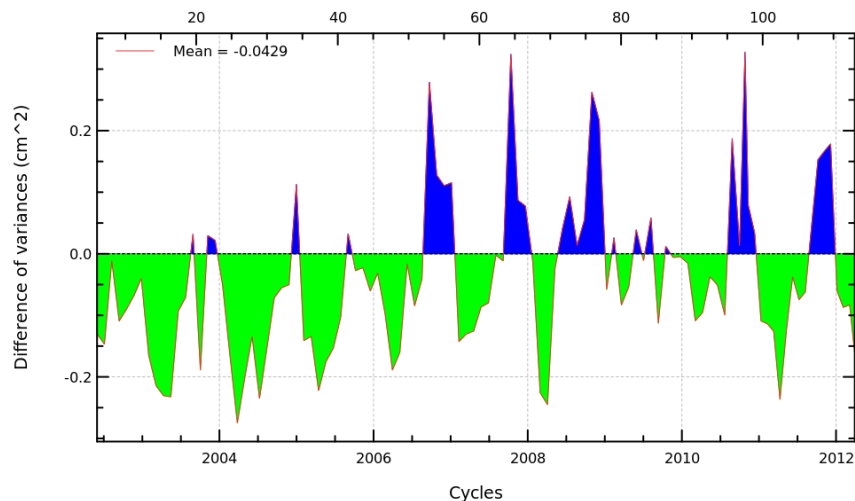
**Name :** Differences between temporal evolution of Sea Level Anomaly (SLA)

**Input data :** Along track SLA

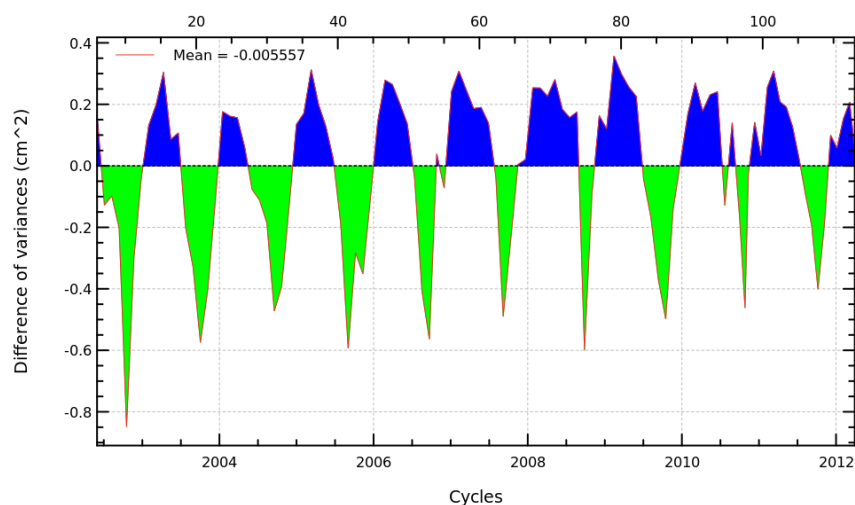
**Description :** The differences between temporal evolution of SLA are calculated from statistics derived from diagnostic A201 (mean, variance) using 2 different components in the SLA calculation. They are calculated globally, but also separating ascending and descending passes (except for SLA Grids)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

Diagnostic type : Mono-mission analyses

VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8), even pass numbers  
Mission en, cycles 6 to 113



VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8), odd pass numbers  
Mission en, cycles 6 to 113



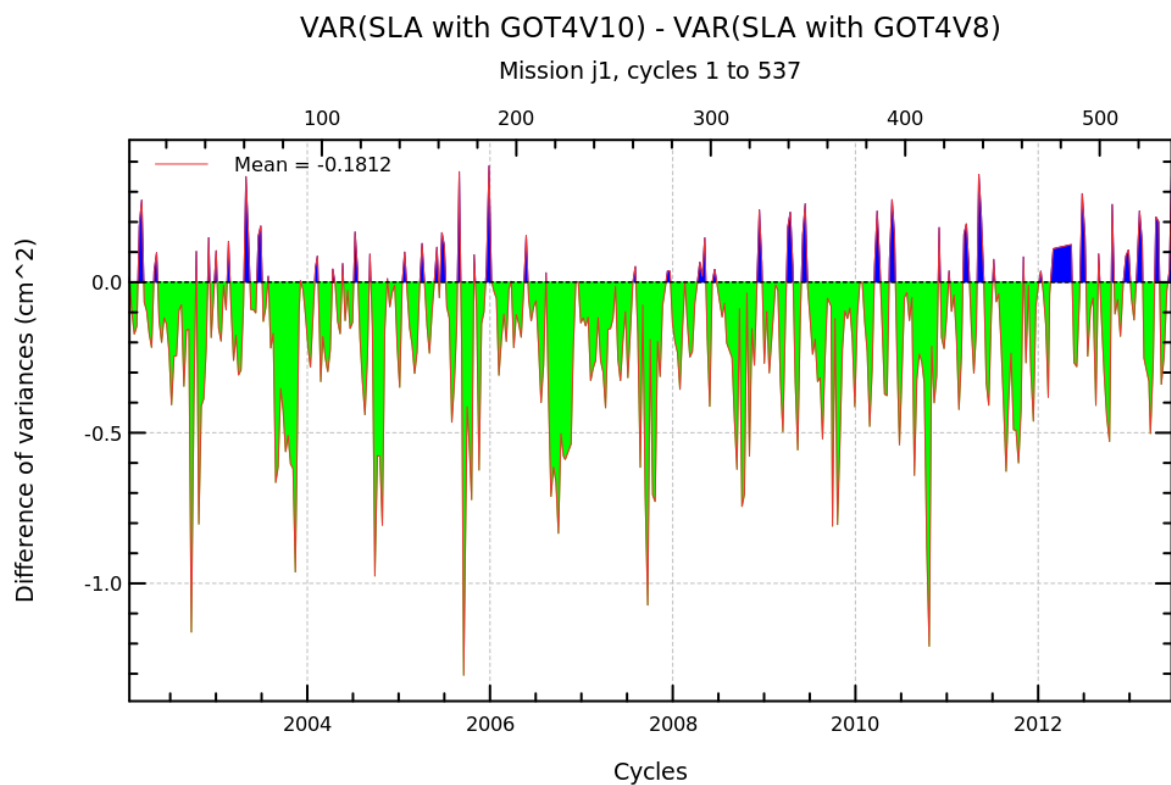
## Diagnostic A202\_a (mission j1)

**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.

Diagnostic type : Mono-mission analyses



## Diagnostic A202\_b (mission j1)

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

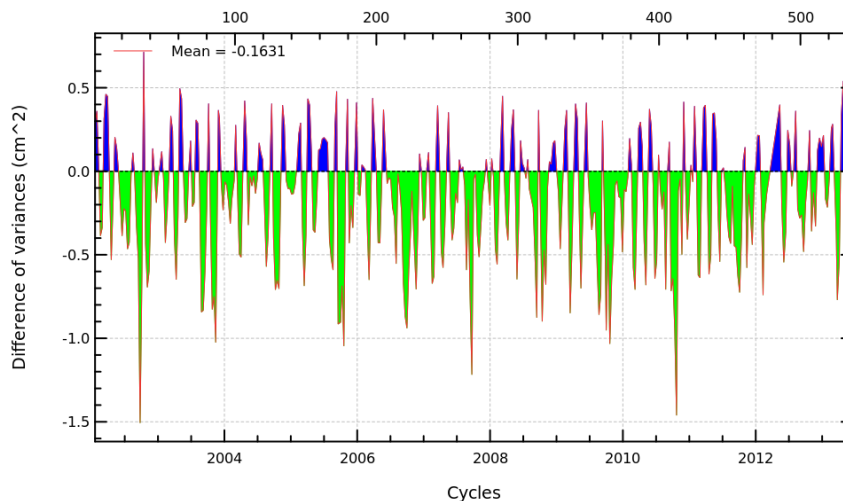
**Input data :** Along track SLA

**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.

Diagnostic type : Mono-mission analyses

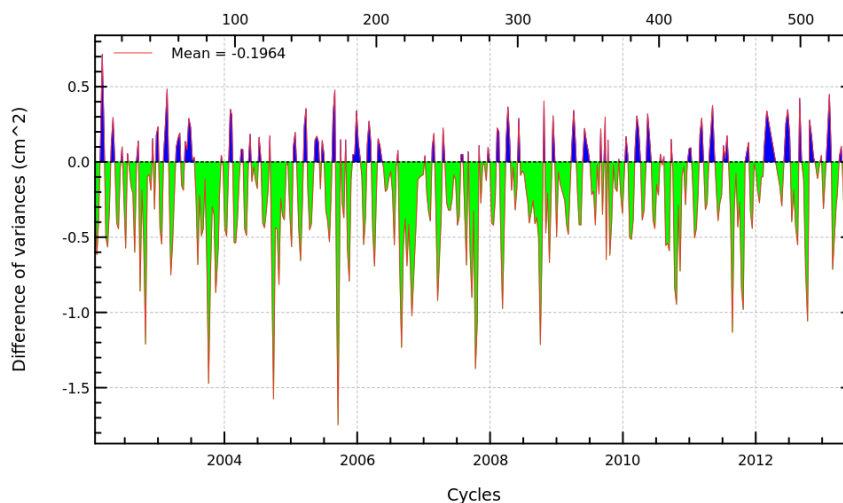
VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8), even pass numbers

Mission j1, cycles 1 to 537



VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8), odd pass numbers

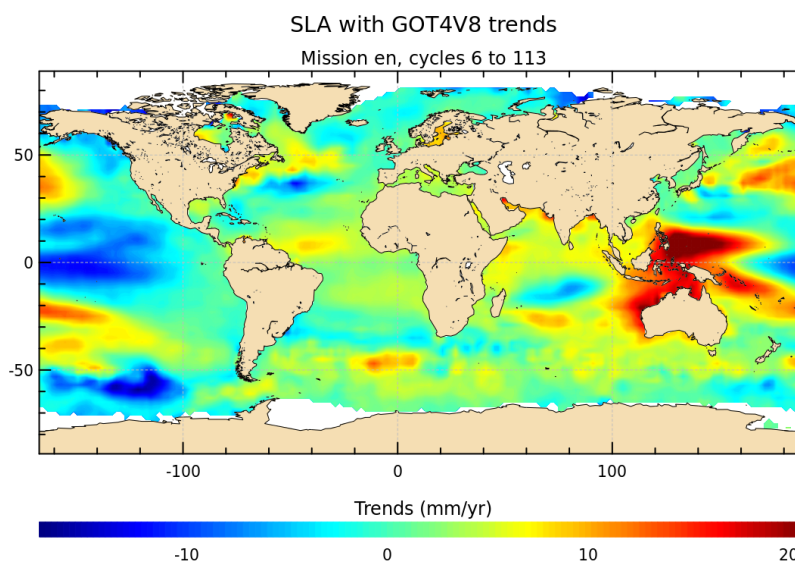
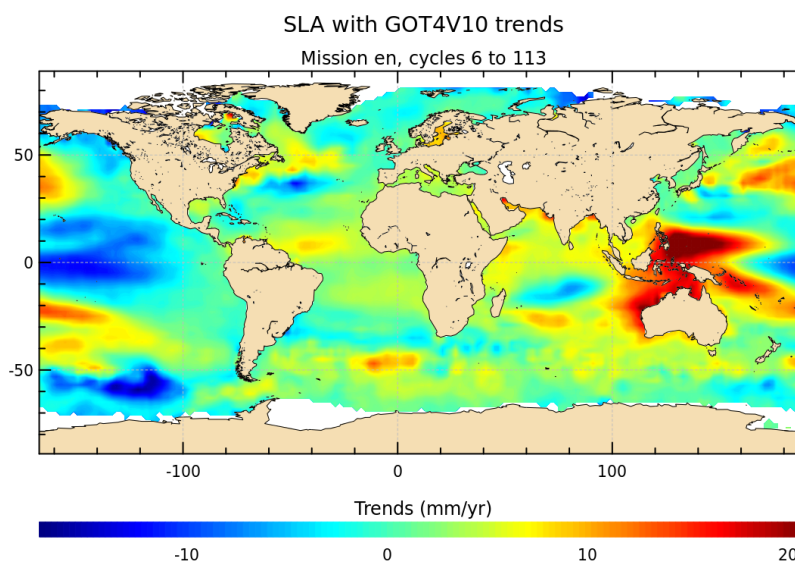
Mission j1, cycles 1 to 537



