

Tidal models comparison : TPXO72 versus GOT4V7

Study variable	TPXO72 Tidal Model
Reference variable	GOT4V7 Tidal Model
Missions	Envisat (<i>en</i>), Jason-1 (<i>j1</i>)
Period	[19007, 22280]

Creation date : 2011/09/09

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Study overview

In this study, the tide model TPXO7.2 has been compared to the model GOT 4.7 for high latitudes ($>50^{\circ}\text{N}$).

The TPXO7.2 tide model is produced by Egbert et al., 2002; (see <http://volkov.oce.orst.edu/tides/global.html>). This model takes into account tide gauges data along the Russian coast. As this model does not include any load tide data, load tide effects from the FES2004 model had been used.

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.

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

- for Jason-1 : from January 2002 (cycle 1) to December 2010 (Cycle 330)
- for Envisat : from September 2002 (cycle 10) to October 2010 (Cycle 93)

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

Diagnostic A001 (mission en)	
Name : Temporal evolution of differences between both altimetric components	
Input data : Along-track altimetric components	
Description : The temporal evolution of global statistics (mean, variance, slope) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) . These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.	
<div><div><div>Mean of TPX072 - GOT4V7 Mission en, cycles 9 to 94</div><div><div>20406080</div><div>Mean = -0.12Slope = 0.0427 mm/yr</div><div>0.50.0-0.5</div><div>2004200620082010</div></div></div><div><div>Standard deviation of TPX072 - GOT4V7 Mission en, cycles 9 to 94</div><div><div>20406080</div><div>Mean = 12.29</div><div>1413121110</div><div>2004200620082010</div></div></div></div>	

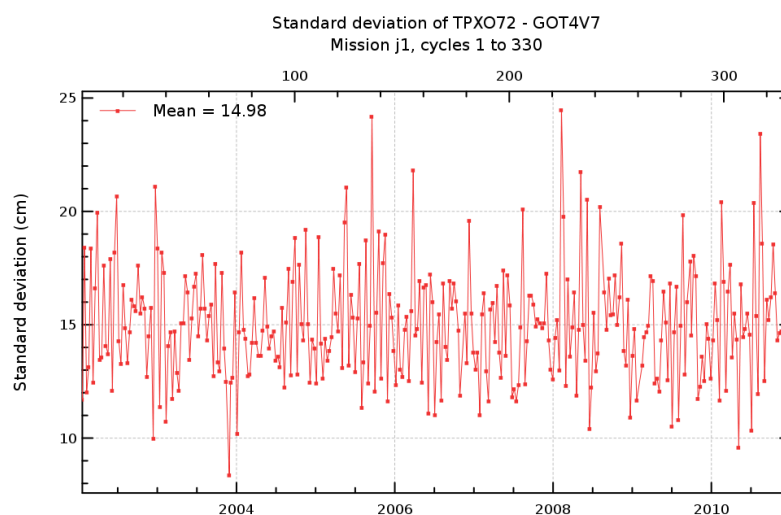
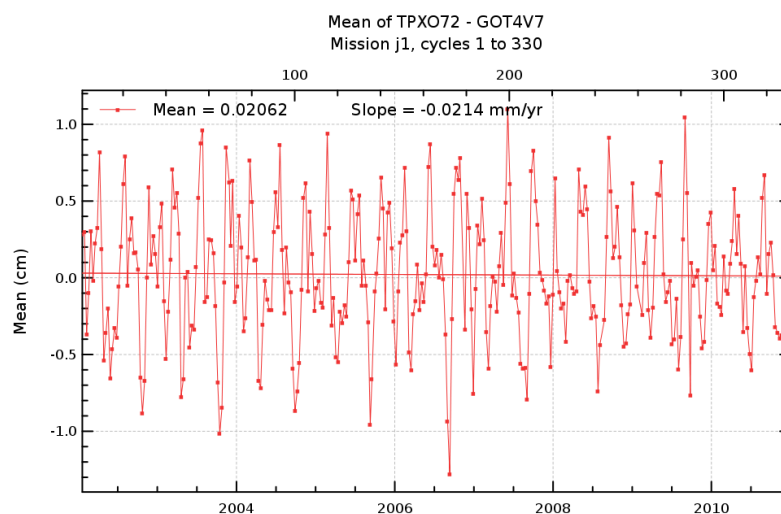
Diagnostic A001 (mission j1)

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 : Global internal analyses

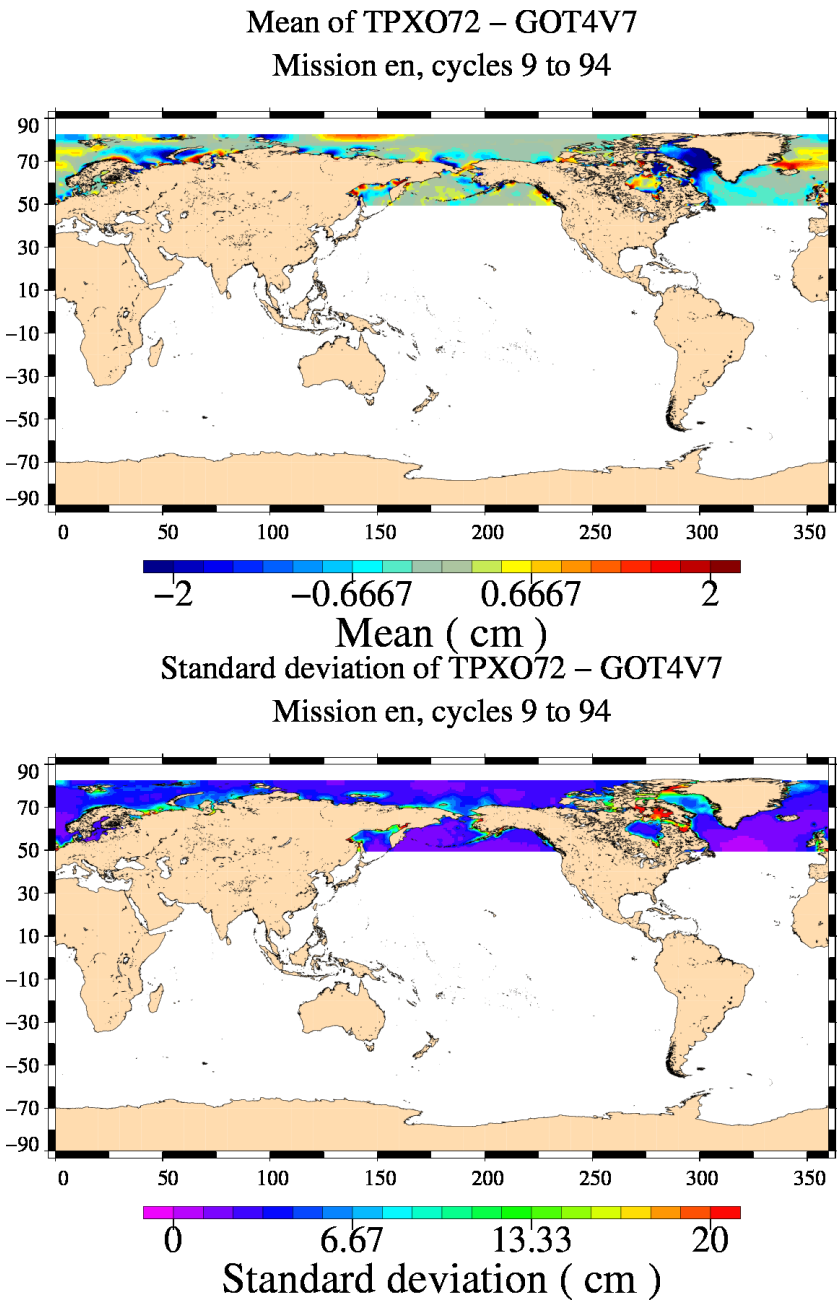


Diagnostic A002_a (mission en)

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.



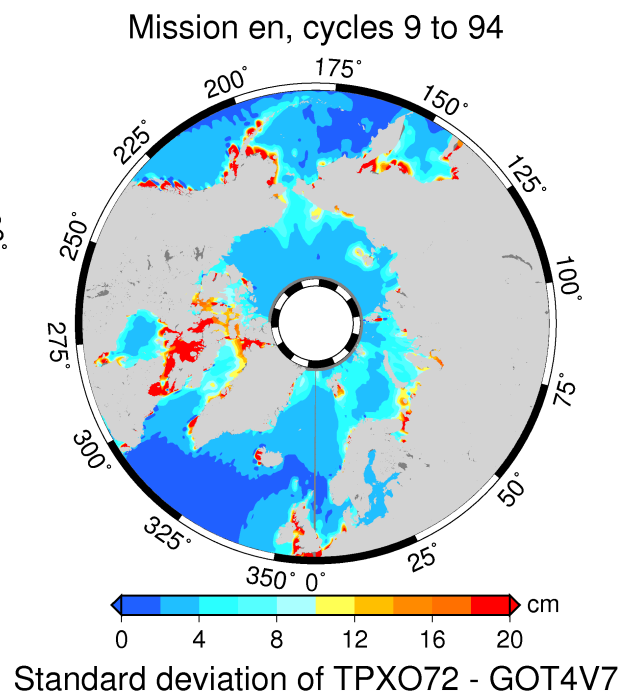
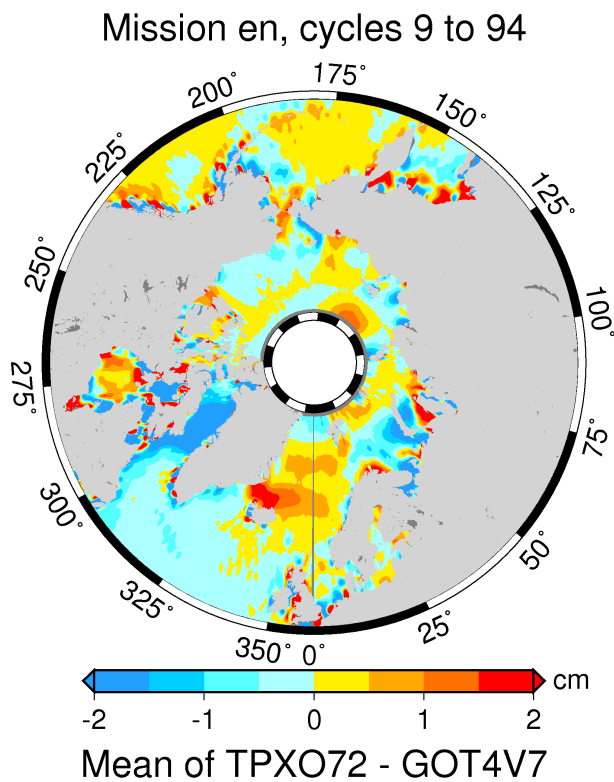
Diagnostic A002_b (mission en)

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.

Diagnostic type : Global internal analyses



Diagnostic A002_a (mission j1)

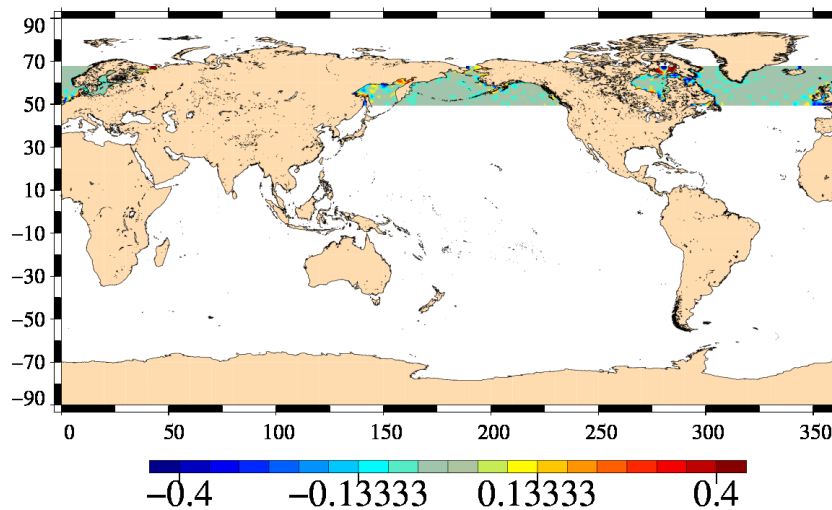
Name : Map of differences between both altimetric components over all the period

Input data : Along-track altimetric components

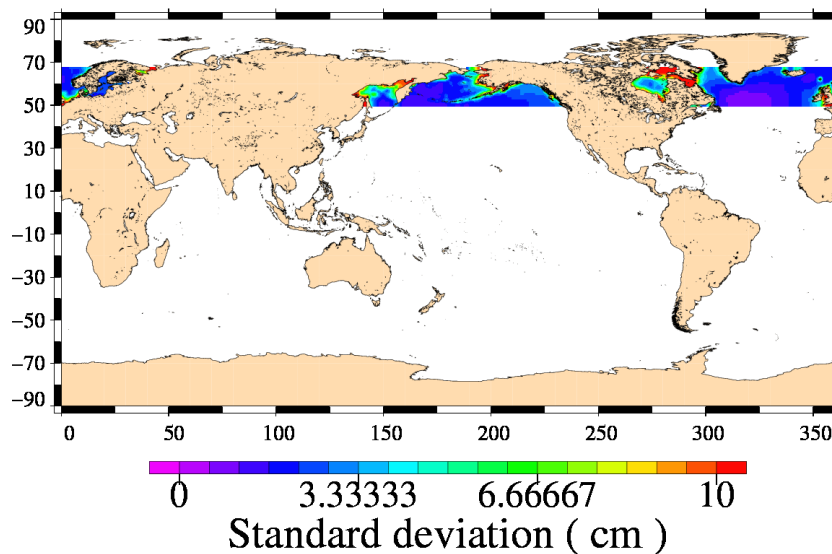
Description : The map of global statistics (mean, standard deviation) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated over a given period which is the longer as possible to have obtain reliable statically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

Diagnostic type : Global internal analyses

Mean of TPX072 – GOT4V7
Mission j1, cycles 1 to 330



Standard deviation of TPX072 – GOT4V7
Mission j1, cycles 1 to 330



Diagnostic A002_b (mission j1)

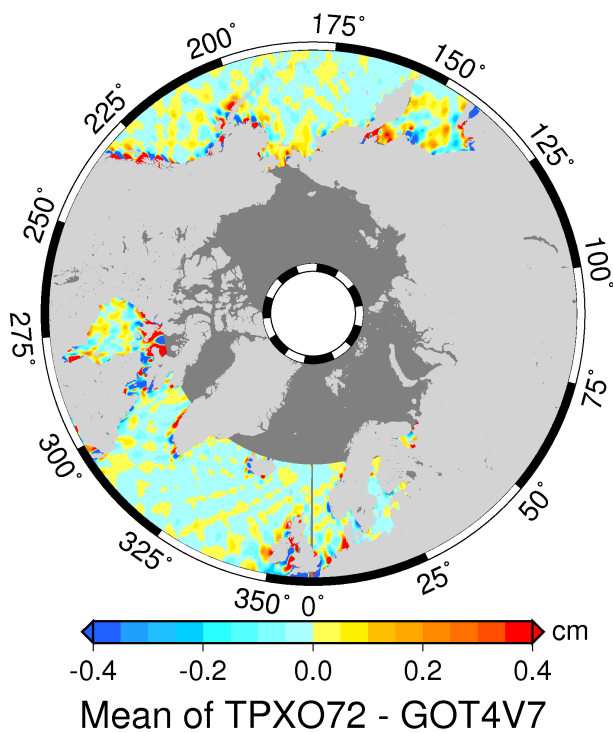
Name : Map of differences between both altimetric components over all the period

Input data : Along-track altimetric components

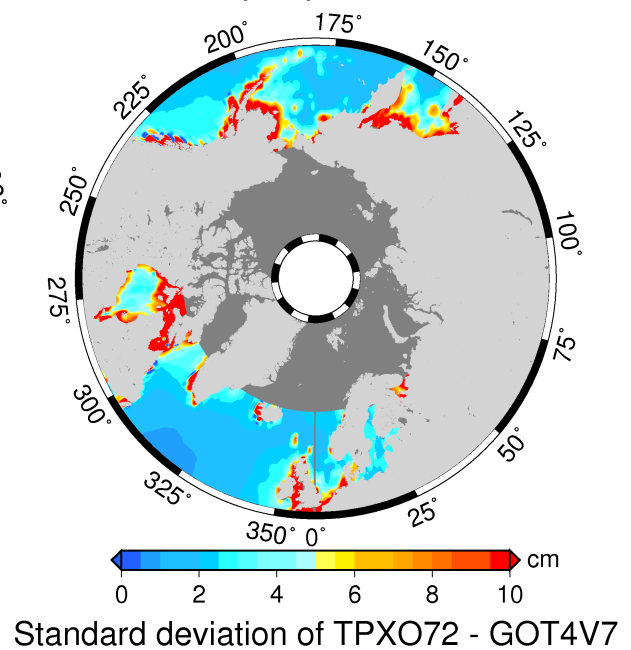
Description : The map of global statistics (mean, standard deviation) of differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are calculated over a given period which is the longer as possible to have obtain reliable statically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

Diagnostic type : Global internal analyses

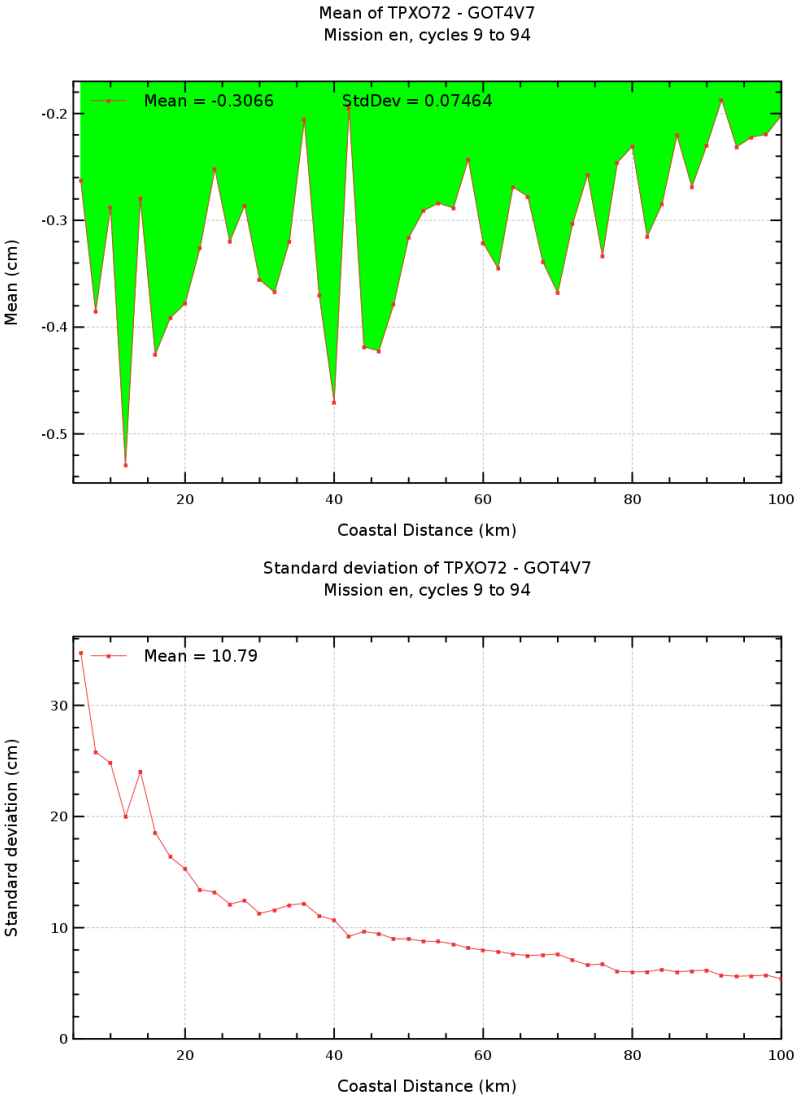
Mission j1, cycles 1 to 330



Mission j1, cycles 1 to 330



Diagnostic A004 (mission en)	
Name : Altimetric component differences versus coastal distances	
Input data : Along-track altimetric components	
Description : Mean and standard deviation of the differences between 2 different standards of a same altimetric component (sea surface height correction, altimeter parameter, orbit) are computed and plotted in function of coastal distances between 0 and 100 km.	



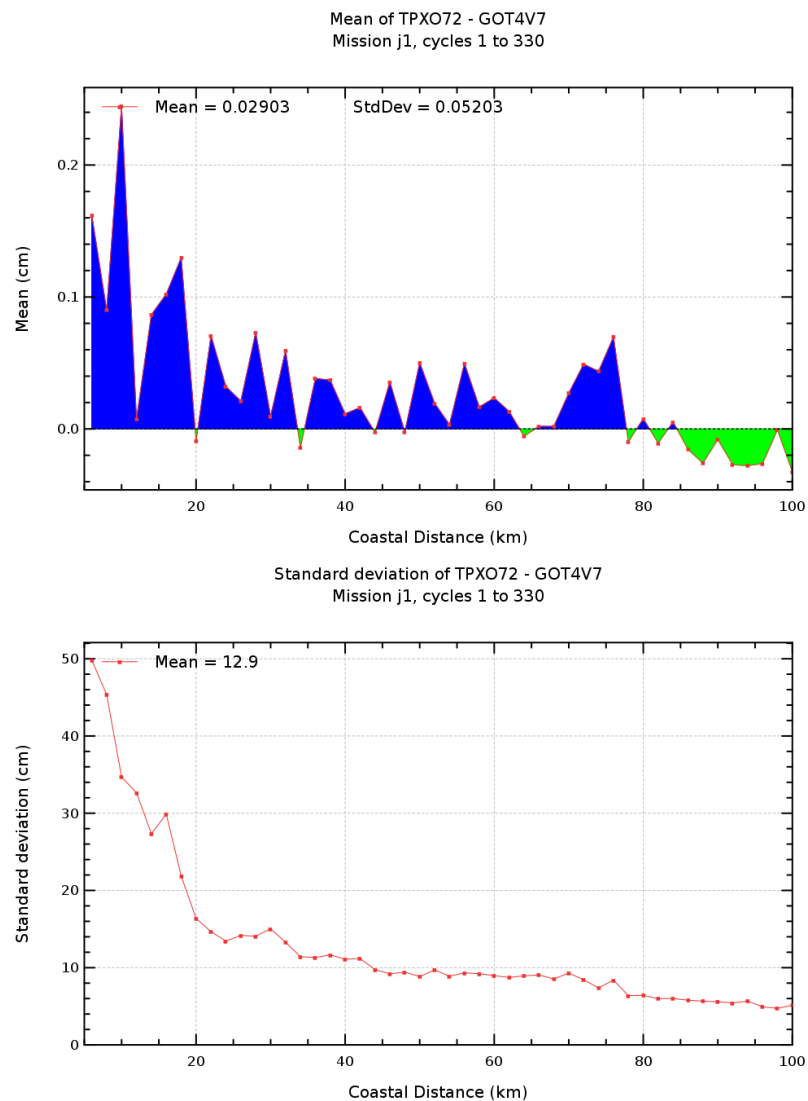
Diagnostic A004 (mission j1)

Name : Altimetric component differences versus coastal distances

Input data : Along-track altimetric components

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

Diagnostic type : Global internal analyses



Diagnostic A101 (mission en)	
Name : Temporal evolution of SSH crossovers	
Input data : Sea Surface Height (SSH) crossovers	
<p>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).</p>	
<div><div><div>Mean of SSH crossovers Mission en, cycles 9 to 94</div><div><div>2004200620082010</div><div>SSH with TPX072 SSH with GOT4V7</div><div>Mean = 0.538 Mean = -0.07799</div><div>Mean (cm)</div></div></div><div><div>Standard deviations of SSH crossovers Mission en, cycles 9 to 94</div><div><div>2004200620082010</div><div>SSH with TPX072 SSH with GOT4V7</div><div>Mean = 8.966 Mean = 8.416</div><div>Standard deviation (cm)</div></div></div></div>	

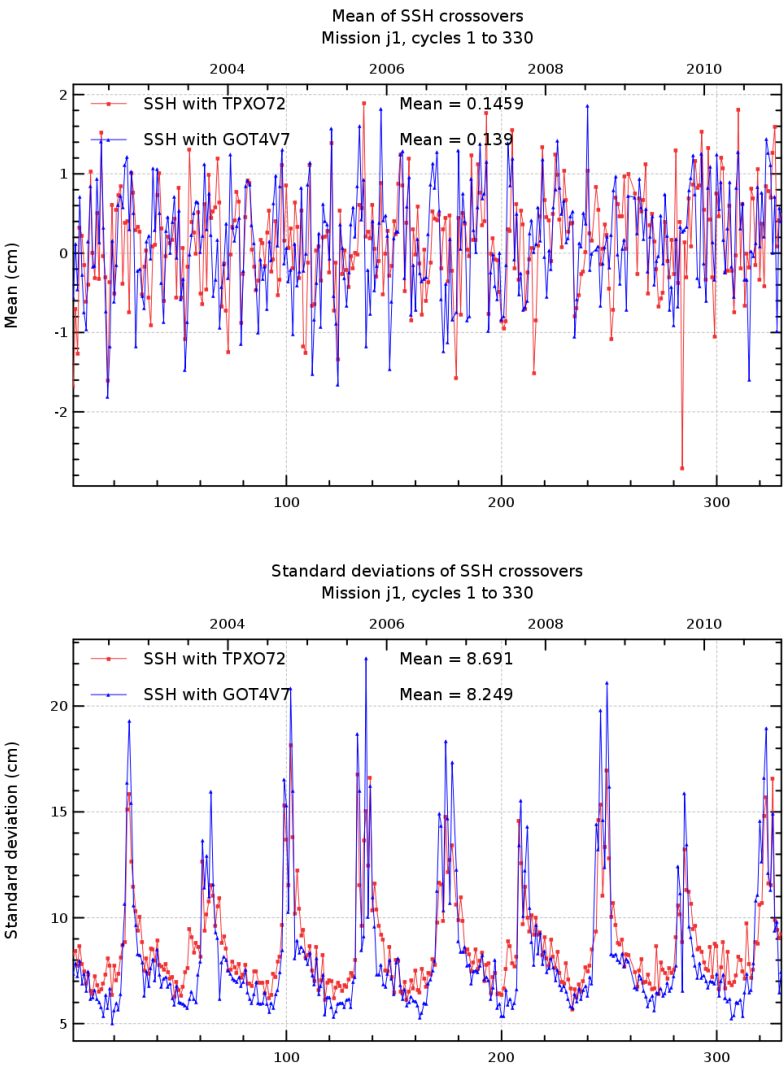
Diagnostic A101 (mission j1)

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 : Global internal analyses



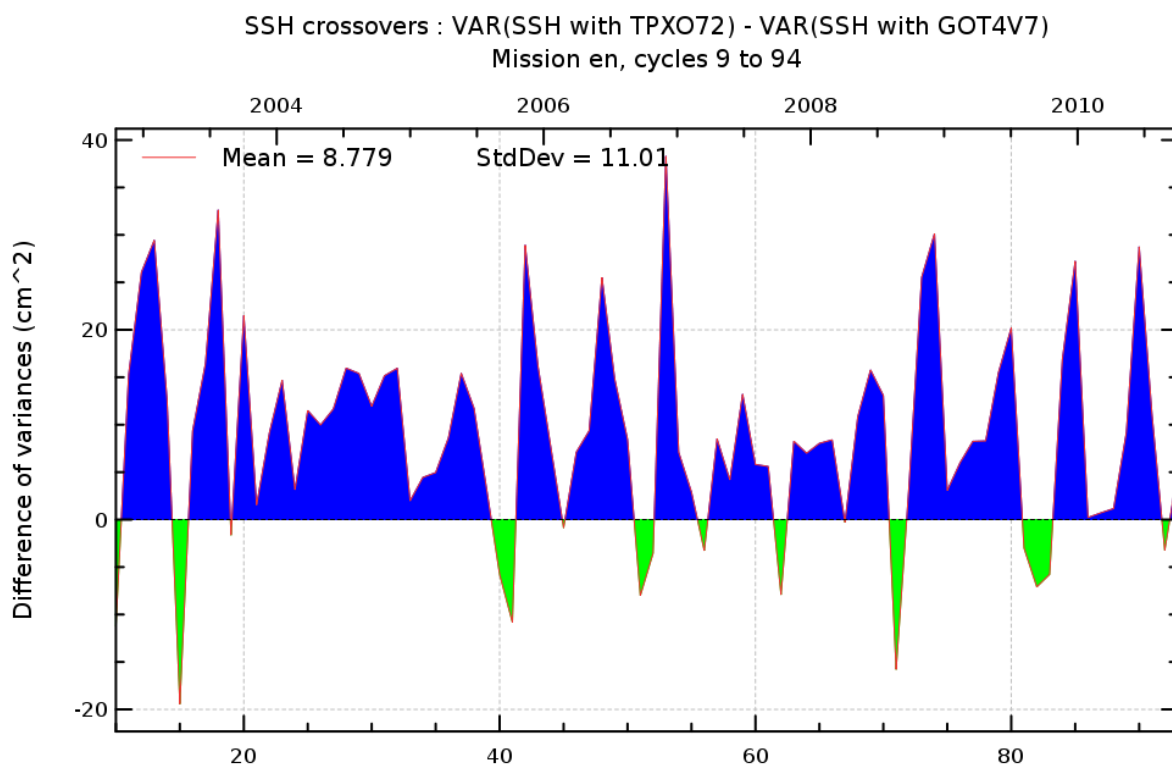
Diagnostic A102 (mission en)