**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\_b (mission en)

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

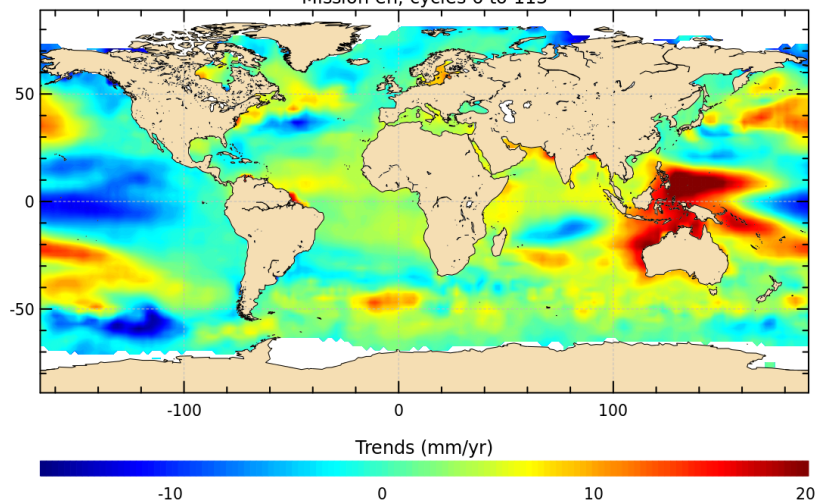
**Input data :** Along track SLA

**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.

Diagnostic type : Mono-mission analyses

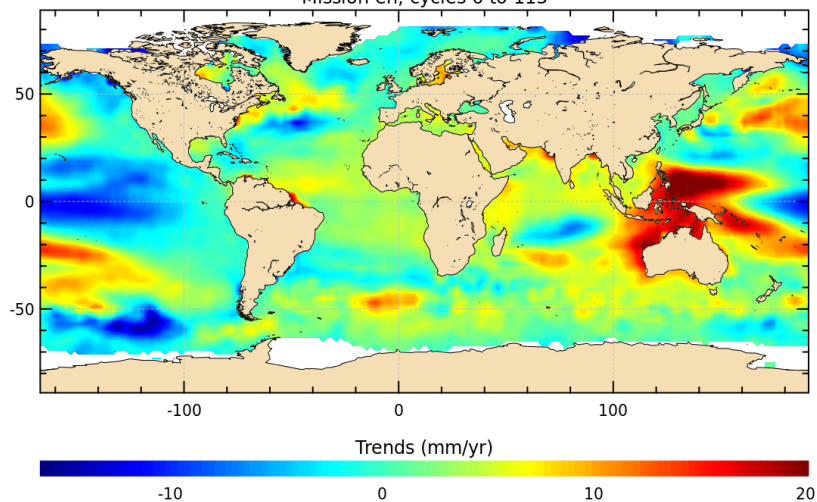
SLA with GOT4V10 trends : even pass numbers

Mission en, cycles 6 to 113



SLA with GOT4V8 trends : even pass numbers

Mission en, cycles 6 to 113



## Diagnostic A203\_c (mission en)

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

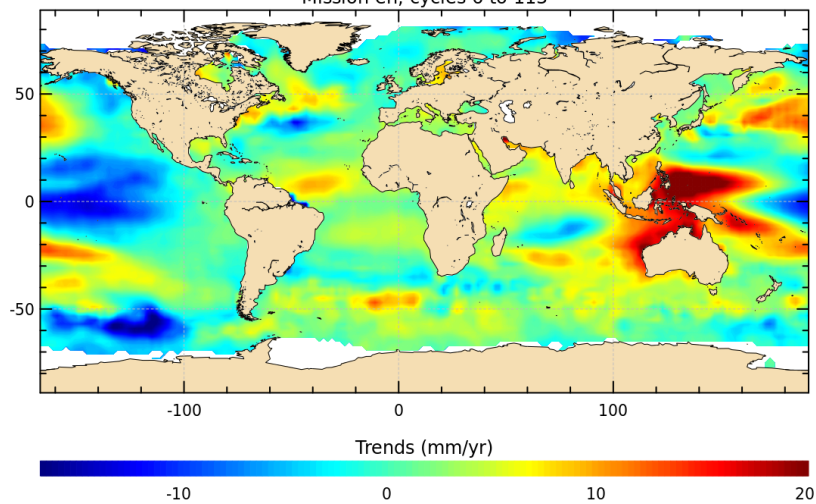
**Input data :** Along track SLA

**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.

Diagnostic type : Mono-mission analyses

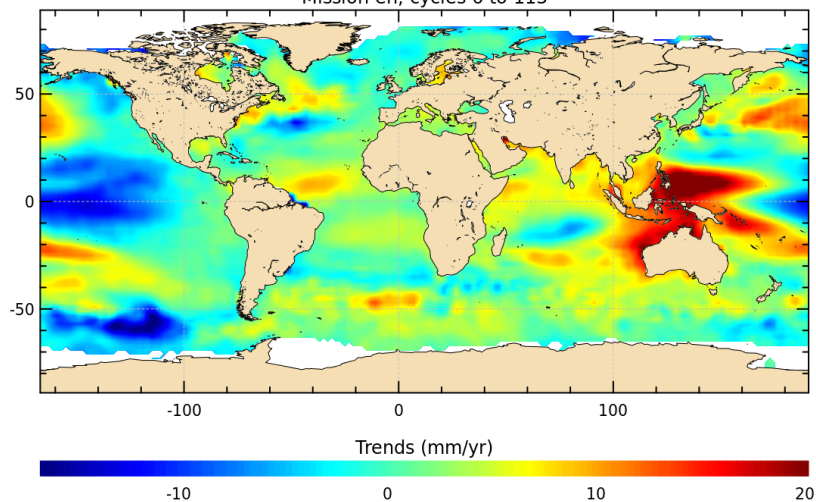
SLA with GOT4V10 trends : odd pass numbers

Mission en, cycles 6 to 113



SLA with GOT4V8 trends : odd pass numbers

Mission en, cycles 6 to 113



## Diagnostic A203\_a (mission j1)

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

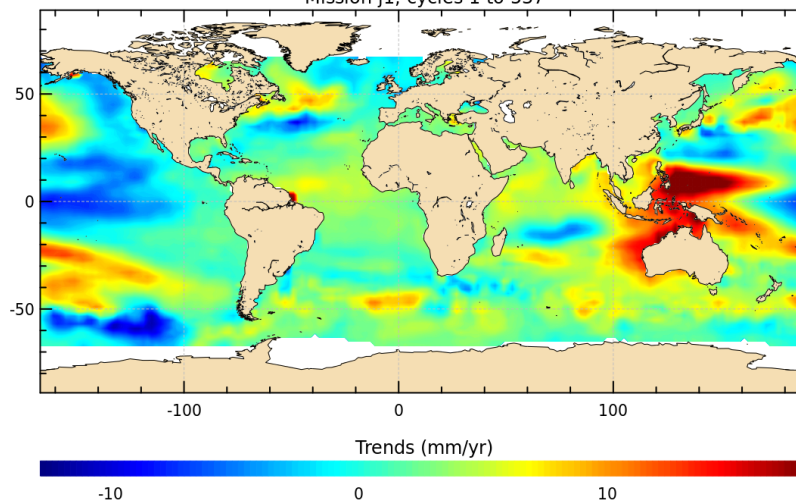
**Input data :** Along track SLA

**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.

Diagnostic type : Mono-mission analyses

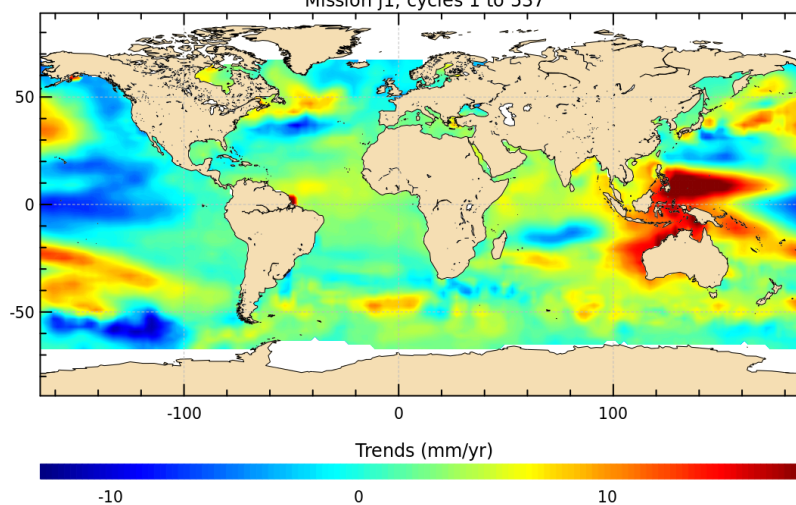
SLA with GOT4V10 trends

Mission j1, cycles 1 to 537



SLA with GOT4V8 trends

Mission j1, cycles 1 to 537



## Diagnostic A203\_b (mission j1)

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

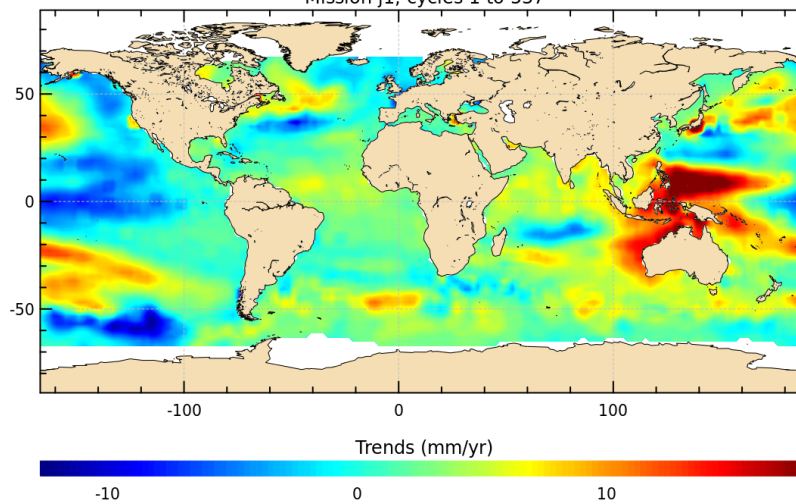
**Input data :** Along track SLA

**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.

Diagnostic type : Mono-mission analyses

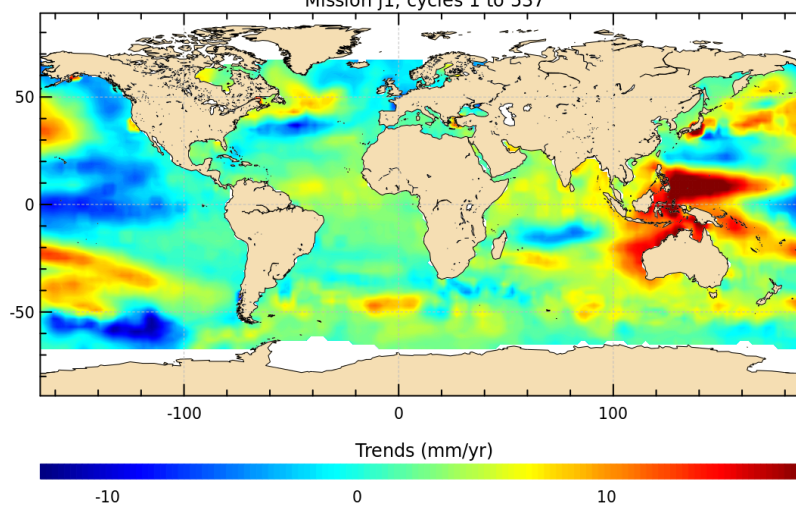
SLA with GOT4V10 trends : even pass numbers