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 : Global internal analyses



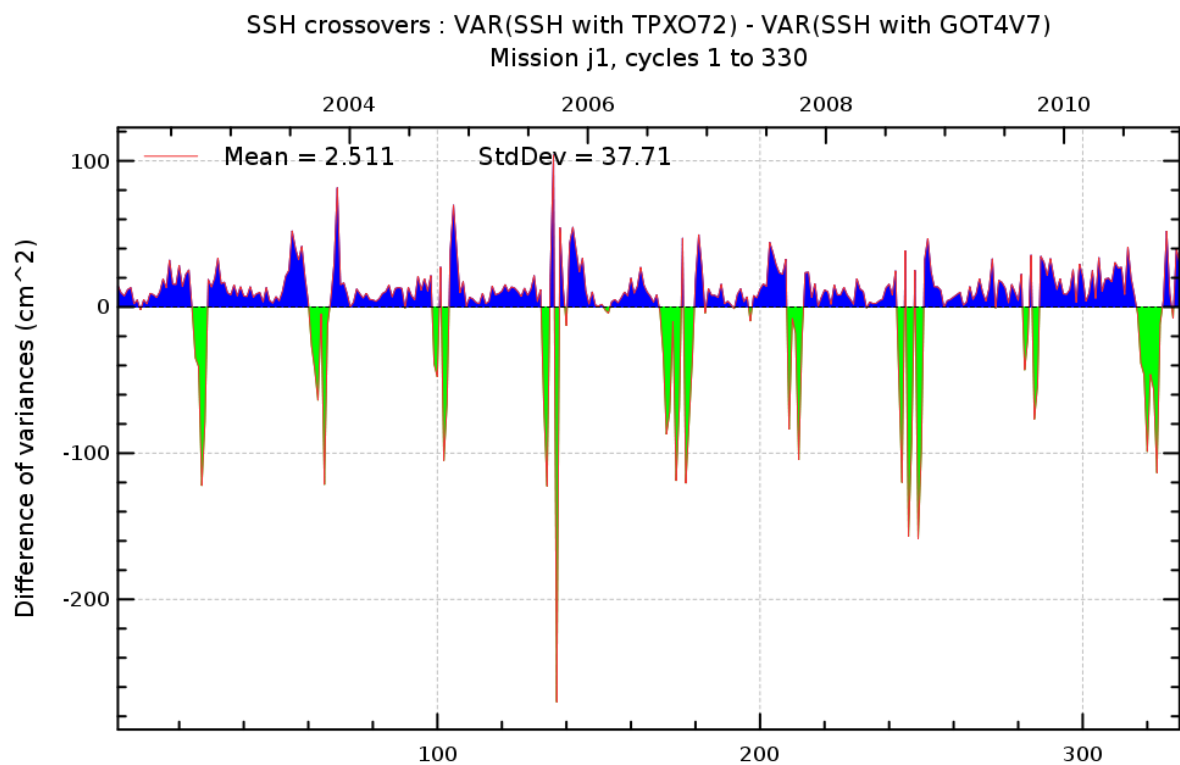
Diagnostic A102 (mission j1)

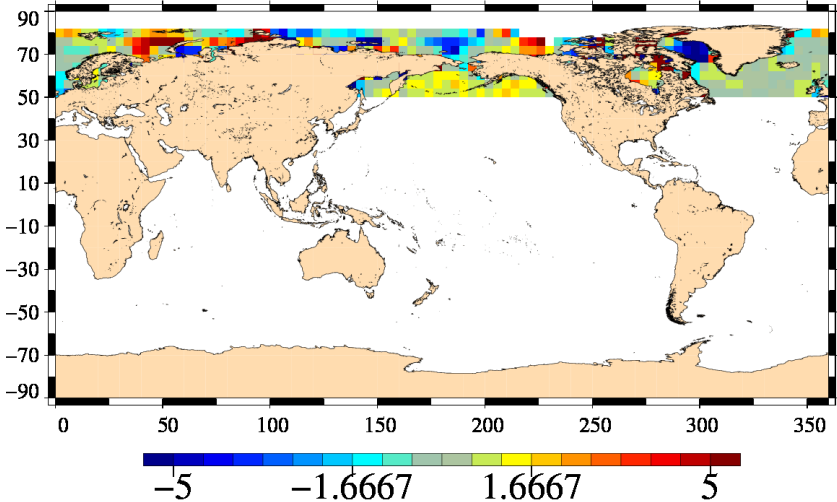
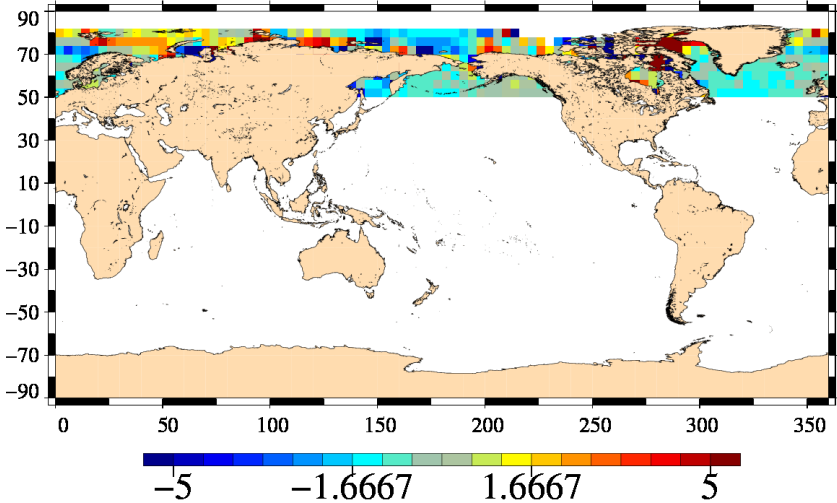
Name : Differences between temporal evolution of SSH crossovers

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 : Global internal analyses



Diagnostic A103_a (mission en)	
Name : Map of SSH crossovers	
Input data : Sea Surface Height (SSH) crossovers	
<p>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).</p>	
<div>Mean of SSH with TPXO72 Mission en, cycles 9 to 94</div>  <div>Mean (cm)</div> <div>Mean of SSH with GOT4V7 Mission en, cycles 9 to 94</div>  <div>Mean (cm)</div>	

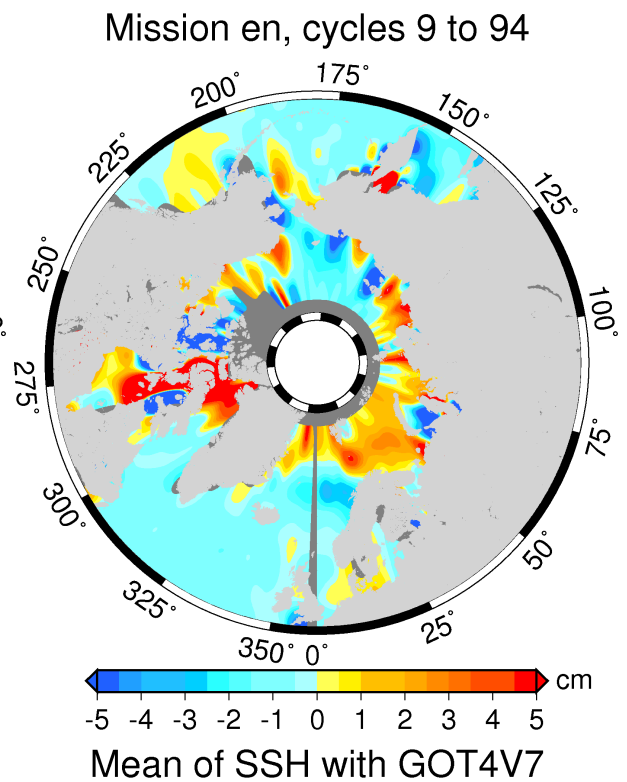
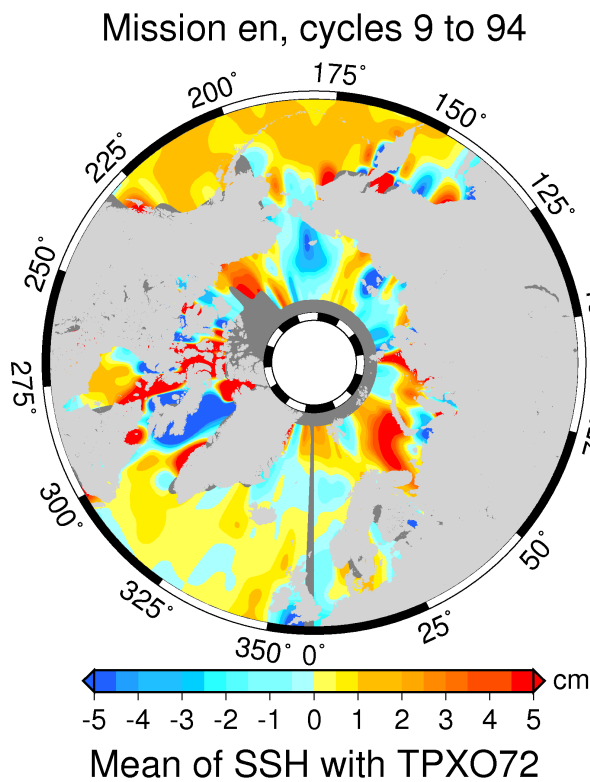
Diagnostic A103_b (mission en)

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 type : Global internal analyses



Diagnostic A103_a (mission j1)

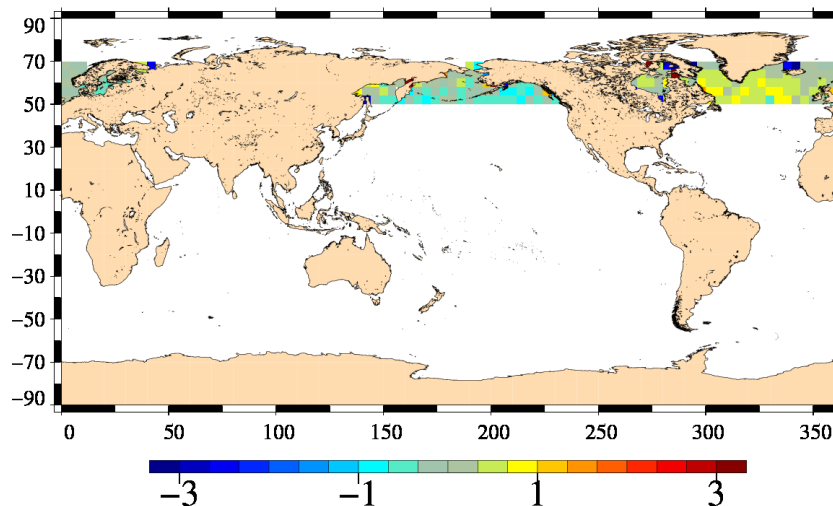
Name : Map of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

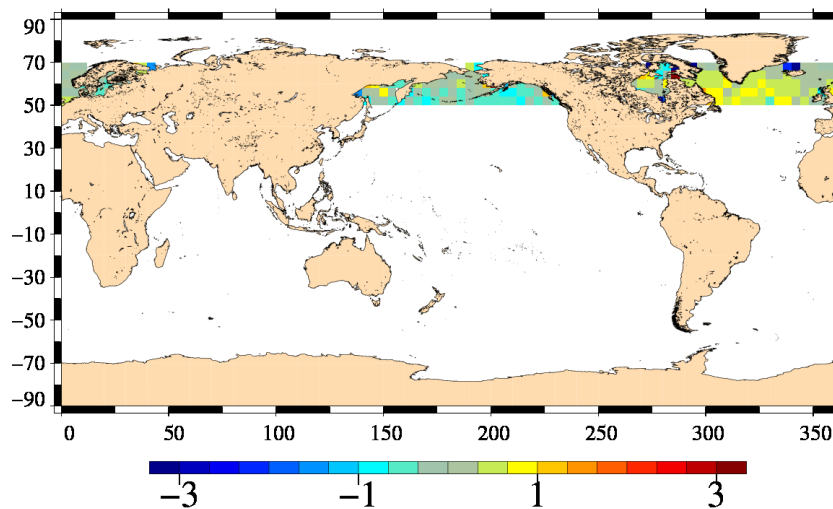
Description : The differences between maps of SSH crossovers differences (mean, variance) are calculated using successively both altimetric components in the SSH calculation. SSH crossovers are the differences between ascending and descending passes for time differences between both passes lower than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

Diagnostic type : Global internal analyses

Mean of SSH with TPXO72
Mission j1, cycles 1 to 330



Mean (cm)
Mean of SSH with GOT4V7
Mission j1, cycles 1 to 330



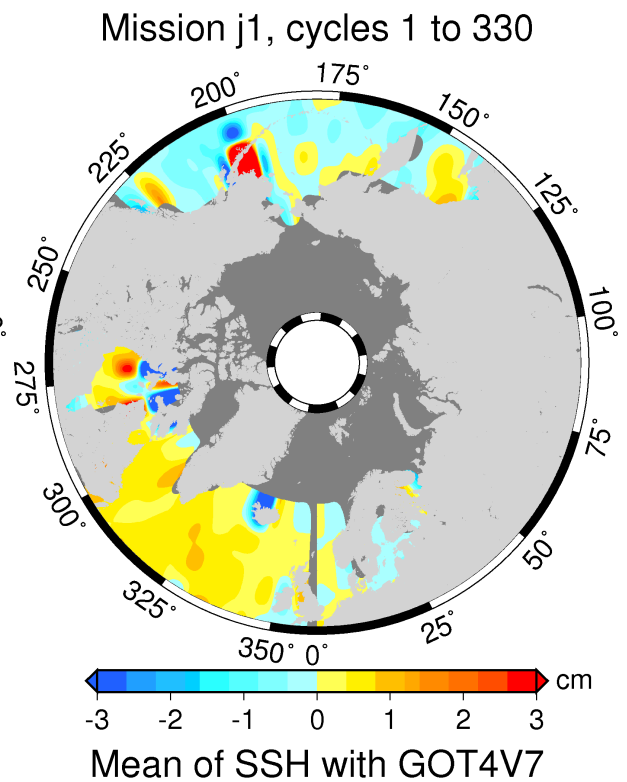
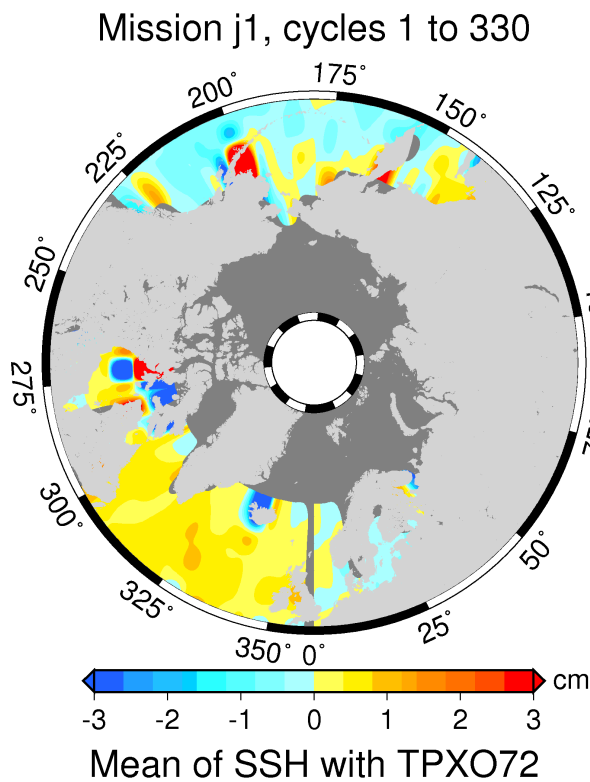
Diagnostic A103_b (mission j1)

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 : Global internal analyses

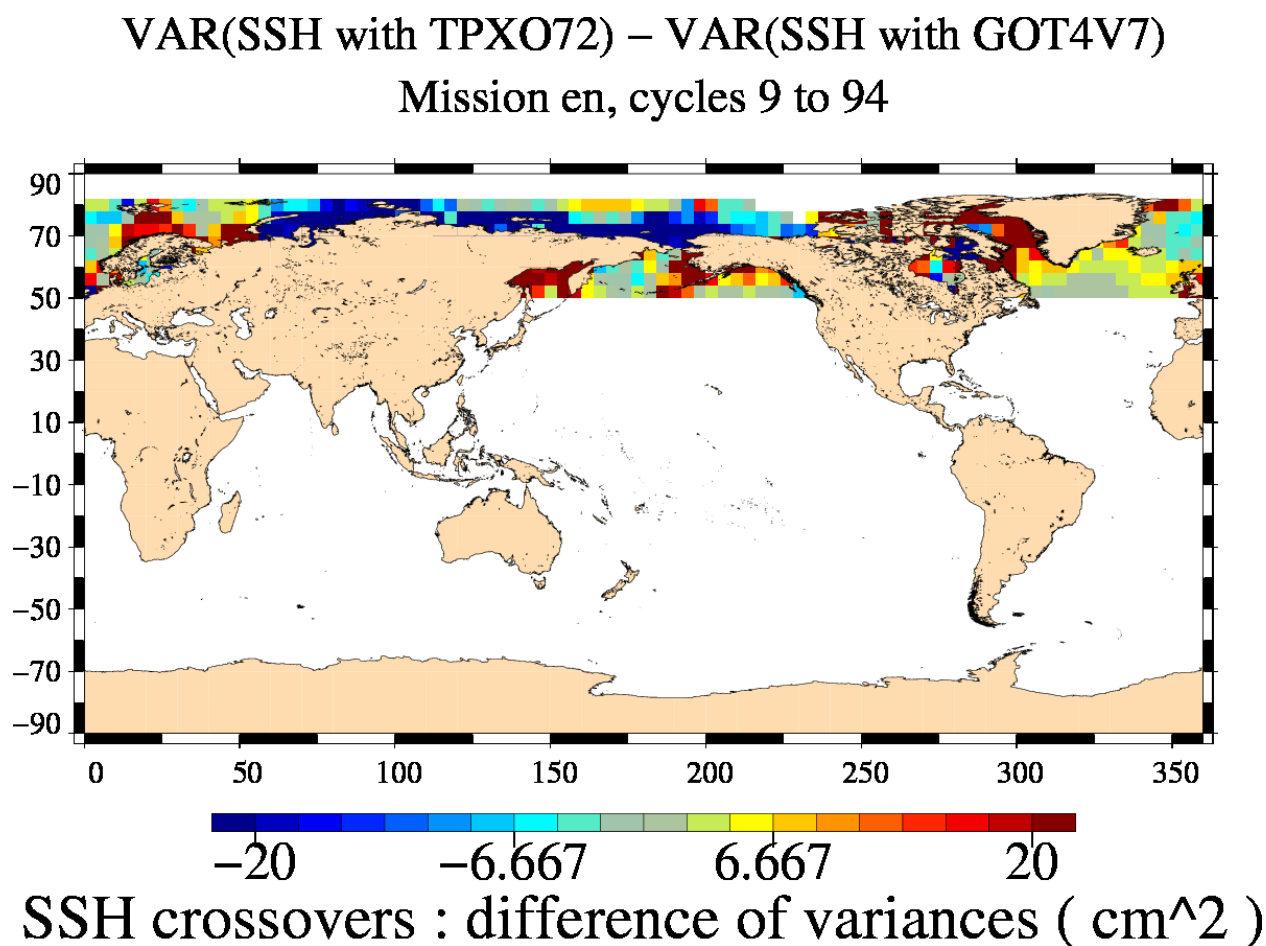


Diagnostic A104_a (mission en)

Name : Differences between maps of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

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



Diagnostic A104.b (mission en)

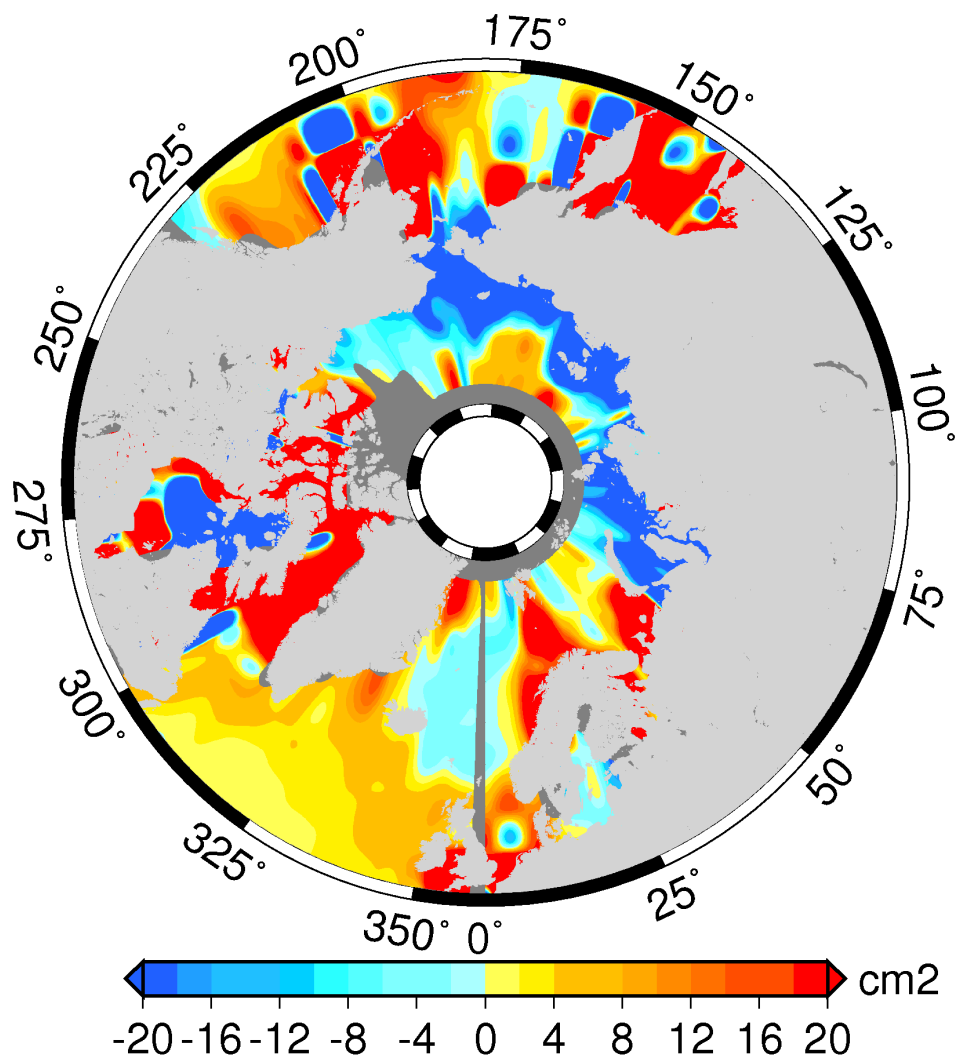
Name : Differences between maps of SSH crossovers

Input data : Sea Surface Height (SSH) crossovers

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

Diagnostic type : Global internal analyses

Mission en, cycles 9 to 94



$R(\text{SSH with TPXO72}) - \text{VAR}(\text{SSH with GOT4V7})$

Diagnostic A104_a (mission j1)

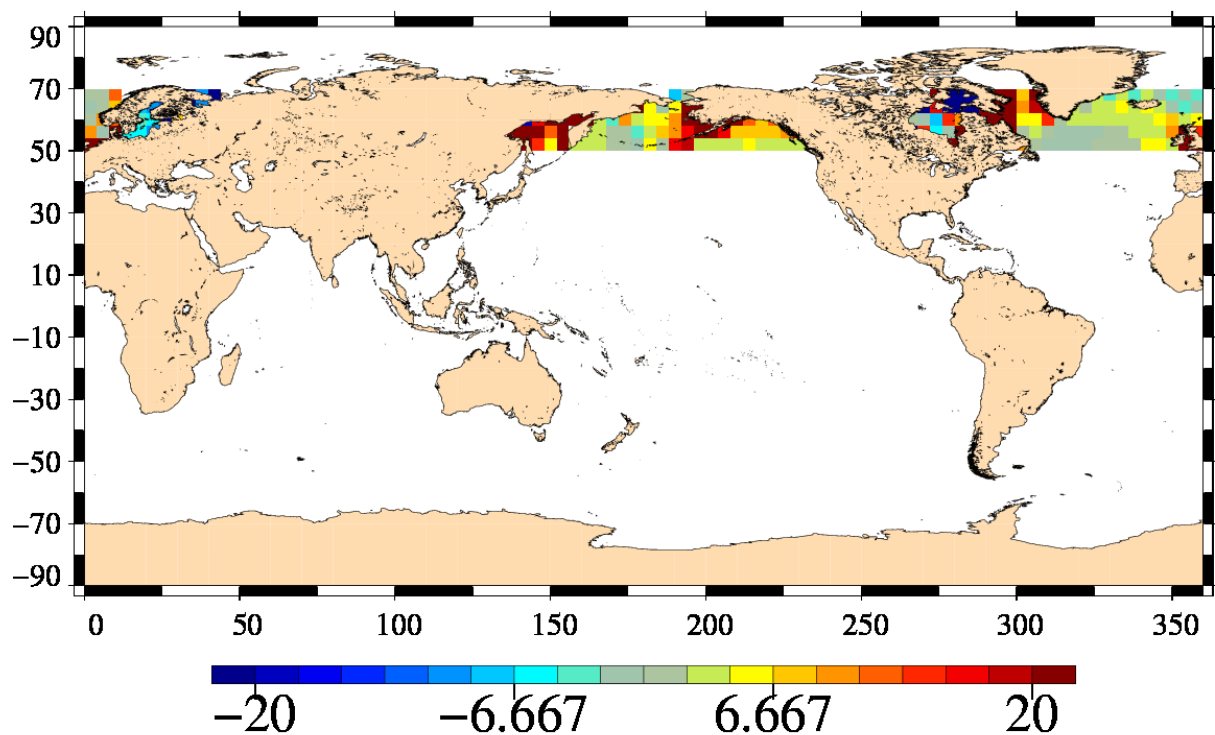
Name : Differences between maps of SSH crossovers

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 : Global internal analyses

VAR(SSH with TPXO72) – VAR(SSH with GOT4V7)
Mission j1, cycles 1 to 330



SSH crossovers : difference of variances (cm²)

Diagnostic A104_b (mission j1)

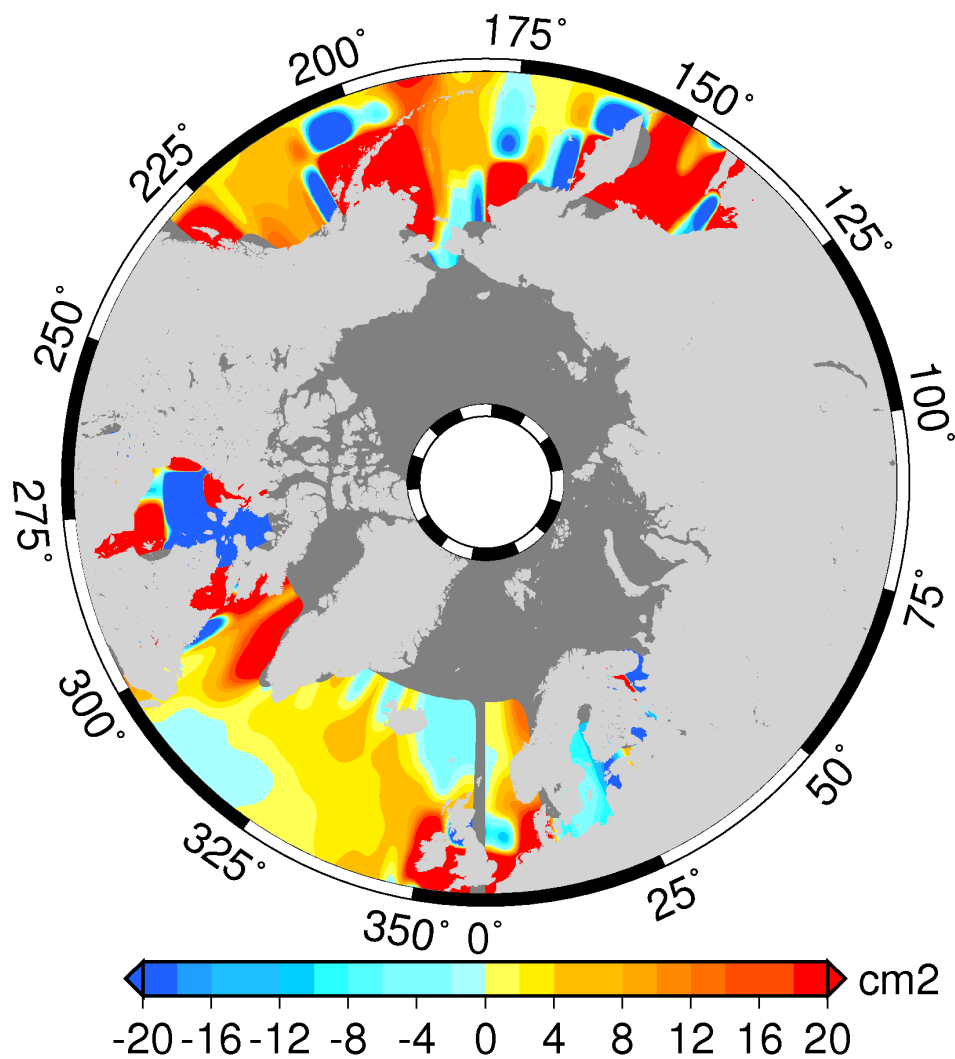
Name : Differences between maps of SSH crossovers

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 : Global internal analyses

Mission j1, cycles 1 to 330



$R(\text{SSH with TPXO72}) - \text{VAR}(\text{SSH with GOT4V7})$

Diagnostic type : Global internal analyses	Diagnostic A201 a (mission en)	
	Name : Temporal evolution of Sea Level Anomaly (SLA)	
	Input data : Along track SLA	
	<p>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.</p>	
	<div>Global MSL Mission en, cycles 9 to 94</div>	