Mission j1, cycles 1 to 537



SLA with GOT4V8 trends : even pass numbers

Mission j1, cycles 1 to 537



## Diagnostic A203\_c (mission j1)

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

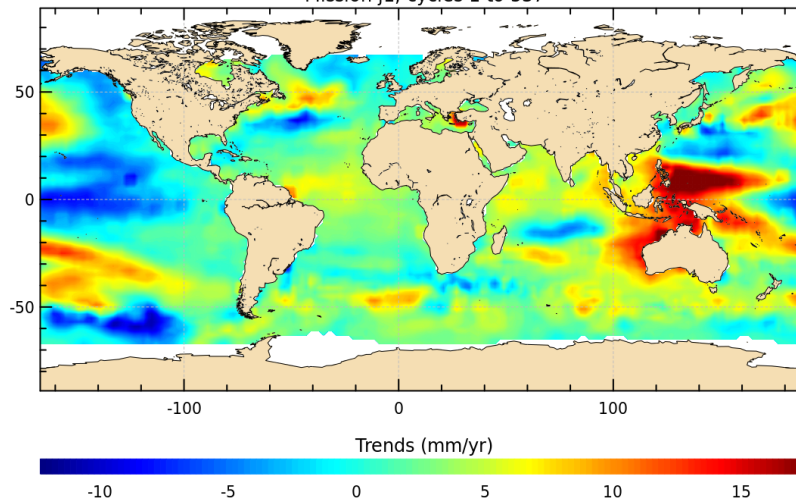
**Input data :** Along track SLA

**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.

Diagnostic type : Mono-mission analyses

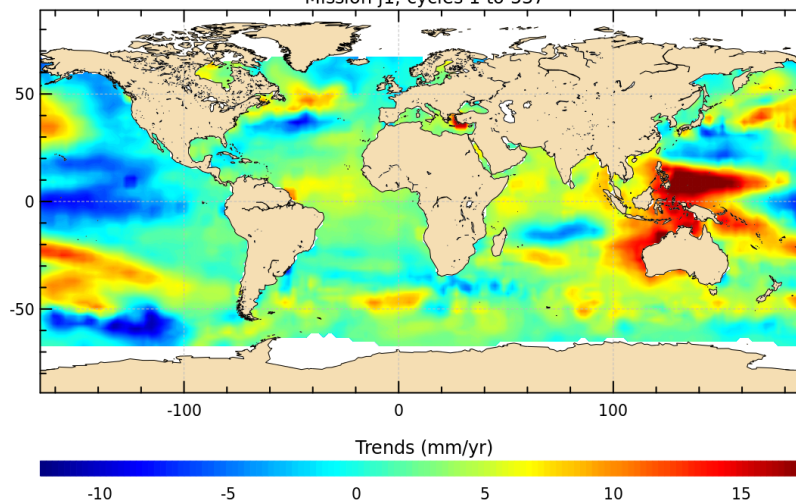
SLA with GOT4V10 trends : odd pass numbers

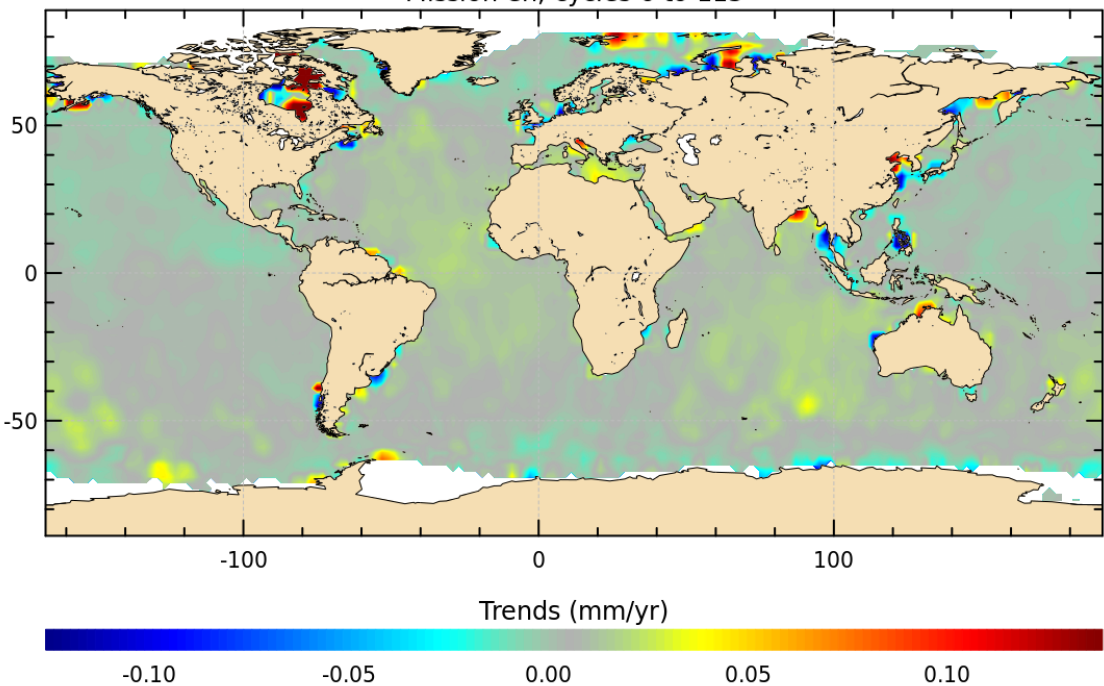
Mission j1, cycles 1 to 537



SLA with GOT4V8 trends : odd pass numbers

Mission j1, cycles 1 to 537



Diagnostic type : Mono-mission analyses	<b>Diagnostic A204 a (mission en)</b>
	<b>Name :</b> Differences between maps of SLA trends
	<b>Input data :</b> Along track SLA
	<b>Description :</b> 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><p>SLA with GOT4V10 trends - SLA with GOT4V8 trends</p><p>Mission en, cycles 6 to 113</p><p>Trends (mm/yr)</p><p>-0.10      -0.05      0.00      0.05      0.10</p></div>

## Diagnostic A204\_b (mission en)

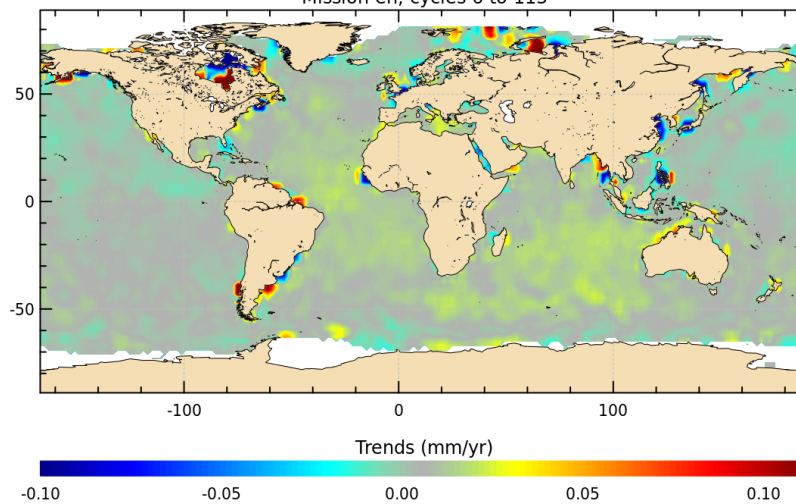
**Name :** Differences between maps of SLA trends

**Input data :** Along track SLA

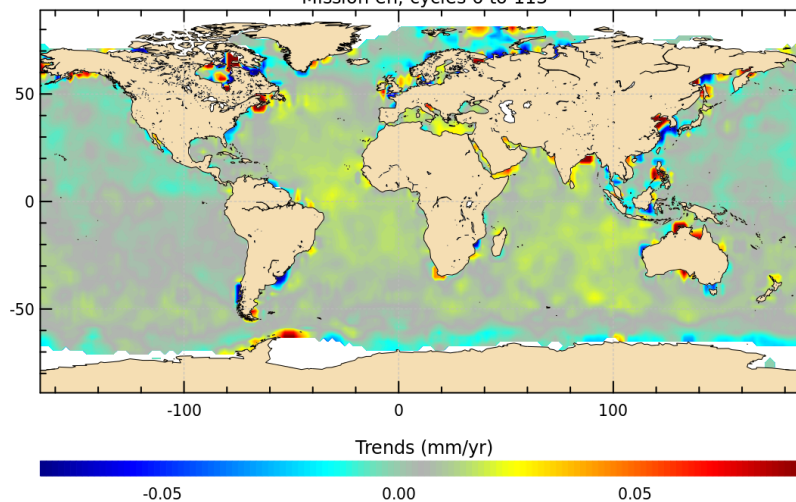
**Description :** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Mono-mission analyses

SLA with GOT4V10 trends - SLA with GOT4V8 trends : even pass number  
Mission en, cycles 6 to 113



SLA with GOT4V10 trends - SLA with GOT4V8 trends : odd pass number  
Mission en, cycles 6 to 113



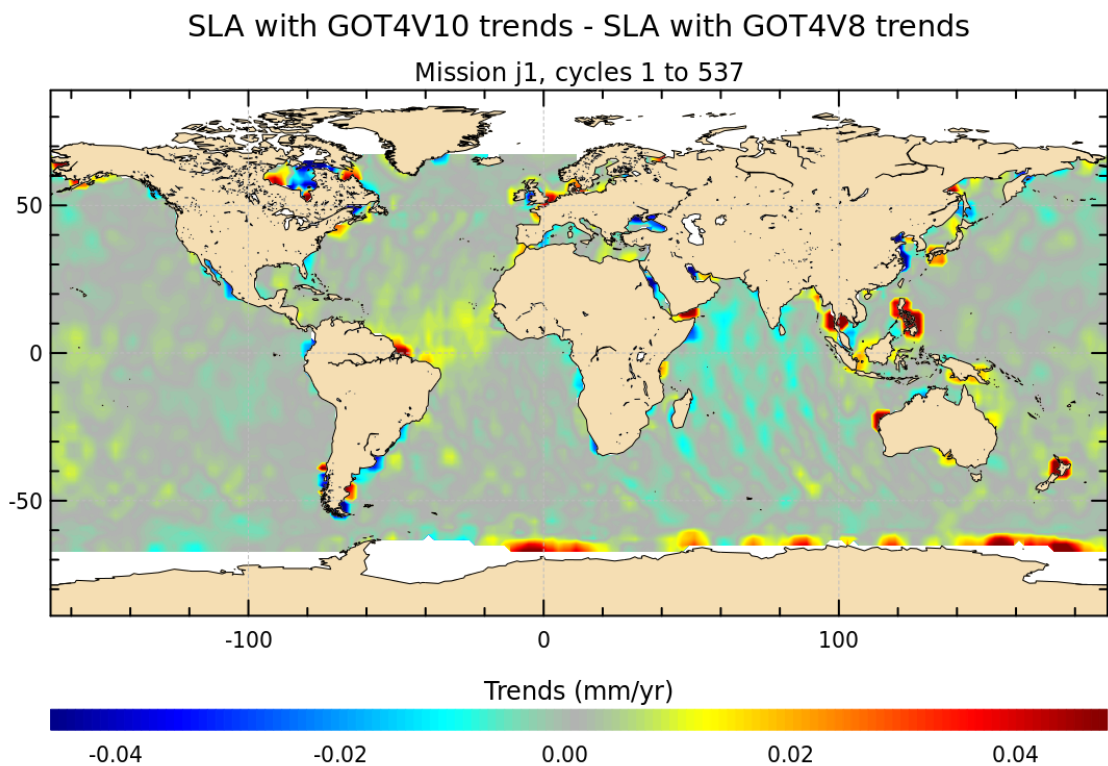
## Diagnostic A204\_a (mission j1)