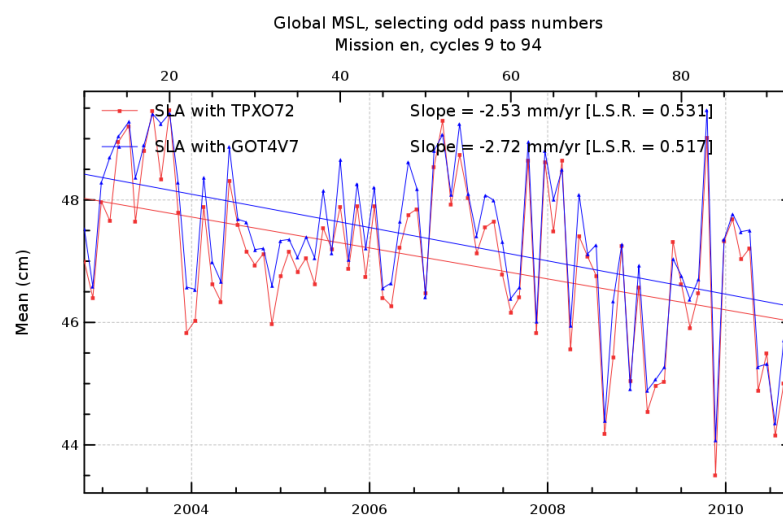
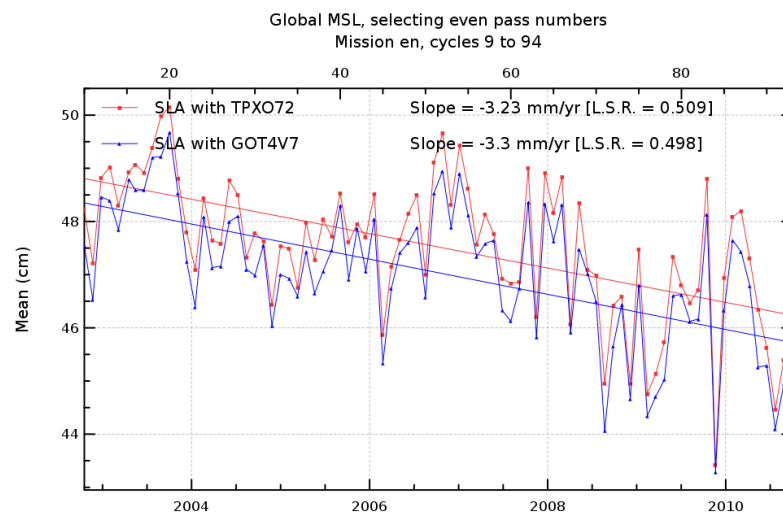
Diagnostic A201_b (mission en)

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 : Global internal analyses



Diagnostic A201_c (mission en)

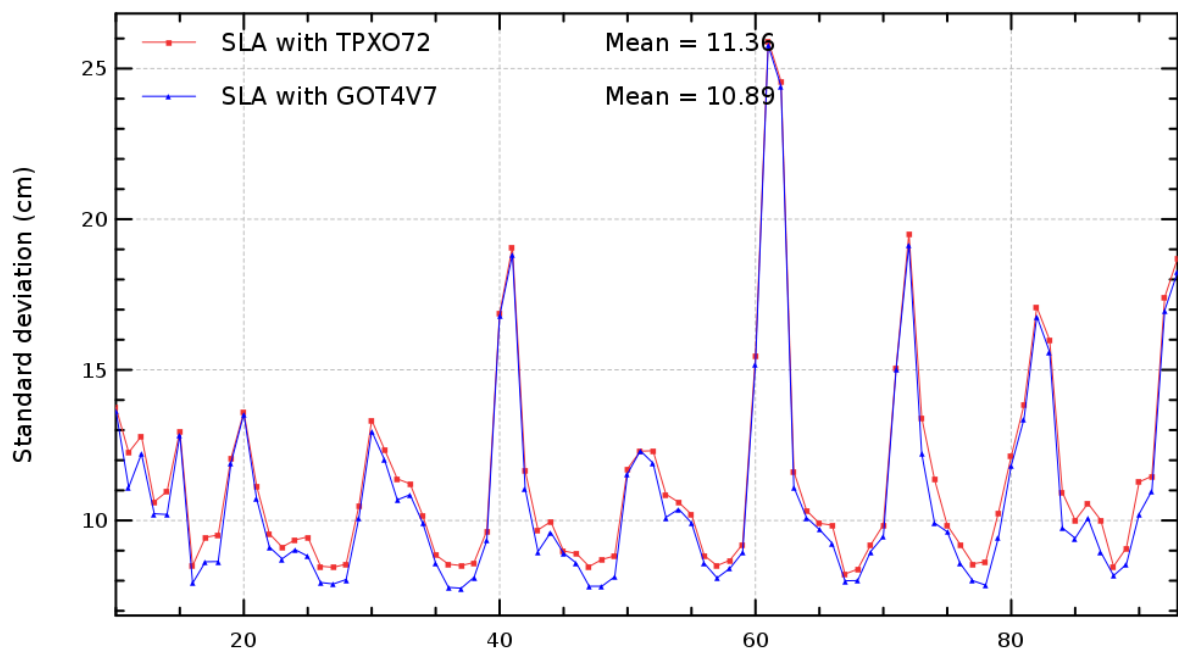
Name : Temporal evolution of Sea Level Anomaly (SLA)

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 : Global internal analyses

Global MSL
Mission en, cycles 9 to 94



Diagnostic A201_d (mission en)

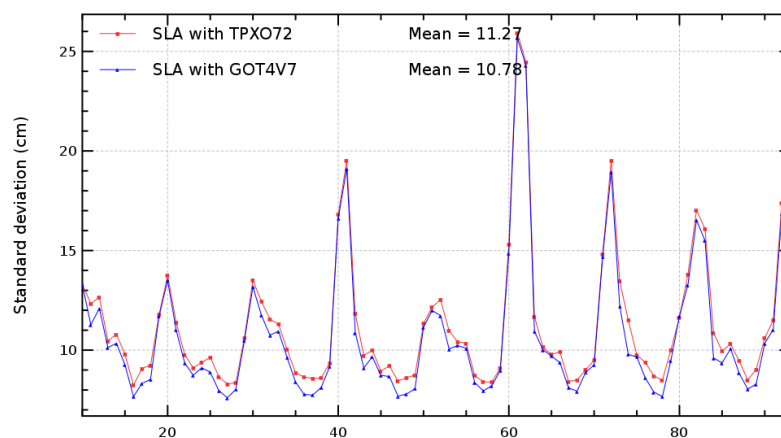
Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

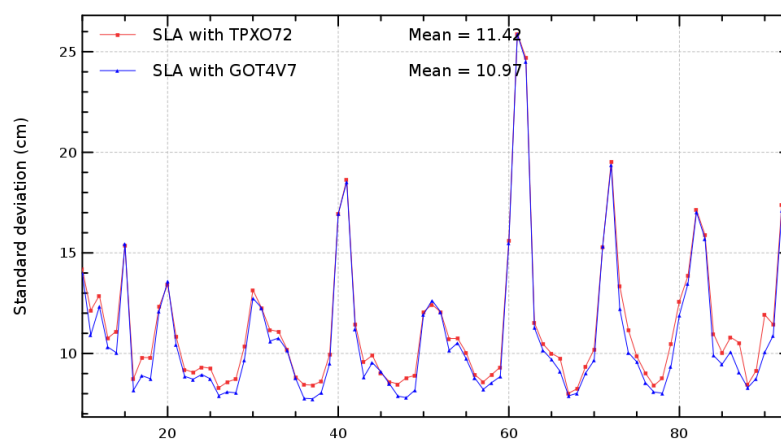
Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after 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 : Global internal analyses

Global MSL, selecting even pass numbers
Mission en, cycles 9 to 94



Global MSL, selecting odd pass numbers
Mission en, cycles 9 to 94



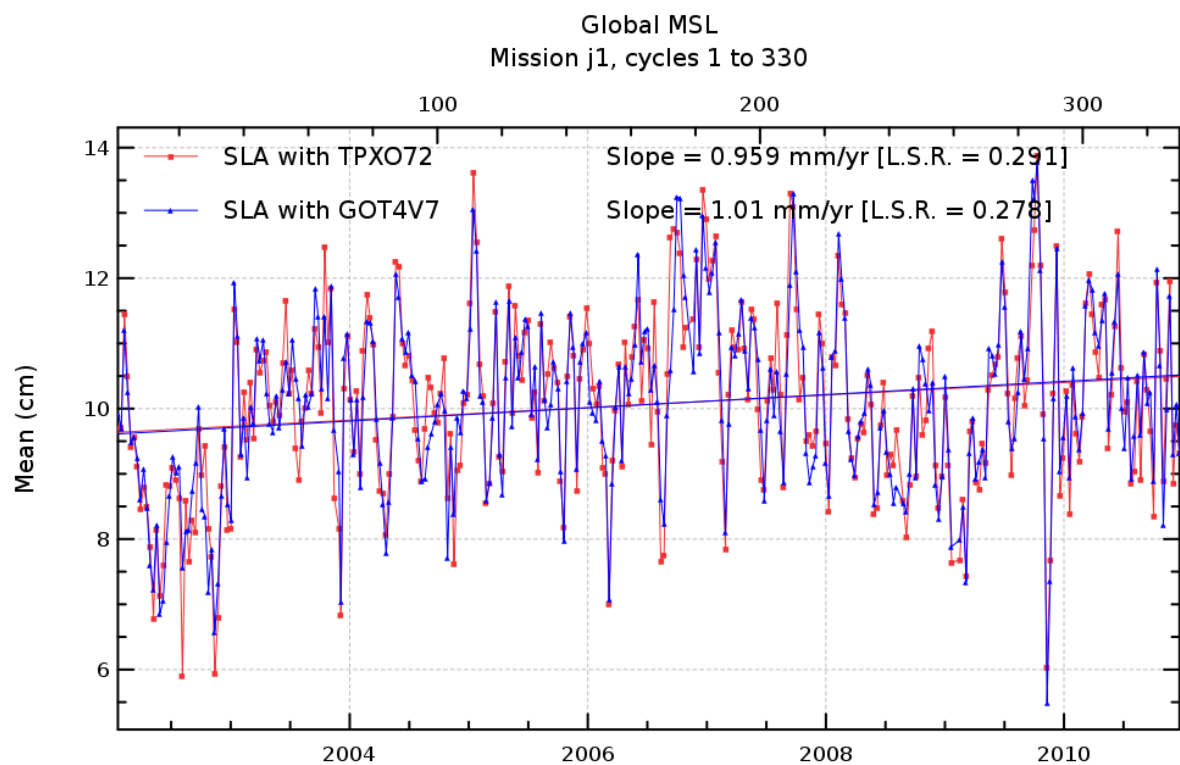
Diagnostic A201_a (mission j1)

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 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 : Global internal analyses



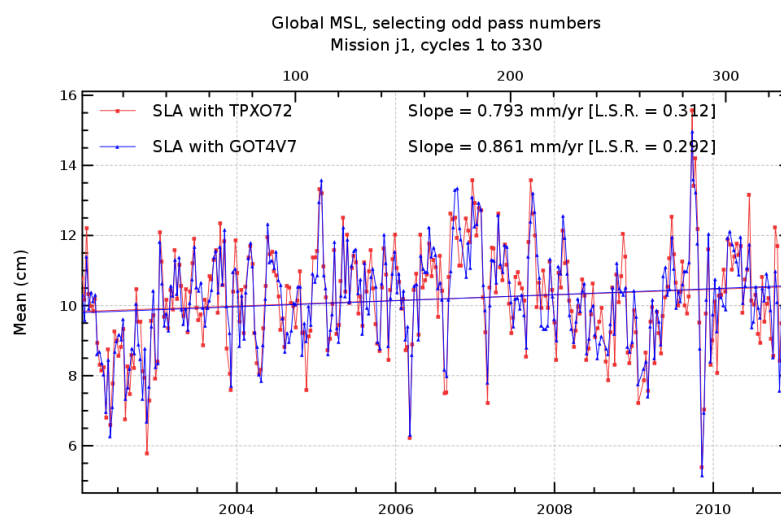
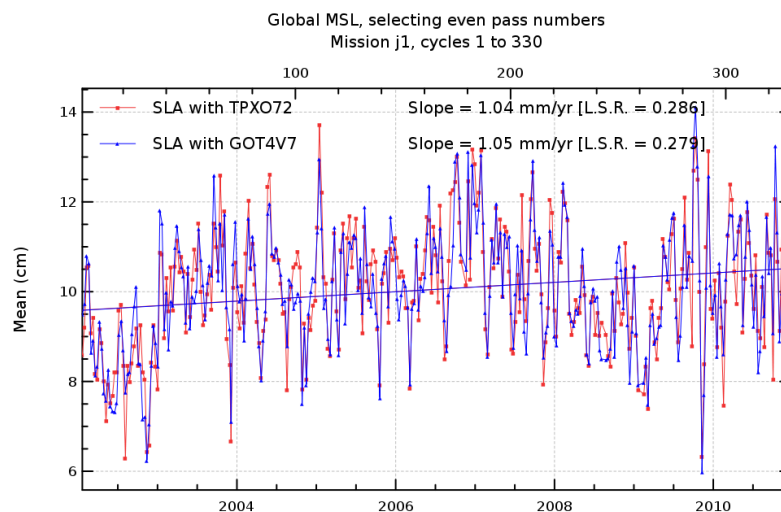
Diagnostic A201_b (mission j1)

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 : Global internal analyses



Diagnostic A201_c (mission j1)

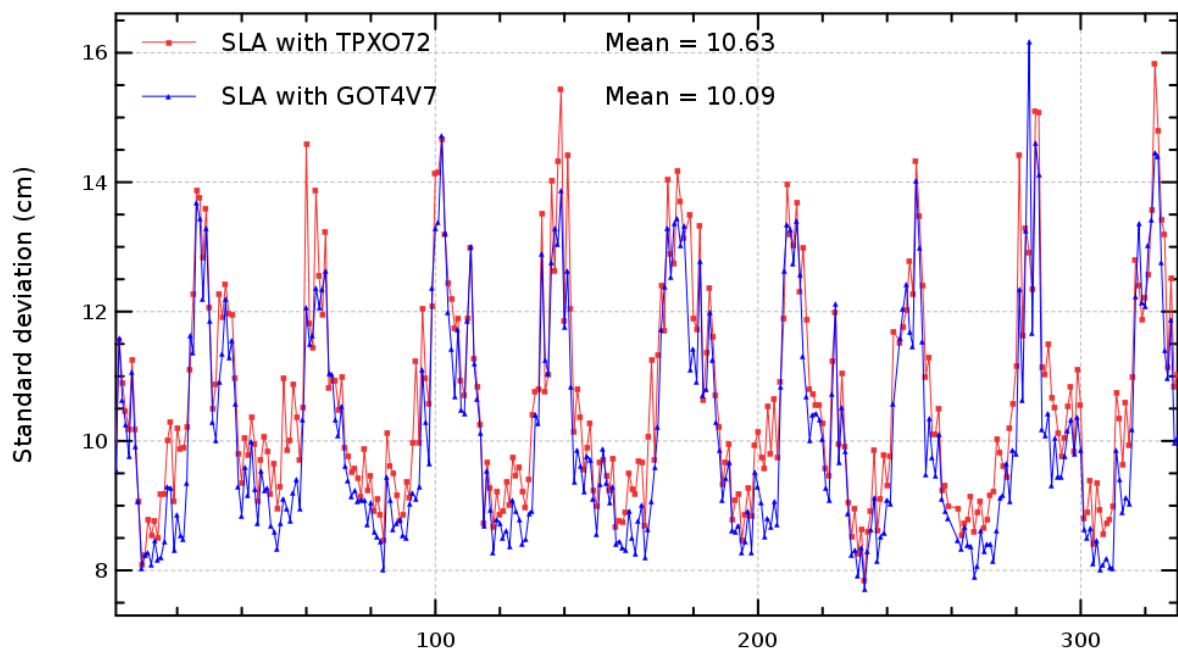
Name : Temporal evolution of Sea Level Anomaly (SLA)