**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



## Diagnostic A204\_b (mission j1)

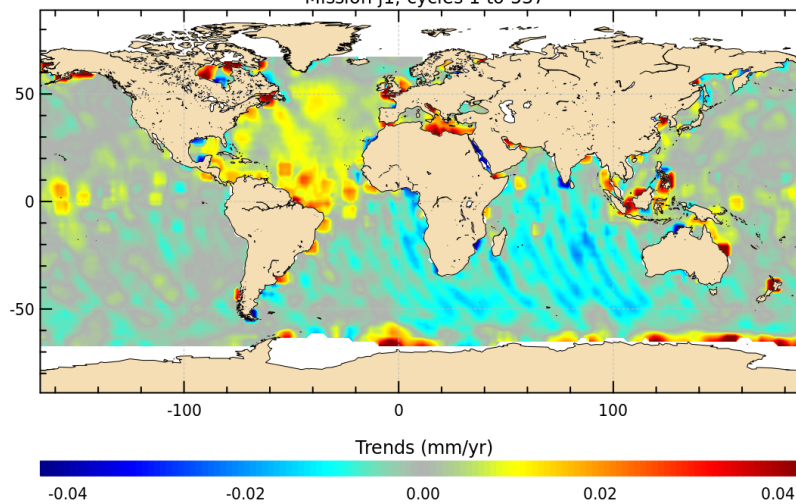
**Name :** Differences between maps of SLA trends

**Input data :** Along track SLA

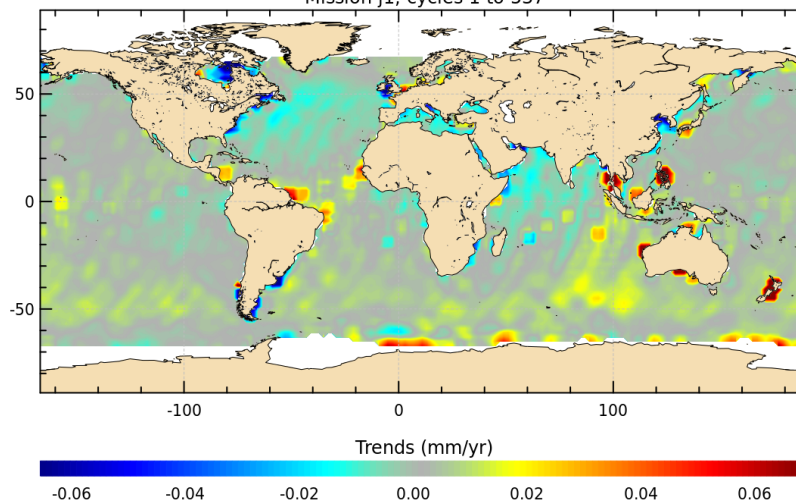
**Description :** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

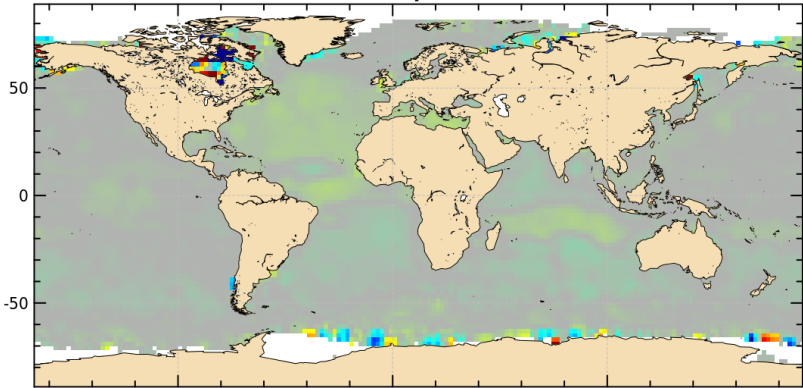
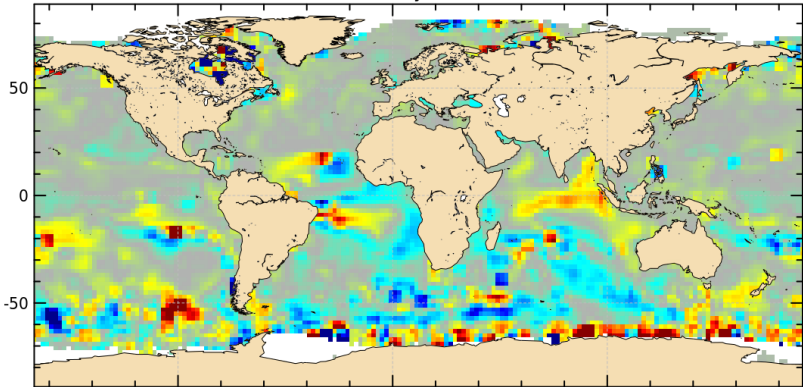
Diagnostic type : Mono-mission analyses

SLA with GOT4V10 trends - SLA with GOT4V8 trends : even pass number  
Mission j1, cycles 1 to 537



SLA with GOT4V10 trends - SLA with GOT4V8 trends : odd pass number  
Mission j1, cycles 1 to 537



Diagnostic type : Mono-mission analyses	Diagnostic A205_a (mission en)	
	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><div>A with GOT4V10 amplitude - SLA with GOT4V8 amplitude : annual sign Mission en, cycles 6 to 113</div><div></div><div>Amplitude (cm)</div><div><div>-0.2</div><div>0.0</div><div>0.2</div></div></div> <div><div>SLA with GOT4V10 phase - SLA with GOT4V8 phase : annual signal Mission en, cycles 6 to 113</div><div></div><div>Phase (degree)</div><div><div>-1.0</div><div>-0.5</div><div>0.0</div><div>0.5</div><div>1.0</div></div></div>	

## Diagnostic A205\_b (mission en)

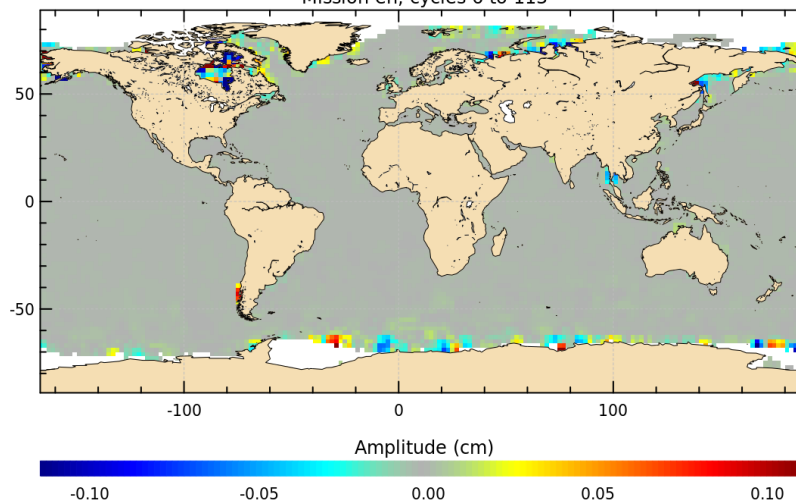
**Name :** Differences between maps of SLA amplitude and phase

**Input data :** Along track SLA

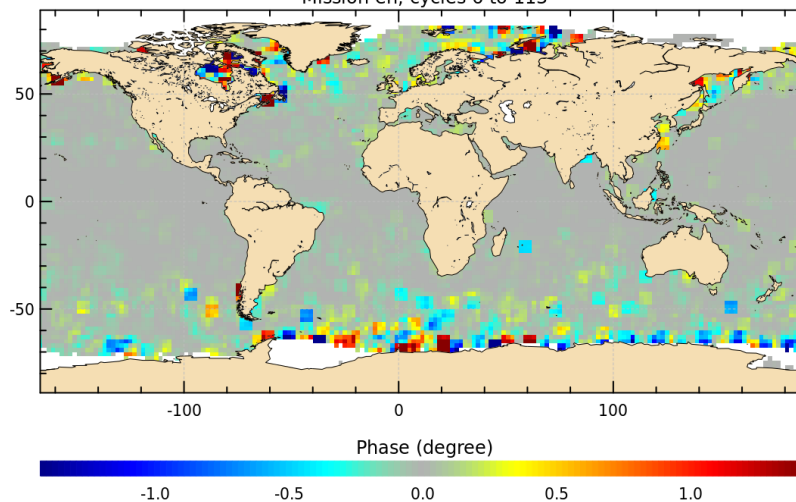
**Description :** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Mono-mission analyses

with GOT4V10 amplitude - SLA with GOT4V8 amplitude : semi-annual signal  
Mission en, cycles 6 to 113



SLA with GOT4V10 phase - SLA with GOT4V8 phase : semi-annual signal  
Mission en, cycles 6 to 113



# Diagnostic A205\_a (mission j1)

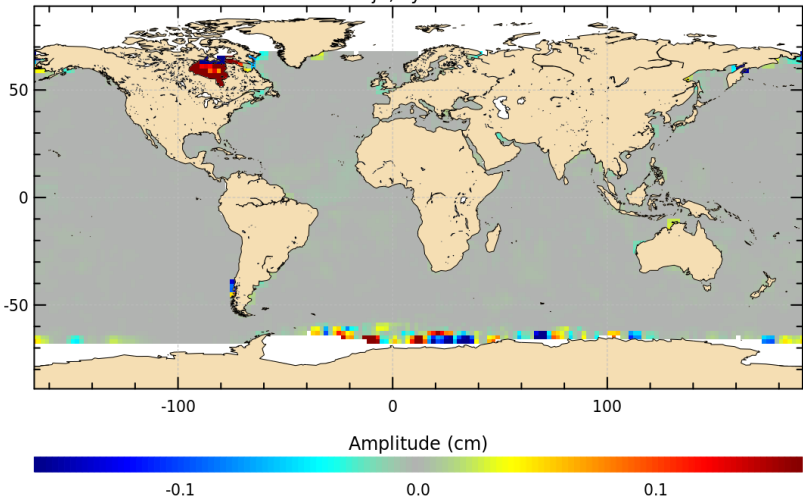
**Name :** Differences between maps of SLA amplitude and phase

**Input data :** Along track SLA

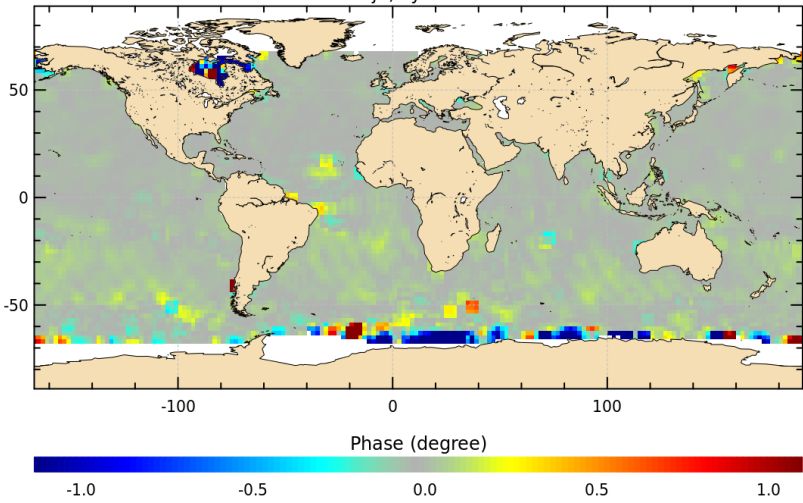
**Description :** The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Mono-mission analyses

A with GOT4V10 amplitude - SLA with GOT4V8 amplitude : annual sign  
Mission j1, cycles 1 to 537



SLA with GOT4V10 phase - SLA with GOT4V8 phase : annual signal  
Mission j1, cycles 1 to 537



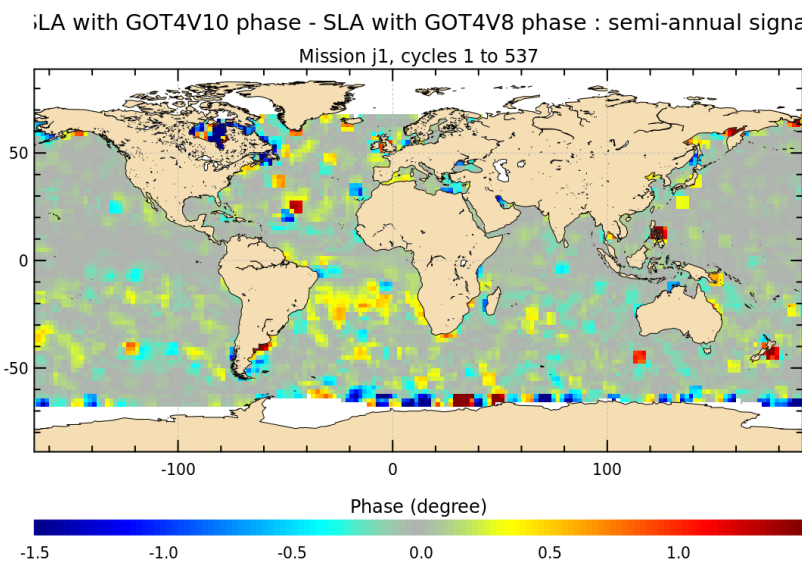
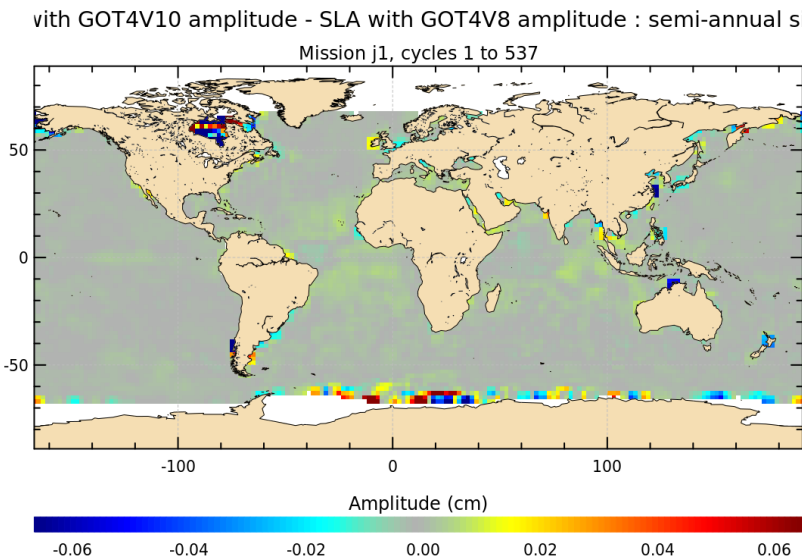
## Diagnostic A205\_b (mission j1)

**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



Diagnostic A206_a (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.	
<div>Periodogram of SLA (reference period = 1 year)</div> <div>Mission en, cycles 6 to 113</div> <p>This plot shows the amplitude of SLA in centimeters versus the period in days. The x-axis ranges from 300 to 450 days, and the y-axis ranges from 0.0 to 0.6 cm. Two data series are shown: 'SLA with GOT4V10' (red line with square markers) and 'SLA with GOT4V8' (blue line with triangle markers). Both series follow a similar curve, peaking at approximately 0.7 cm at a period of about 370 days. A vertical green line is drawn at 365 days, labeled '1 year'.</p> <div>Periodogram of SLA (period = [0, 1 year])</div> <div>Mission en, cycles 6 to 113</div> <p>This plot shows the amplitude of SLA in centimeters versus the period in days. The x-axis ranges from 0 to 350 days, and the y-axis ranges from 0.0 to 0.6 cm. Two data series are shown: 'SLA with GOT4V10' (red line with square markers) and 'SLA with GOT4V8' (blue line with triangle markers). The plot shows several small peaks, with the most prominent one reaching about 0.7 cm at a period of 365 days.</p>	

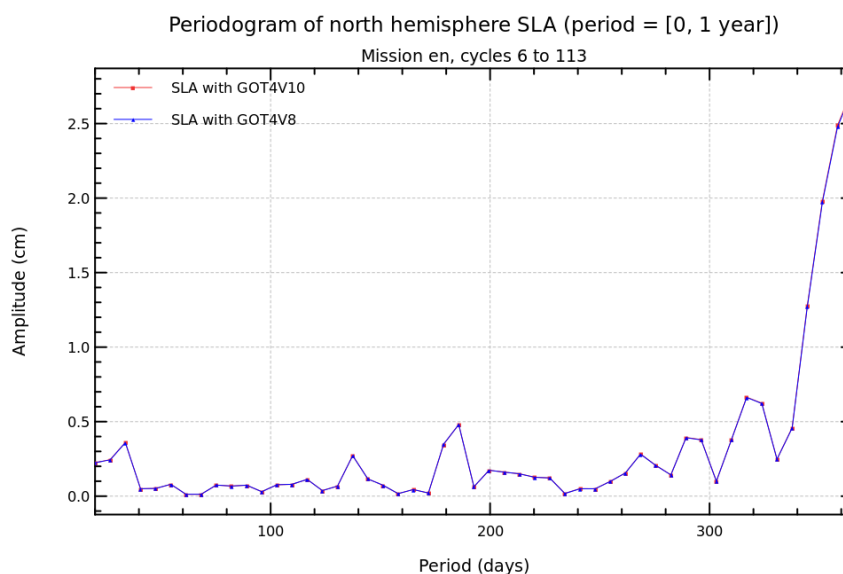
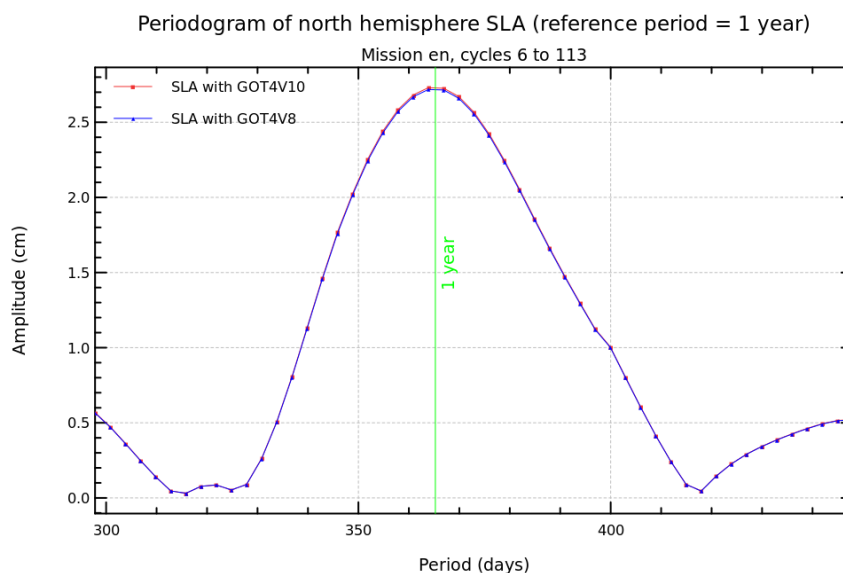
## Diagnostic A206\_b (mission en)

**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.

Diagnostic type : Mono-mission analyses



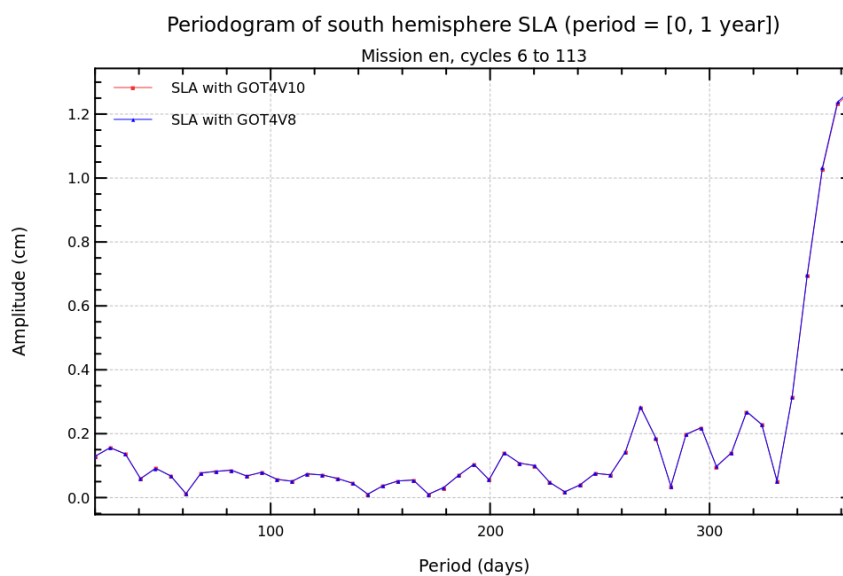
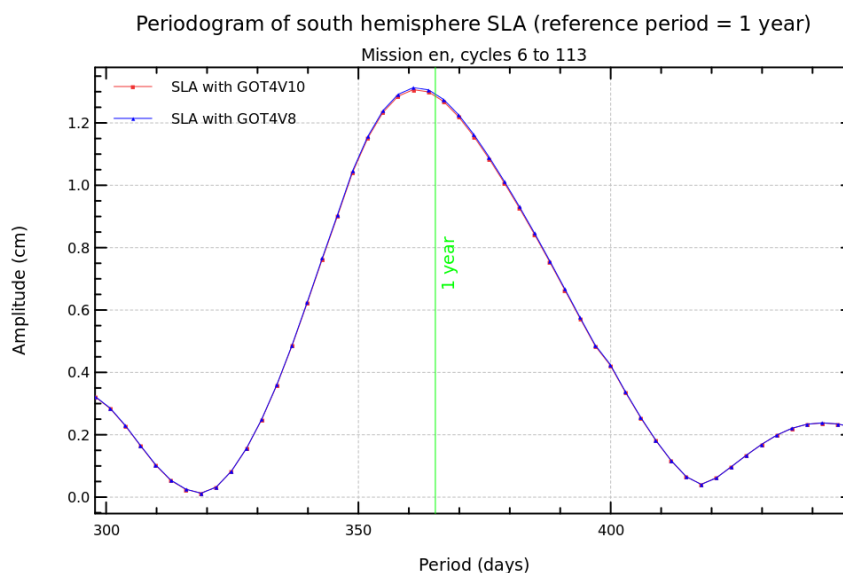
## Diagnostic A206\_c (mission en)