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 : Global internal analyses

Global MSL
Mission j1, cycles 1 to 330



Diagnostic A201_d (mission j1)

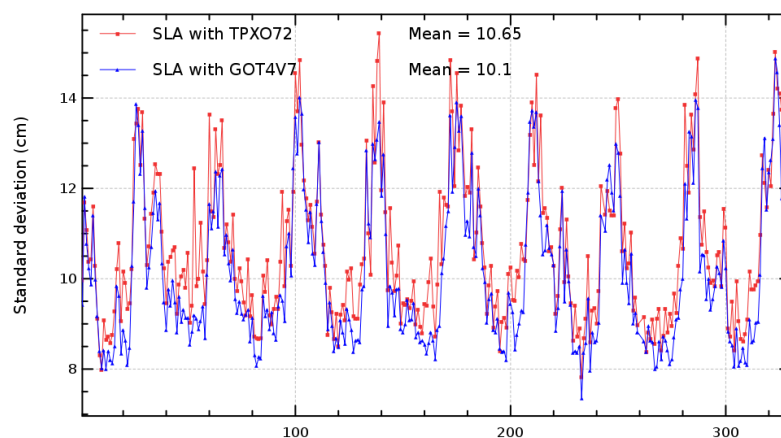
Name : Temporal evolution of Sea Level Anomaly (SLA)

Input data : Along track SLA

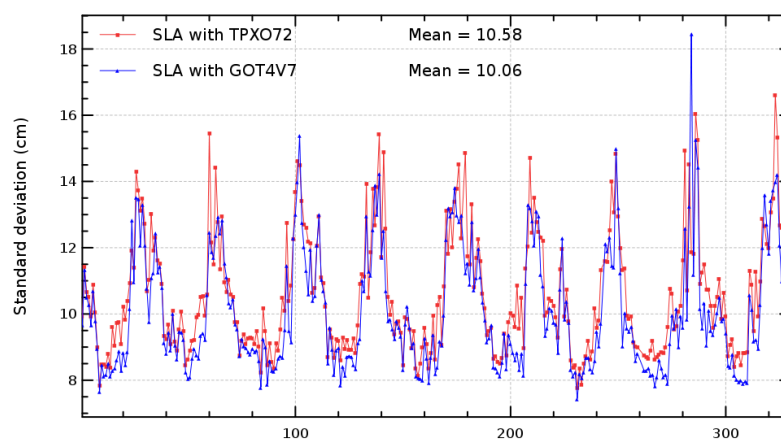
Description : The temporal evolution of SLA statistics (mean, standard deviation) are calculated from a cyclic way (altimeter repetivity, daily, weekly, monthly) using successively both altimetric components in the SLA calculation. These statistics are calculated from 1 Hz altimetric measurements after 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 : Global internal analyses

Global MSL, selecting even pass numbers
Mission j1, cycles 1 to 330



Global MSL, selecting odd pass numbers
Mission j1, cycles 1 to 330



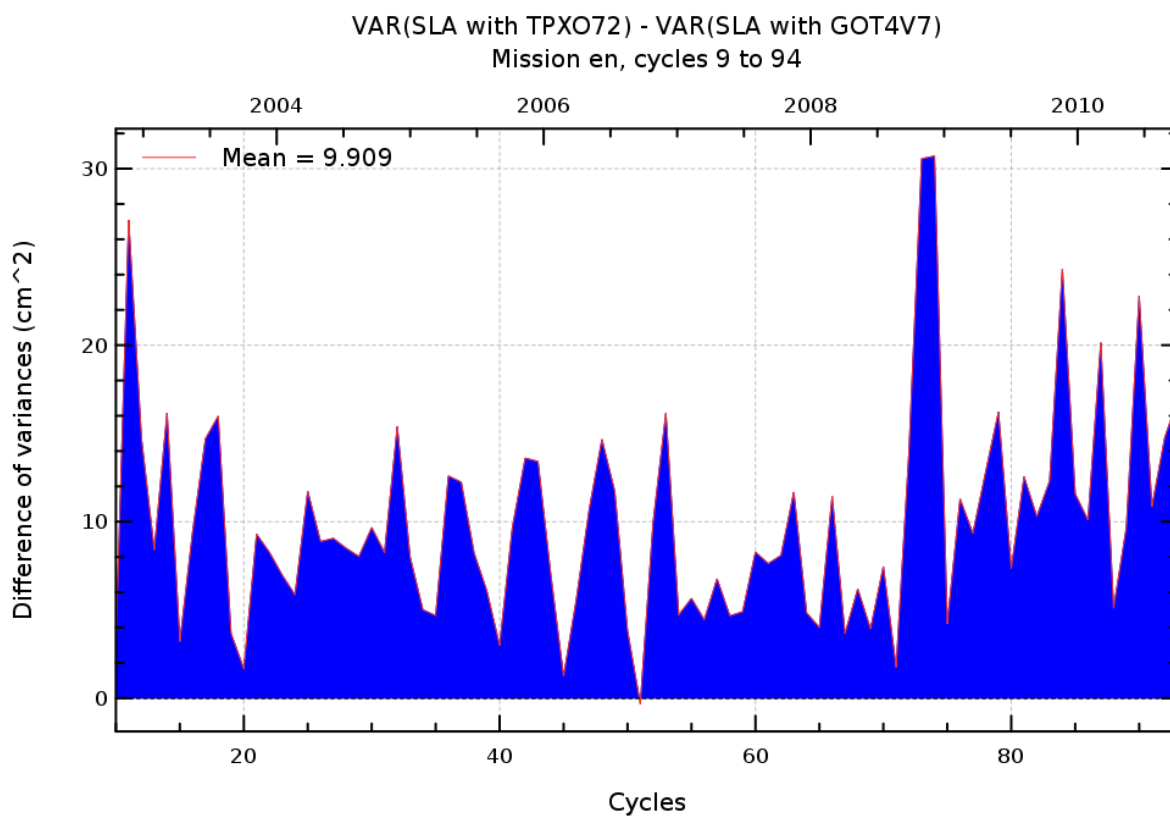
Diagnostic A202_a (mission en)

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 : Global internal analyses



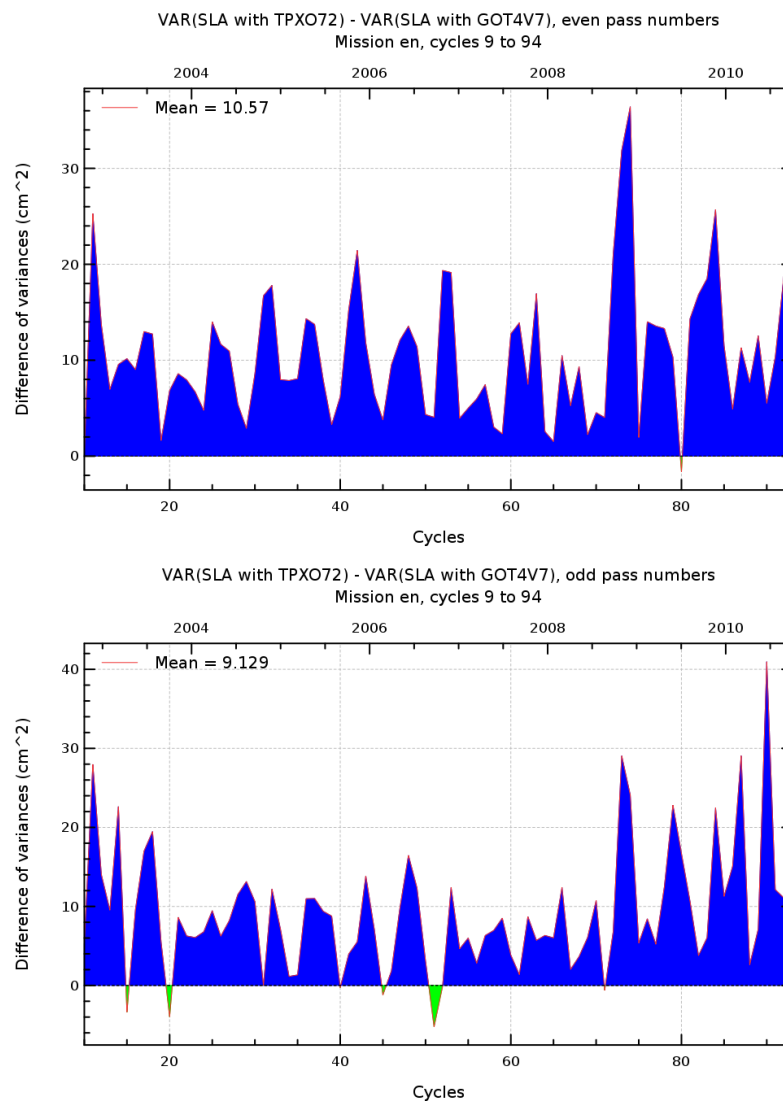
Diagnostic A202_b (mission en)

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 : Global internal analyses



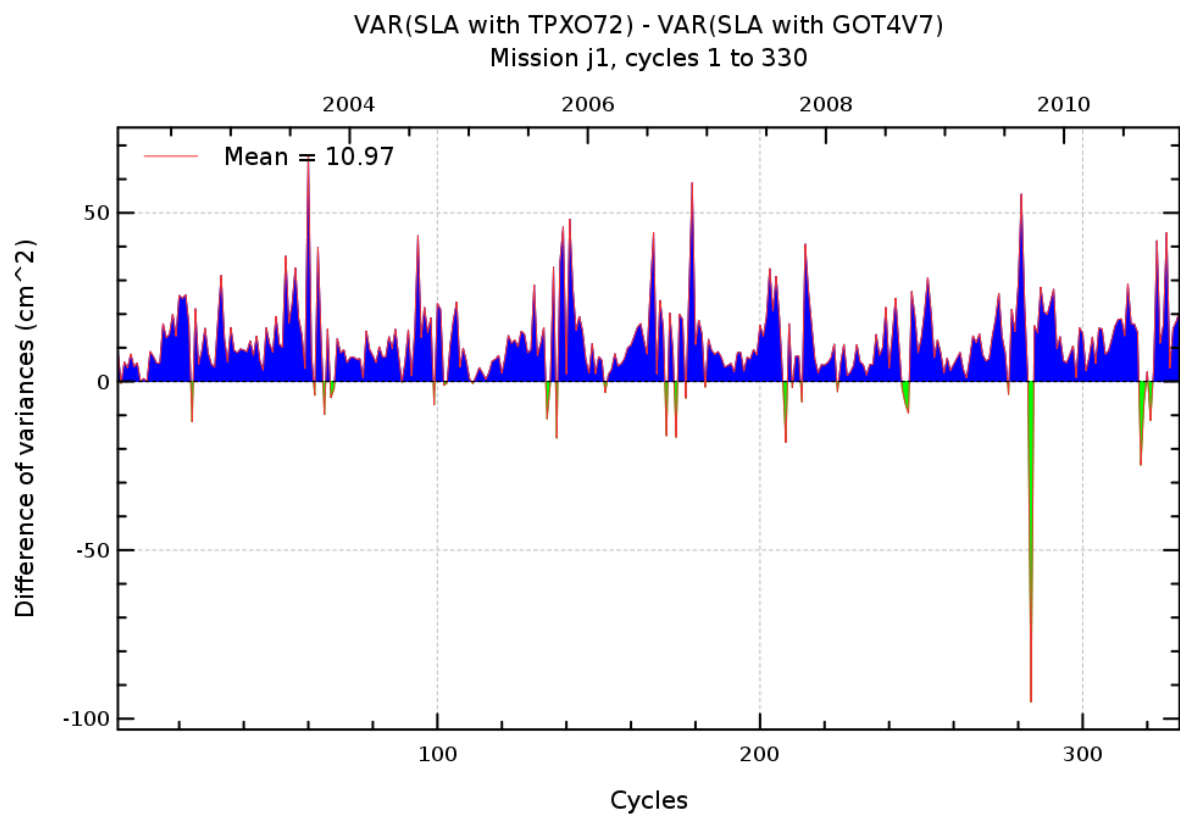
Diagnostic A202_a (mission j1)

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 : Global internal analyses



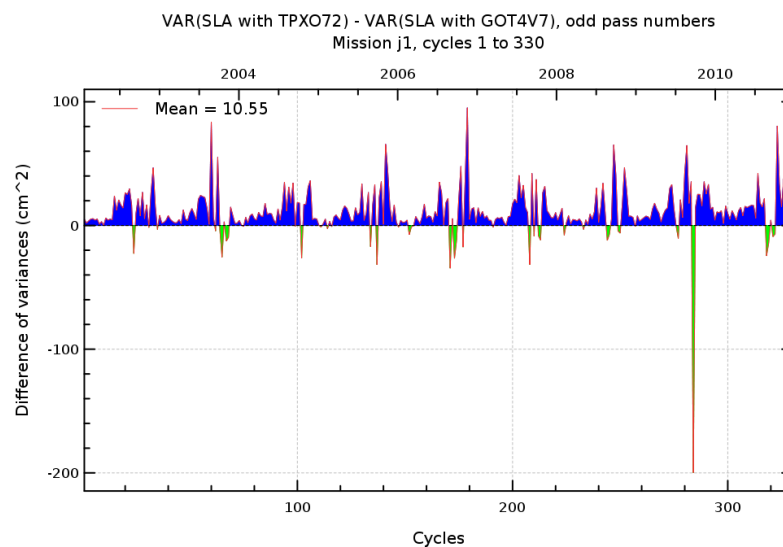
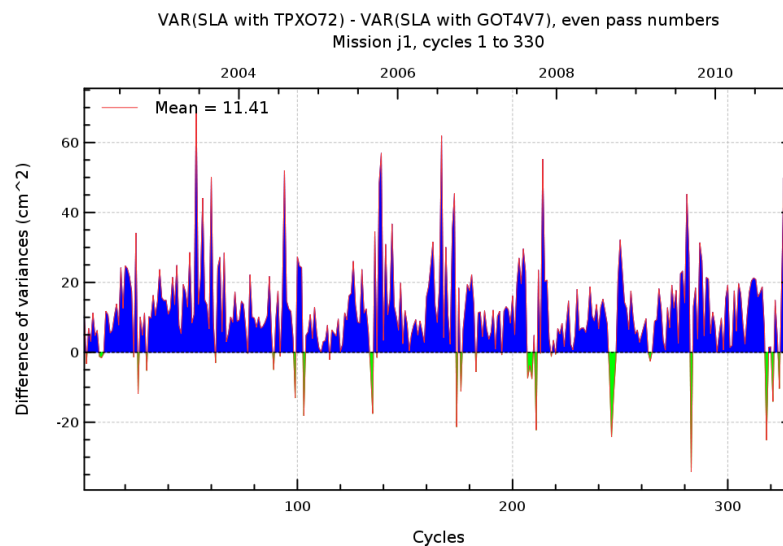
Diagnostic A202_b (mission j1)