**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.

Diagnostic type : Mono-mission analyses



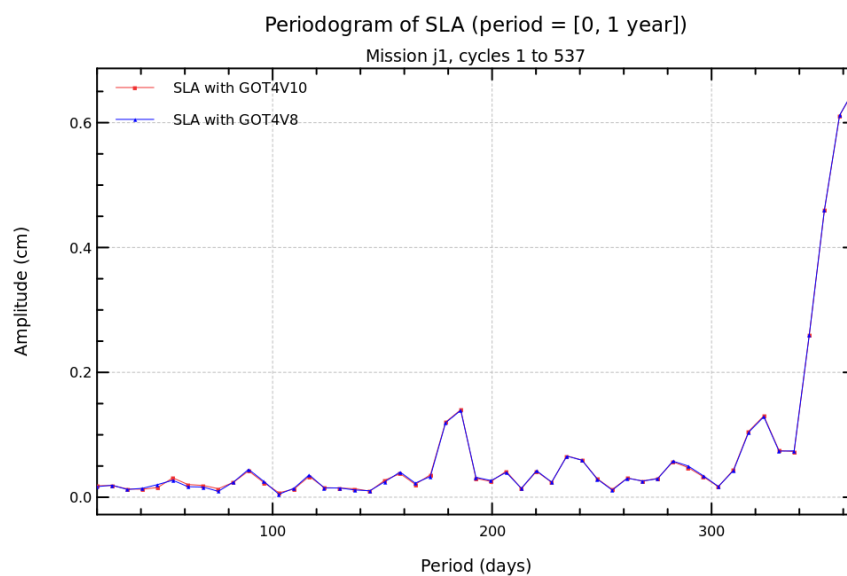
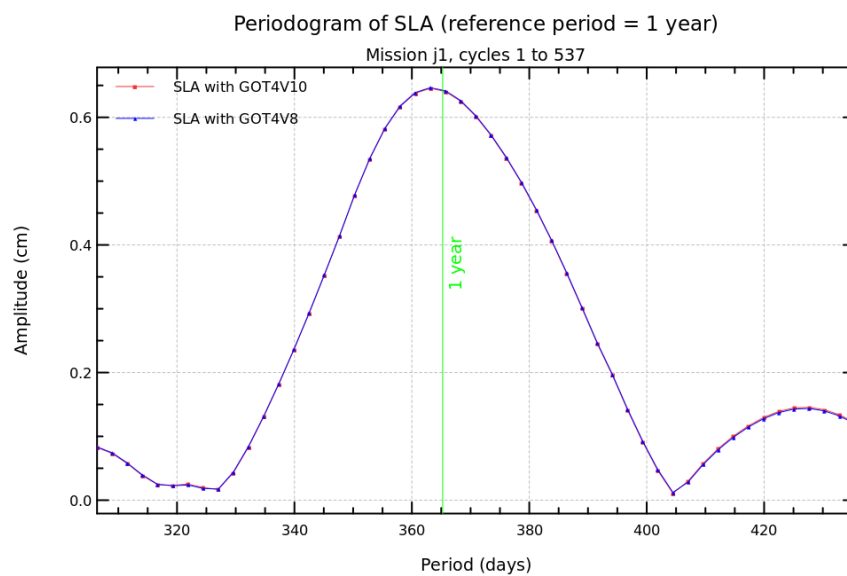
## Diagnostic A206\_a (mission j1)

**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.

Diagnostic type : Mono-mission analyses



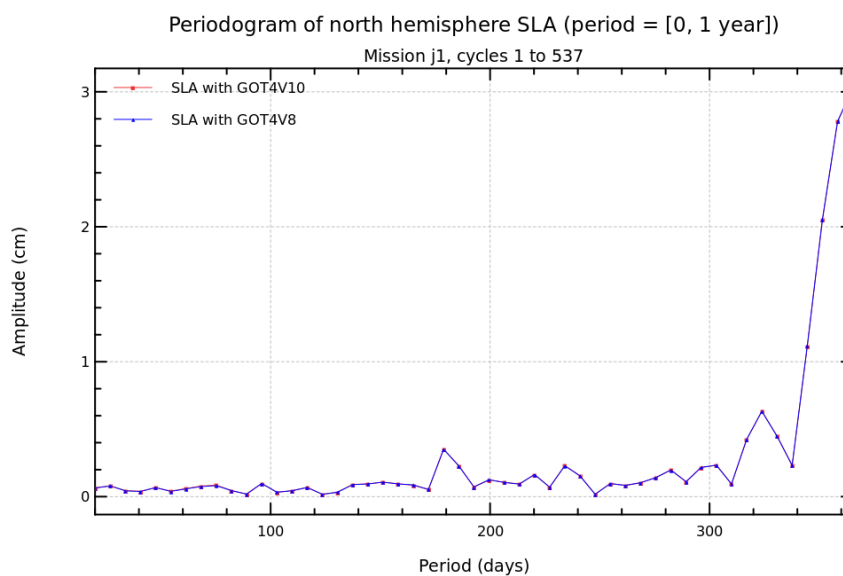
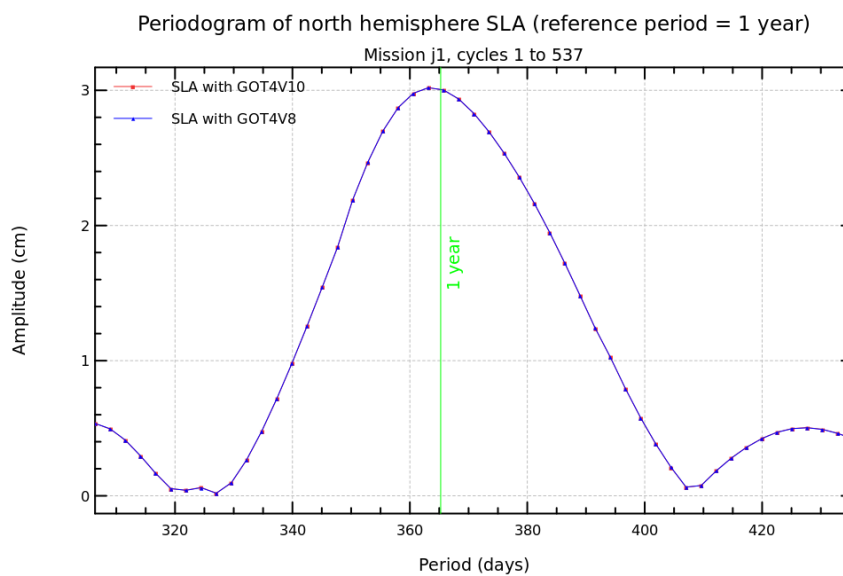
## Diagnostic A206\_b (mission j1)

**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.

Diagnostic type : Mono-mission analyses



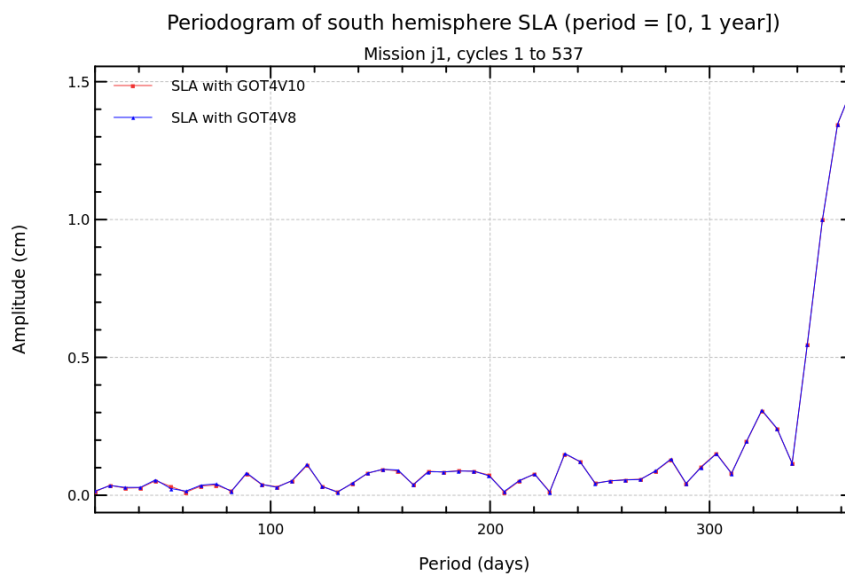
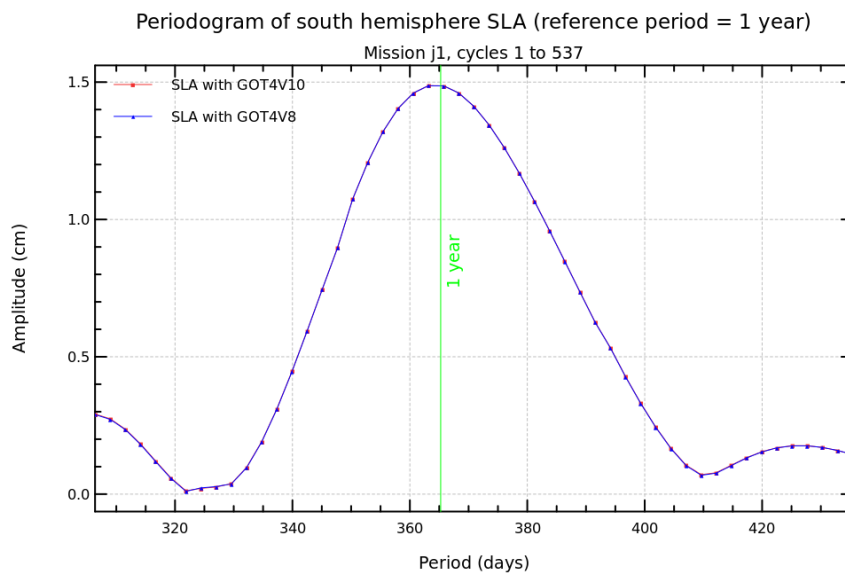
## Diagnostic A206\_c (mission j1)

**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.

Diagnostic type : Mono-mission analyses



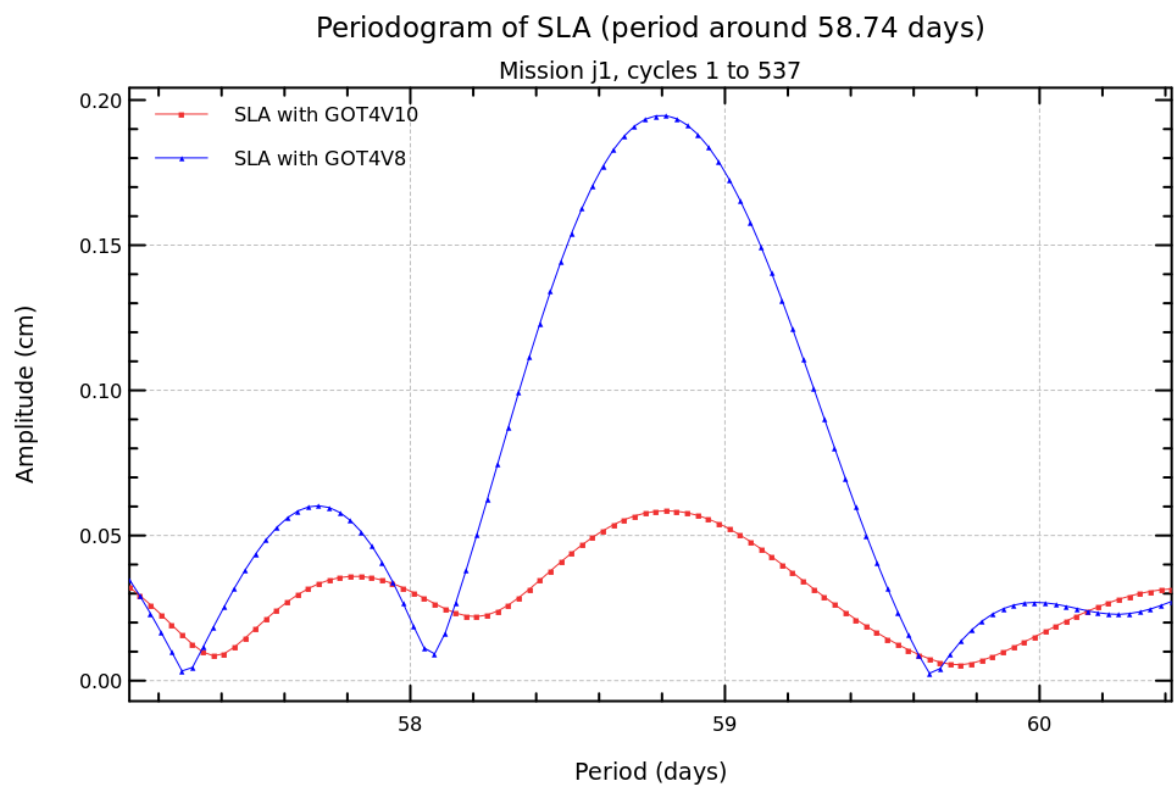
## Diagnostic A206\_d (mission j1)