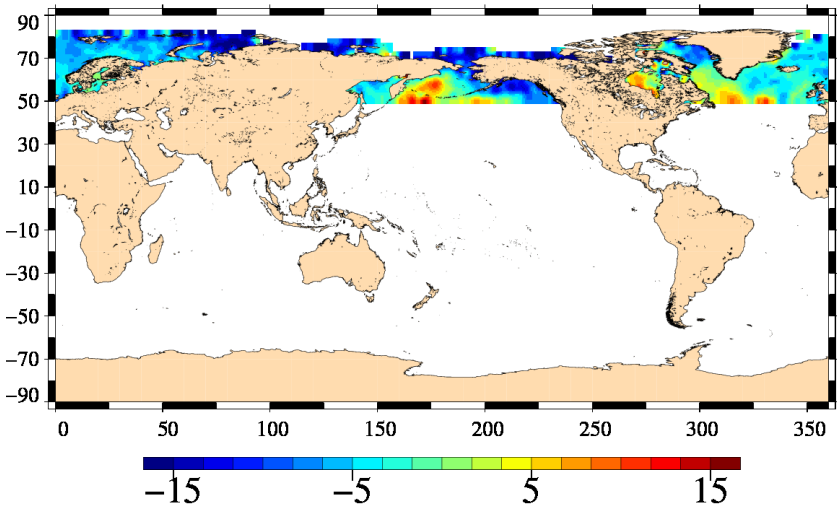
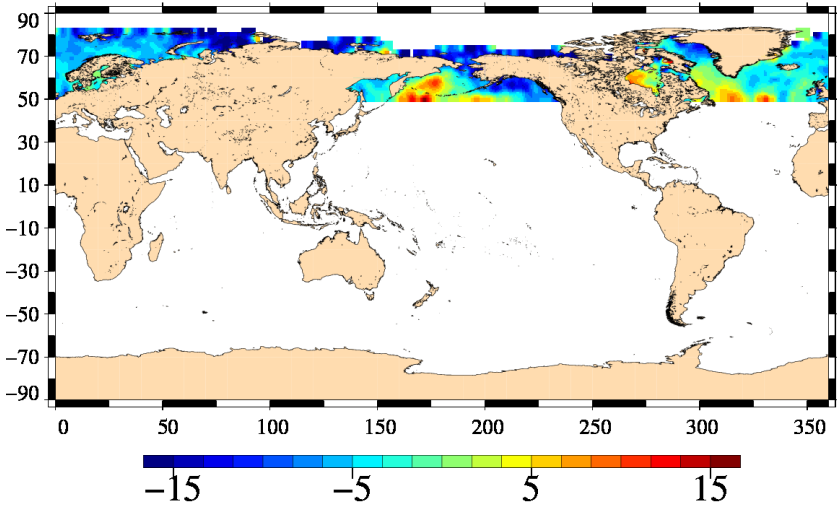
Name : Differences between temporal evolution of Sea Level Anomaly (SLA)

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 : Global internal analyses



Diagnostic type : Global internal analyses	Diagnostic A203_a (mission en)	
	Name : Map of Sea Level Anomaly (SLA) over all the period	
	Input data : Along track SLA	
	Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.	
	<div>SLA with TPXO72 trends Mission en, cycles 9 to 94</div>  <div>Trends (mm/yr)</div> <div>SLA with GOT4V7 trends Mission en, cycles 9 to 94</div>  <div>Trends (mm/yr)</div>	

Diagnostic A203_b (mission en)

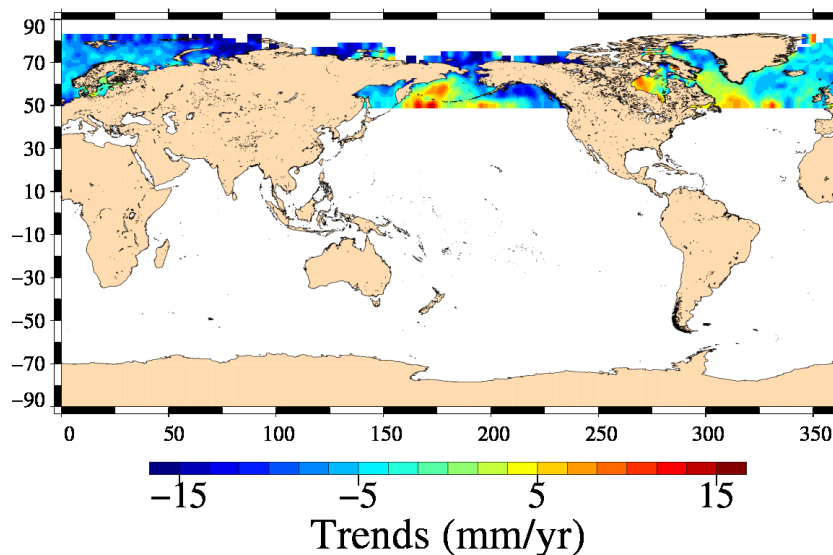
Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

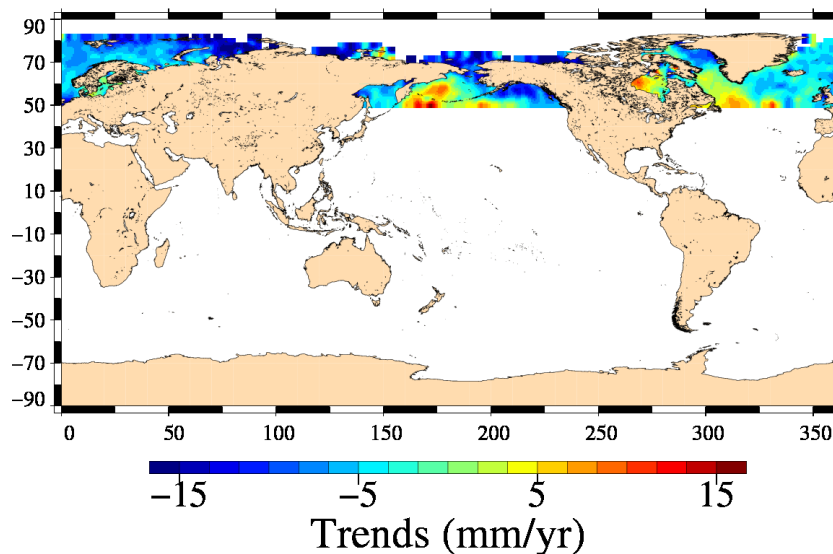
Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

Diagnostic type : Global internal analyses

SLA with TPXO72 trends : even pass numbers
Mission en, cycles 9 to 94



SLA with GOT4V7 trends : even pass numbers
Mission en, cycles 9 to 94



Diagnostic A203_c (mission en)

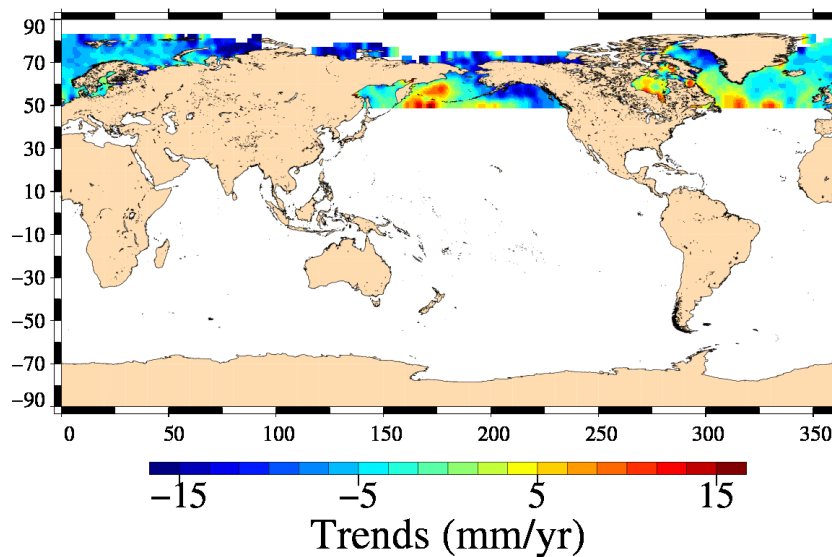
Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

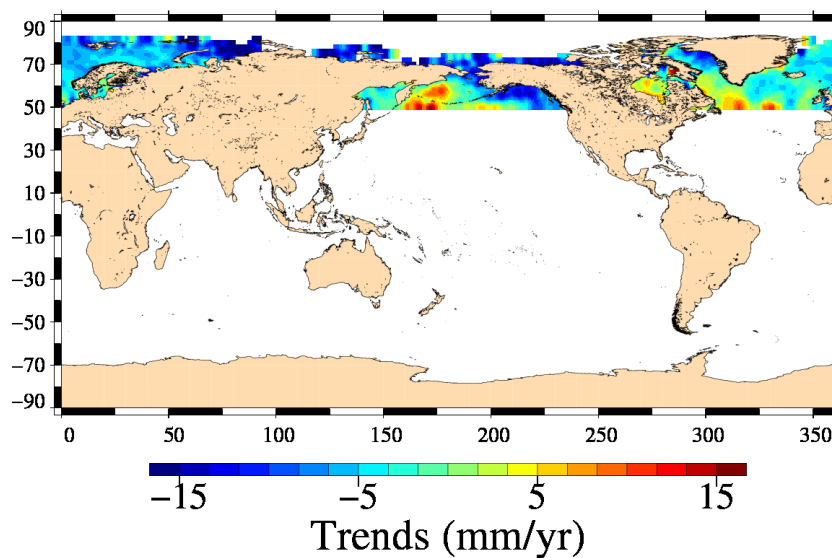
Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

Diagnostic type : Global internal analyses

SLA with TPXO72 trends : odd pass numbers
Mission en, cycles 9 to 94



SLA with GOT4V7 trends : odd pass numbers
Mission en, cycles 9 to 94



Diagnostic A203_a (mission j1)

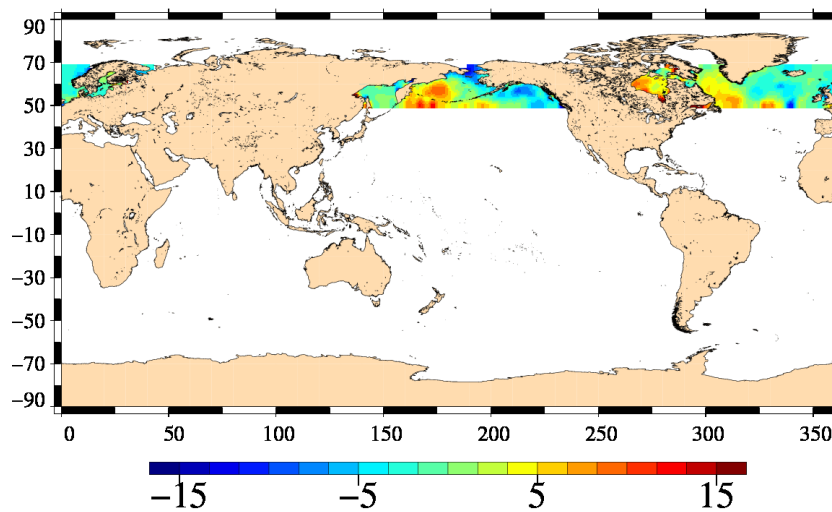
Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

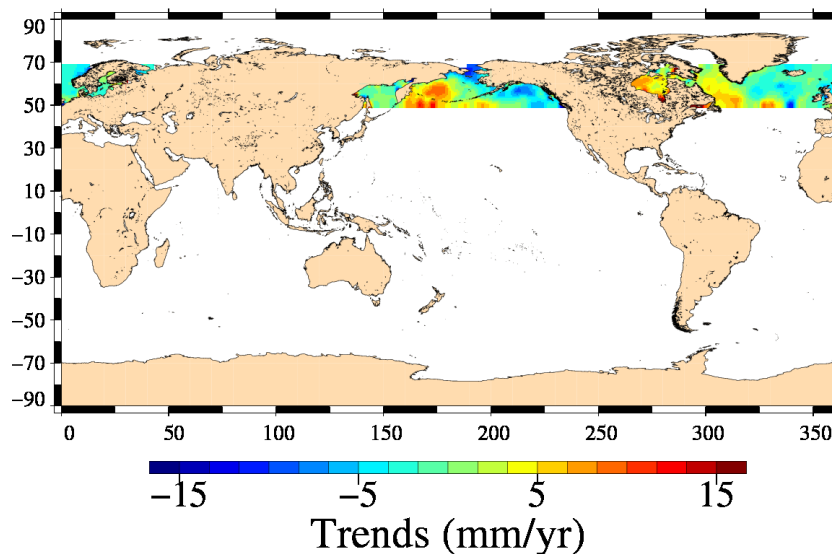
Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

Diagnostic type : Global internal analyses

SLA with TPXO72 trends
Mission j1, cycles 1 to 330



Trends (mm/yr)
SLA with GOT4V7 trends
Mission j1, cycles 1 to 330



Diagnostic A203_b (mission j1)

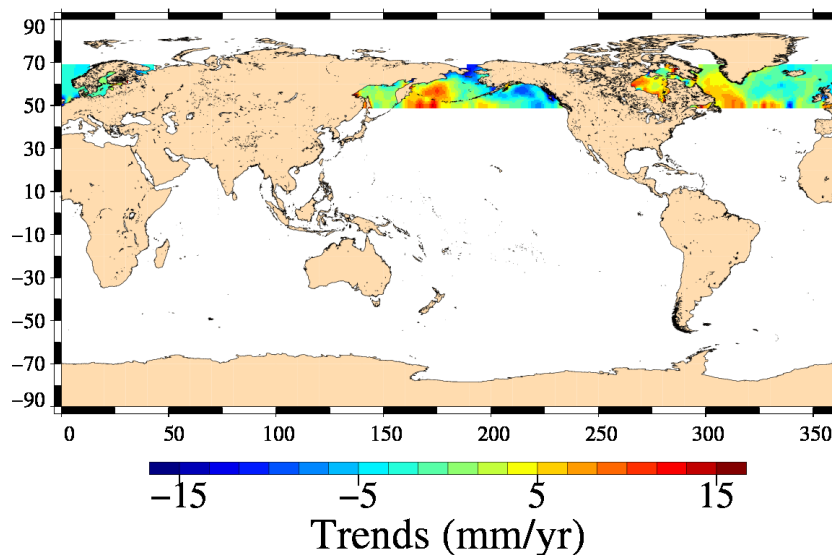
Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