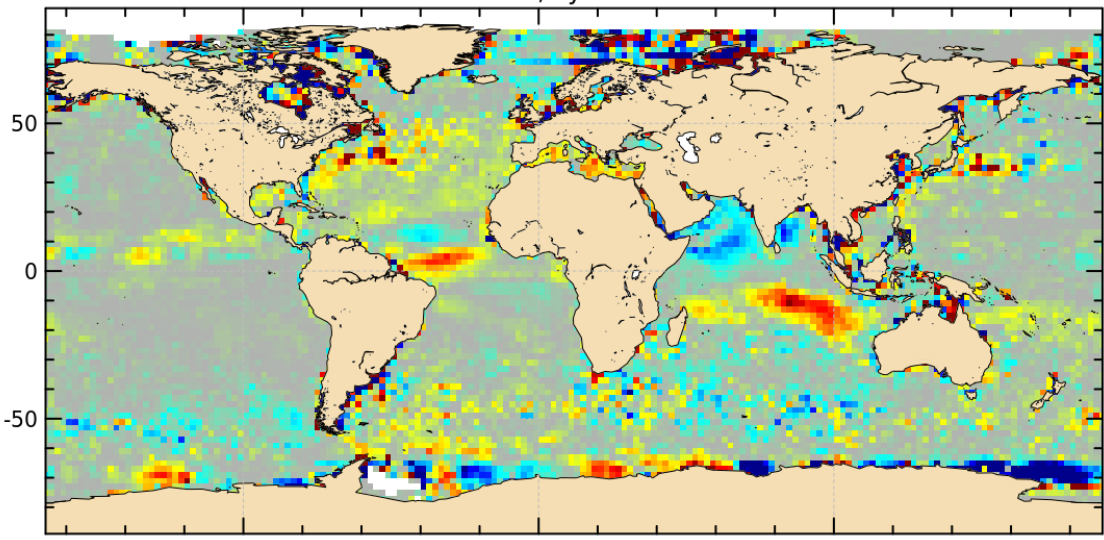
**Name :** Periodogram derived from temporal evolution of Sea Level Anomaly (SLA)

**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.

Diagnostic type : Mono-mission analyses



Diagnostic type : Mono-mission analyses	Diagnostic A209 (mission en)	
	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>VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8)</div> <div>Mission en, cycles 6 to 113</div>  <div>Difference of variances (cm<sup>2</sup>)</div> <div><div></div><div>-0.4</div><div>-0.2</div><div>0.0</div><div>0.2</div><div>0.4</div></div>	

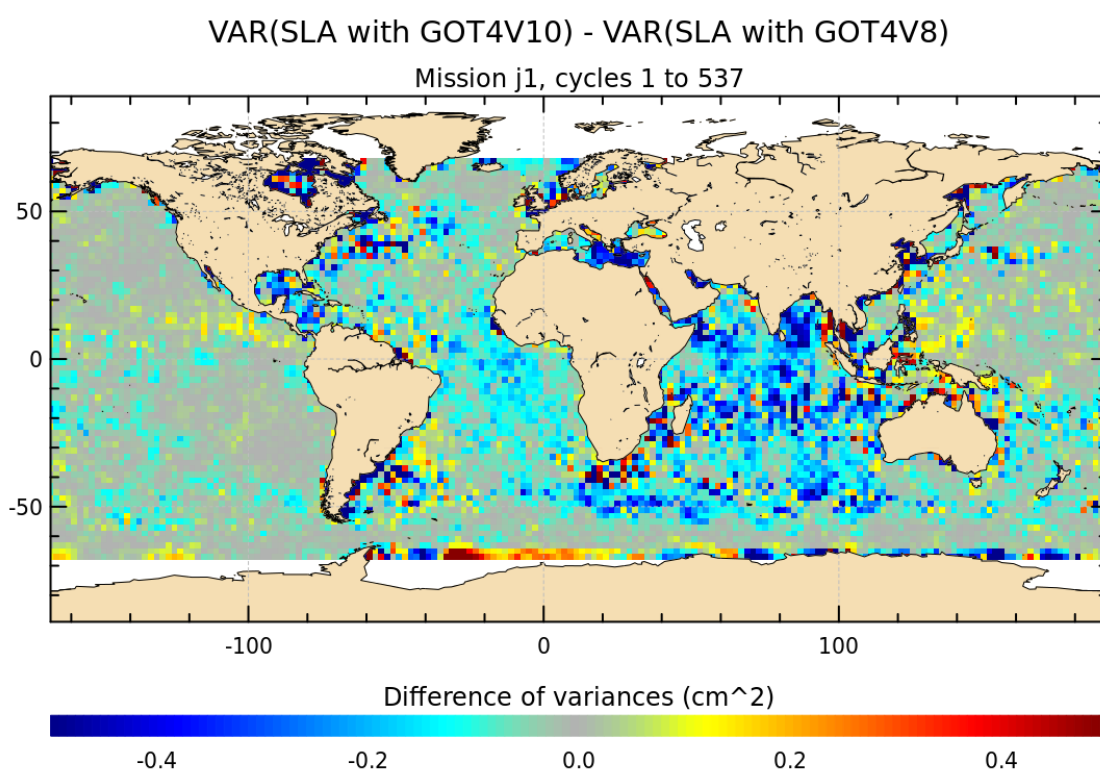
## Diagnostic A209 (mission j1)

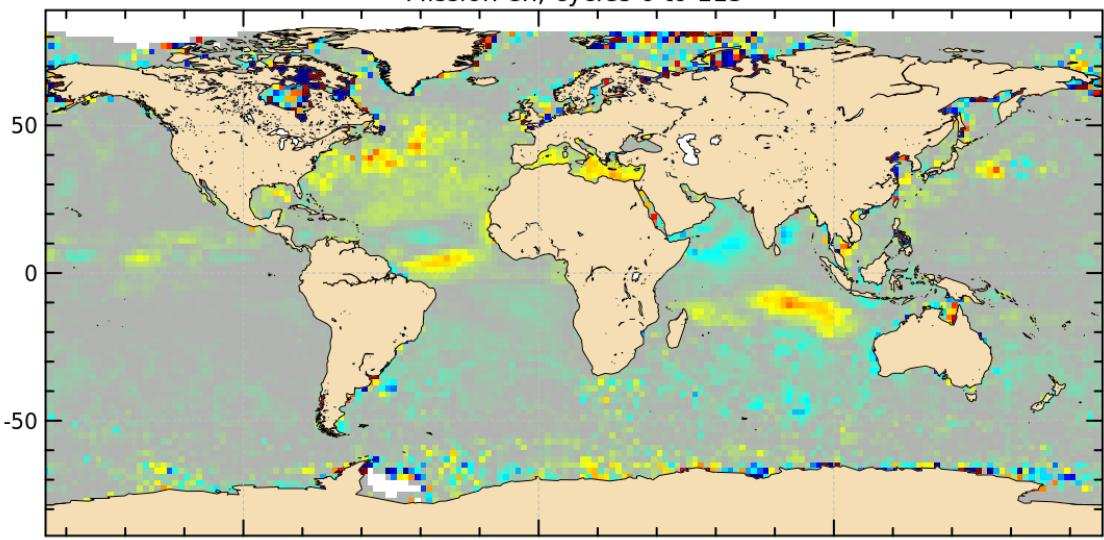
**Name :** Differences between maps of SLA variance

**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.

Diagnostic type : Mono-mission analyses



Diagnostic type : Mono-mission analyses	<b>Diagnostic A210_a (mission en)</b>
	<b>Name :</b> Differences between maps of SLA variance for different frequency bands
	<b>Input data :</b> Along track SLA
	<b>Description :</b> 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><p>VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8) for FILTER HF</p><p>Mission en, cycles 6 to 113</p><p>Difference of variances HF (<math>\text{cm}^2</math>)</p><p>-0.4      -0.2      0.0      0.2      0.4</p></div>

## Diagnostic A210\_b (mission en)

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

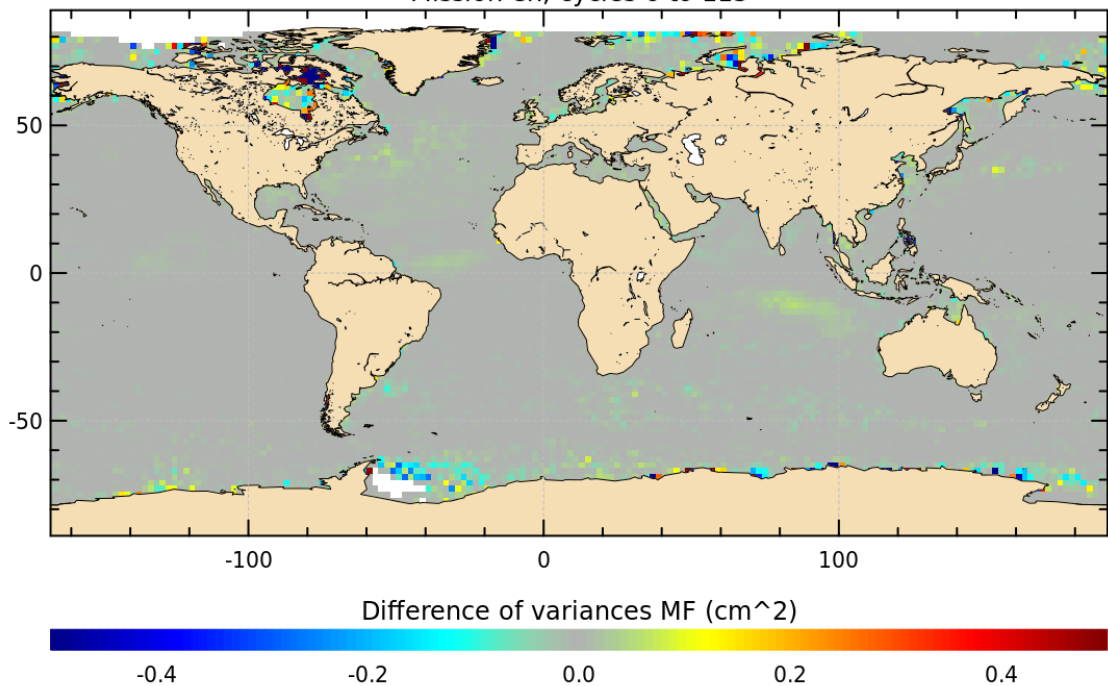
**Input data :** Along track SLA

**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

VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8) for FILTER MF

Mission en, cycles 6 to 113



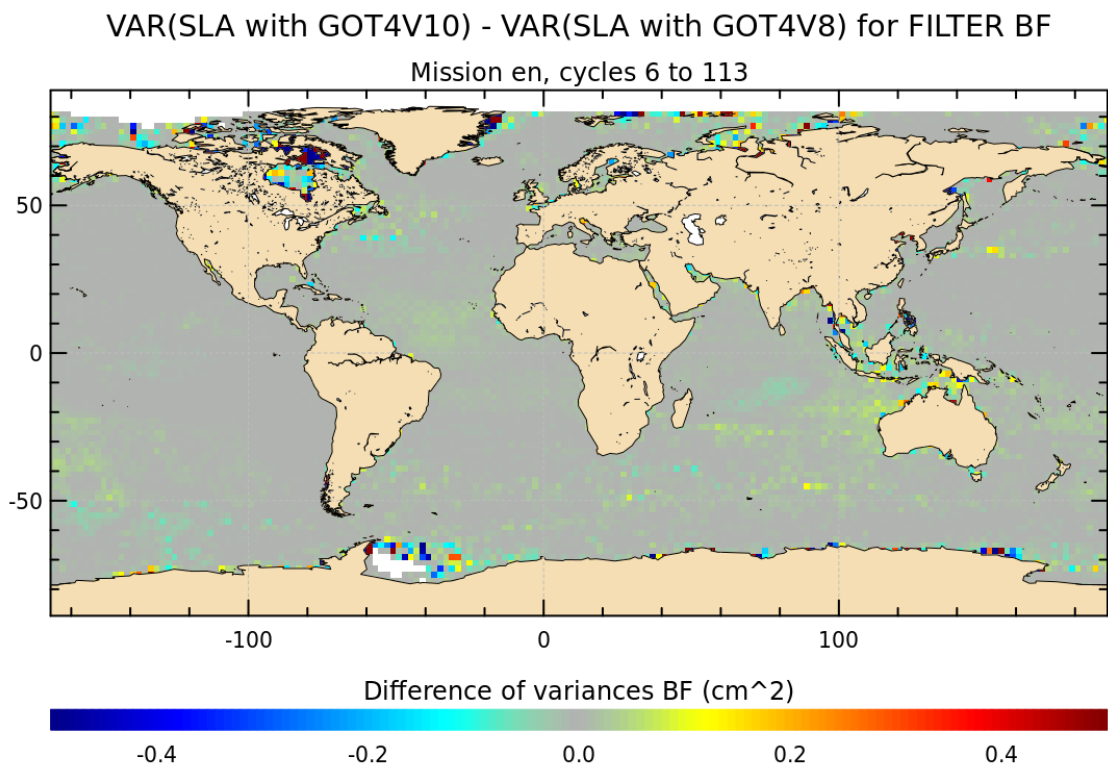
## Diagnostic A210\_c (mission en)

**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\_a (mission j1)

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

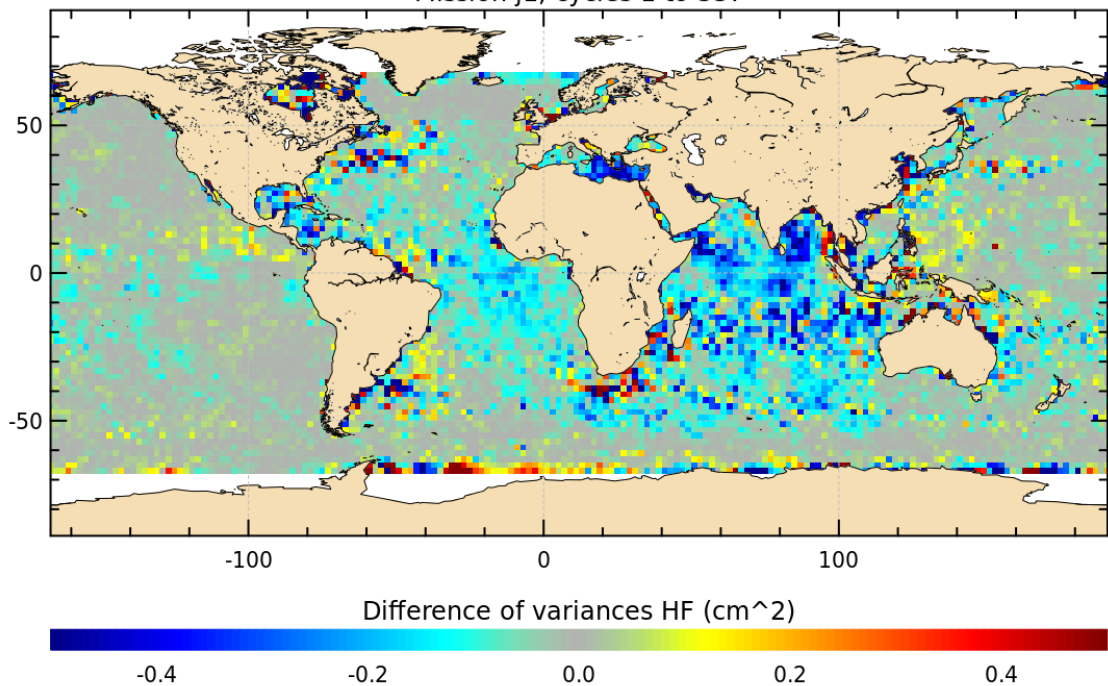
**Input data :** Along track SLA

**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

VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8) for FILTER HF

Mission j1, cycles 1 to 537



## Diagnostic A210\_b (mission j1)

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

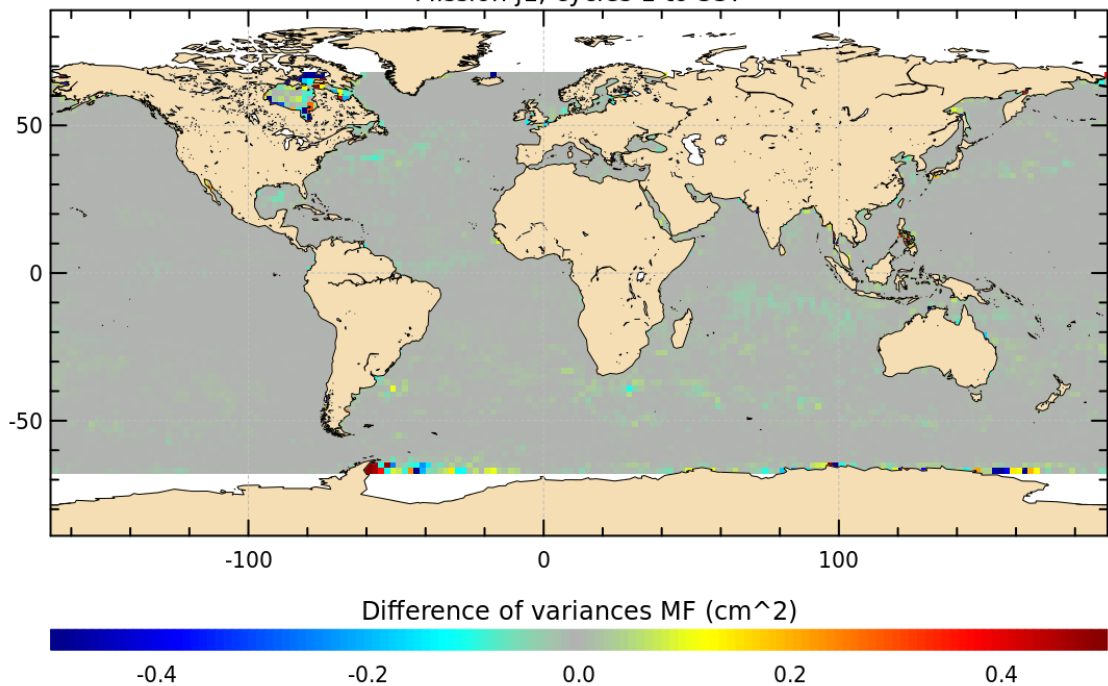
**Input data :** Along track SLA

**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

VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8) for FILTER MF

Mission j1, cycles 1 to 537



## Diagnostic A210\_c (mission j1)

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

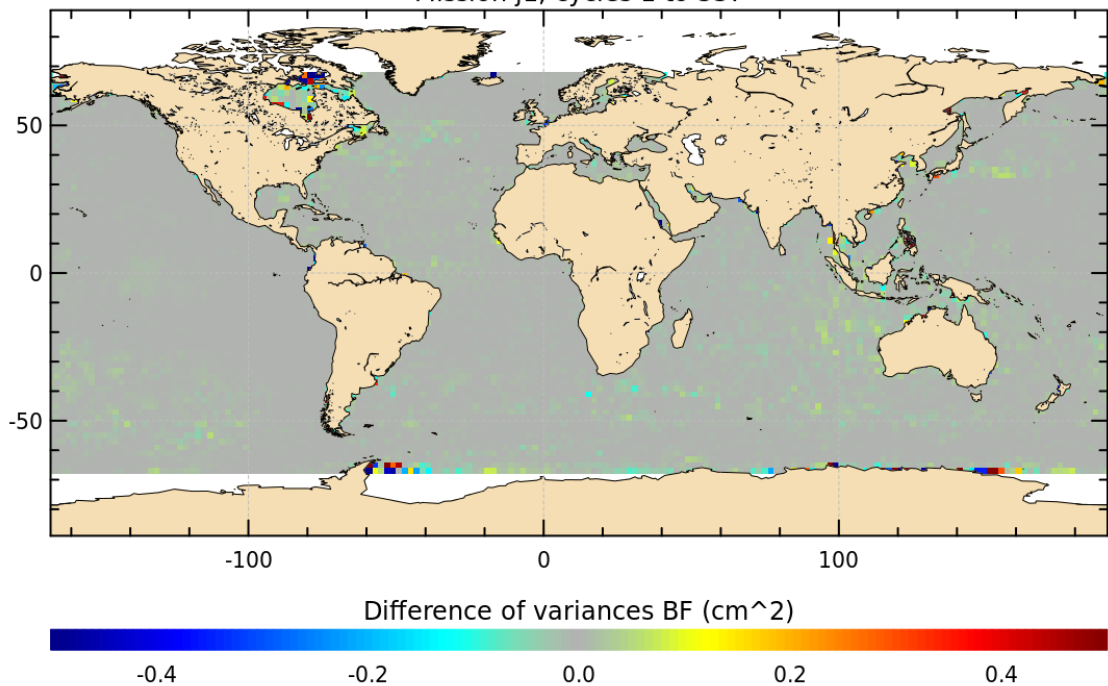
**Input data :** Along track SLA

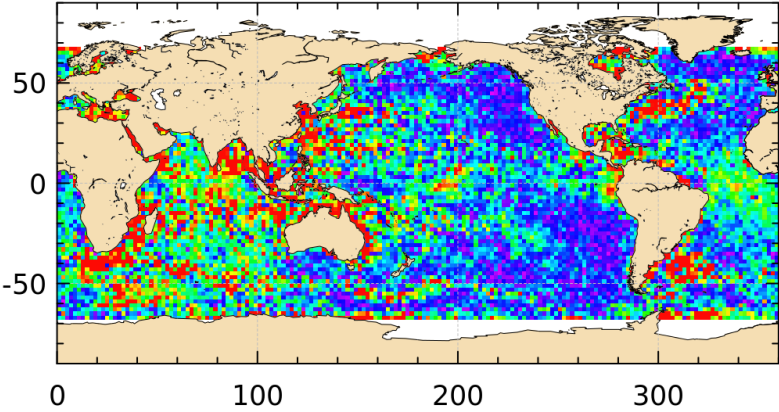
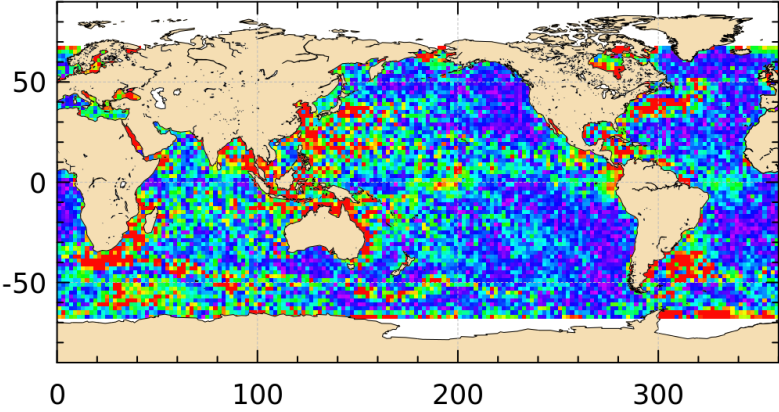
**Description :** The differences between maps of SLA (variance) are calculated from the mean SLA maps using successively both altimetric components in the SLA calculation filtered to separate high-frequency ( $T < 1$  yr), mid-frequency ( $1 \text{ yr} < T < 3$  yrs) and low-frequency ( $T > 3$  yrs)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

Diagnostic type : Mono-mission analyses

VAR(SLA with GOT4V10) - VAR(SLA with GOT4V8) for FILTER BF

Mission j1, cycles 1 to 537



Diagnostic type :	Diagnostics complementaires (mission j1)	
	Name : Map of residual signal for SLA (around period of 58.74 days)	
	Input data :	
	Description :	
	<div><p>  SLA(GOT4V8 J1)58.74days   </p><p>58.74-day amplitude (cm)</p><p>0.0 0.2 0.4 0.6 0.8 1.0</p></div> <div><p>  SLA(GOT4V10 J1)58.74days   </p><p>58.74-day amplitude (cm)</p><p>0.0 0.2 0.4 0.6 0.8 1.0</p></div>	

## Diagnostics complementaires (mission j1)

**Name :** Map of residual signal for SLA (around period of 58.74 days)

**Input data :**

**Description :**

Diagnostic type :