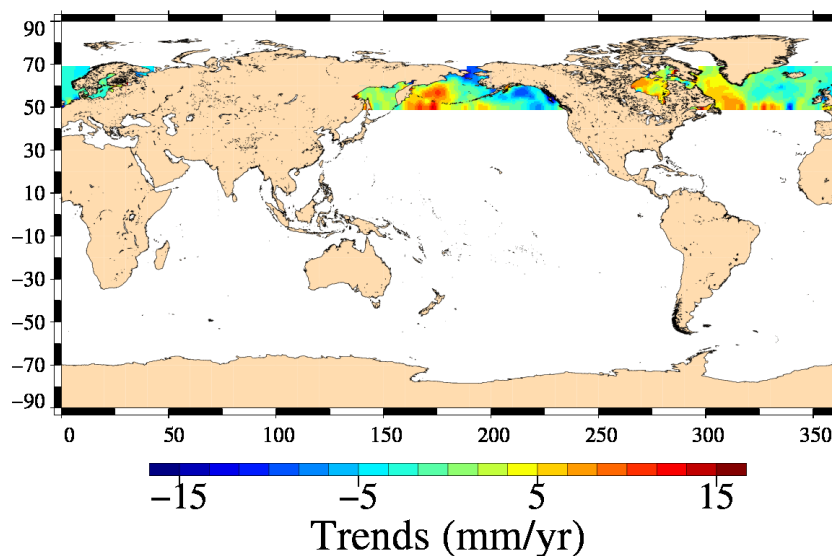
Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

Diagnostic type : Global internal analyses

SLA with TPXO72 trends : even pass numbers
Mission j1, cycles 1 to 330



SLA with GOT4V7 trends : even pass numbers
Mission j1, cycles 1 to 330



Diagnostic A203_c (mission j1)

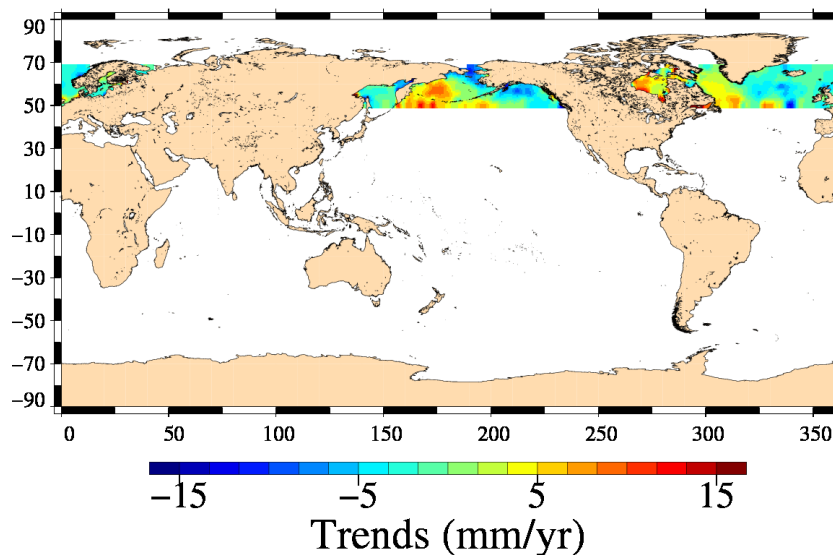
Name : Map of Sea Level Anomaly (SLA) over all the period

Input data : Along track SLA

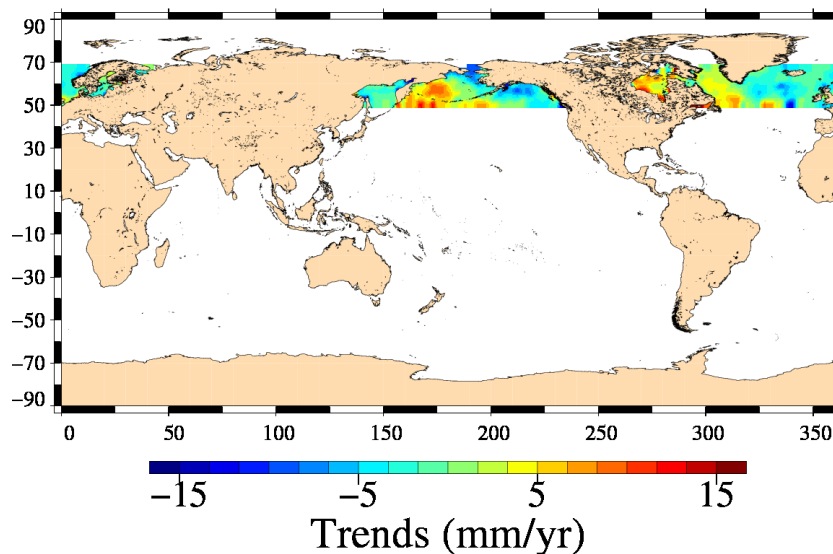
Description : The map of global statistics (mean, standard deviation) of SLA are calculated using successively both altimetric components in the SLA calculation over a large period. These statistics are calculated from 1 Hz altimetric measurements after removing spurious sea level measurements.

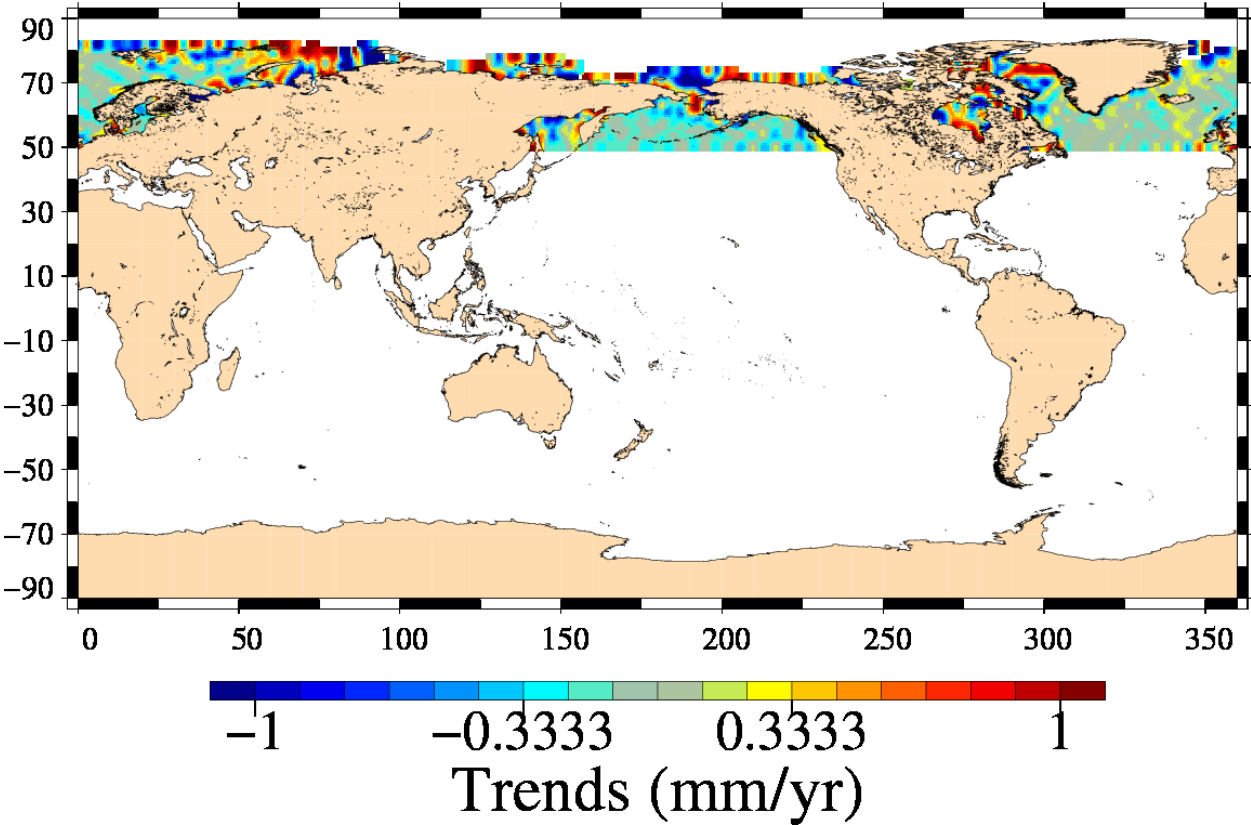
Diagnostic type : Global internal analyses

SLA with TPXO72 trends : odd pass numbers
Mission j1, cycles 1 to 330



SLA with GOT4V7 trends : odd pass numbers
Mission j1, cycles 1 to 330



Diagnostic type : Global internal analyses	Diagnostic A204_a (mission en)	
	Name : Differences between maps of SLA	
	Input data : Along track SLA	
	Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except for SLA Grids).	
	<div>SLA with TPXO72 trends – SLA with GOT4V7 trends</div> <div>Mission en, cycles 9 to 94</div> 	

Diagnostic A204.b (mission en)

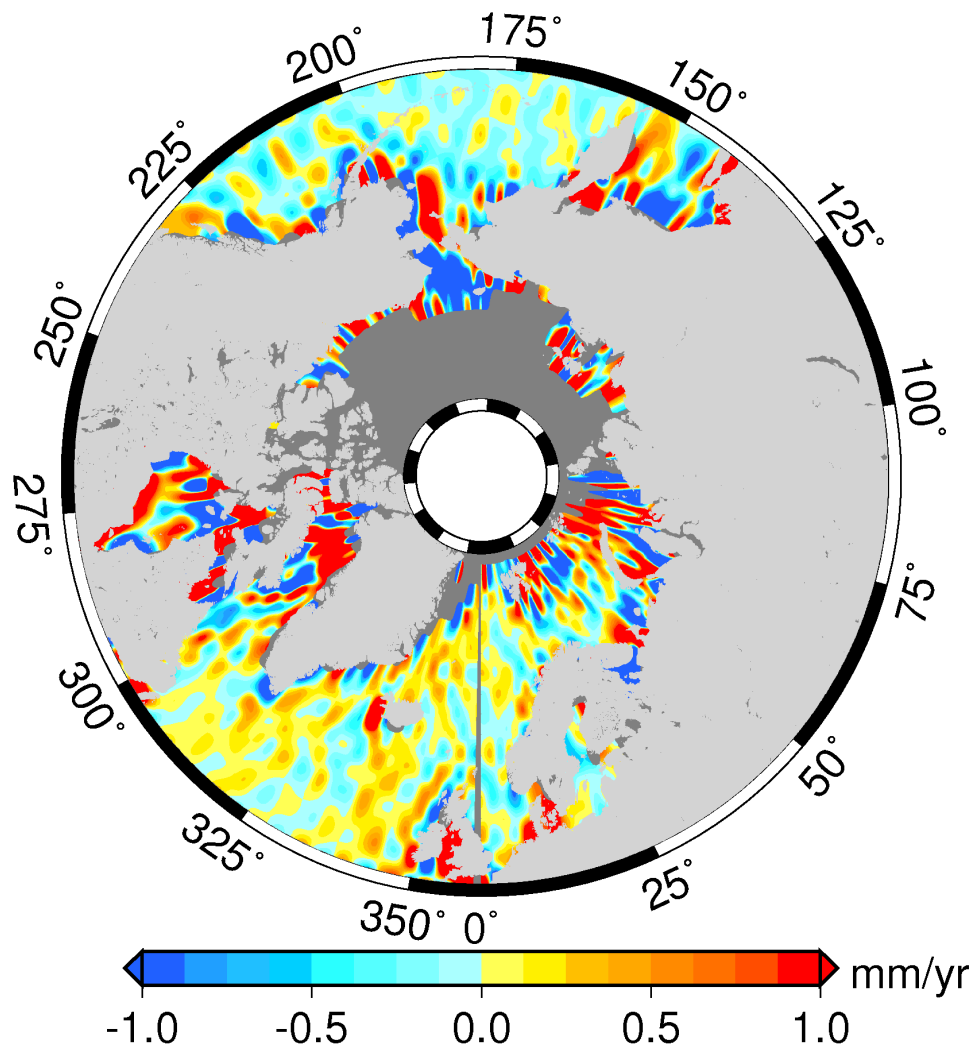
Name : Differences between maps of SLA

Input data : Along track SLA

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

Diagnostic type : Global internal analyses

Mission en, cycles 9 to 94



Δ with TPXO72 trends - SLA with GOT4V7 trends

Diagnostic A204_c (mission en)

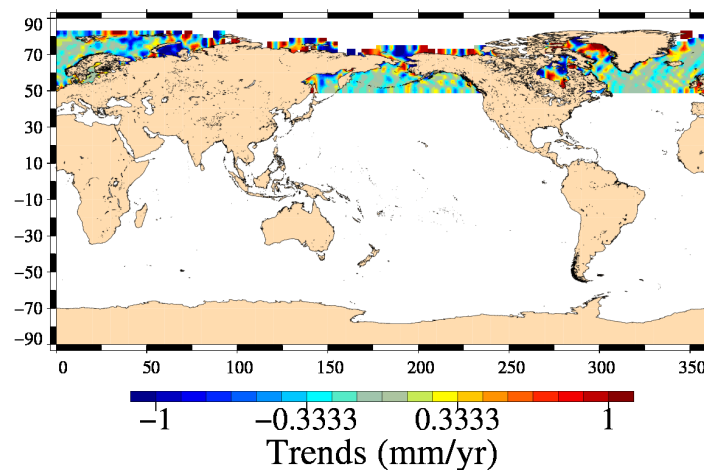
Name : Differences between maps of SLA

Input data : Along track SLA

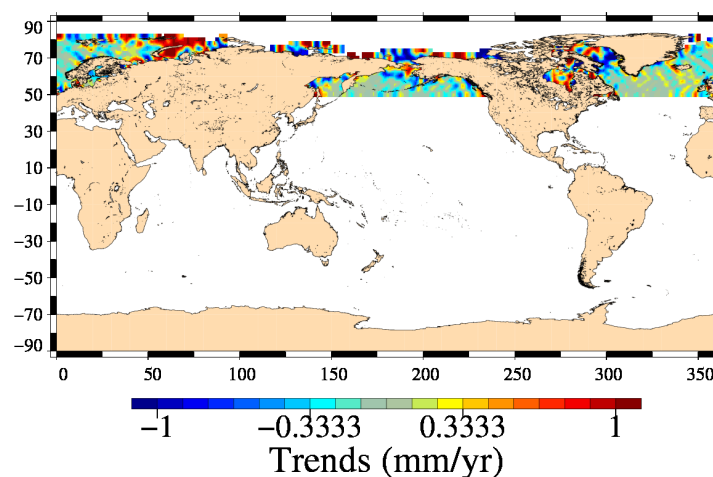
Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Global internal analyses

SLA with TPXO72 trends – SLA with GOT4V7 trends : even pass numbers
Mission en, cycles 9 to 94



SLA with TPXO72 trends – SLA with GOT4V7 trends : odd pass numbers
Mission en, cycles 9 to 94



Diagnostic A204_a (mission j1)

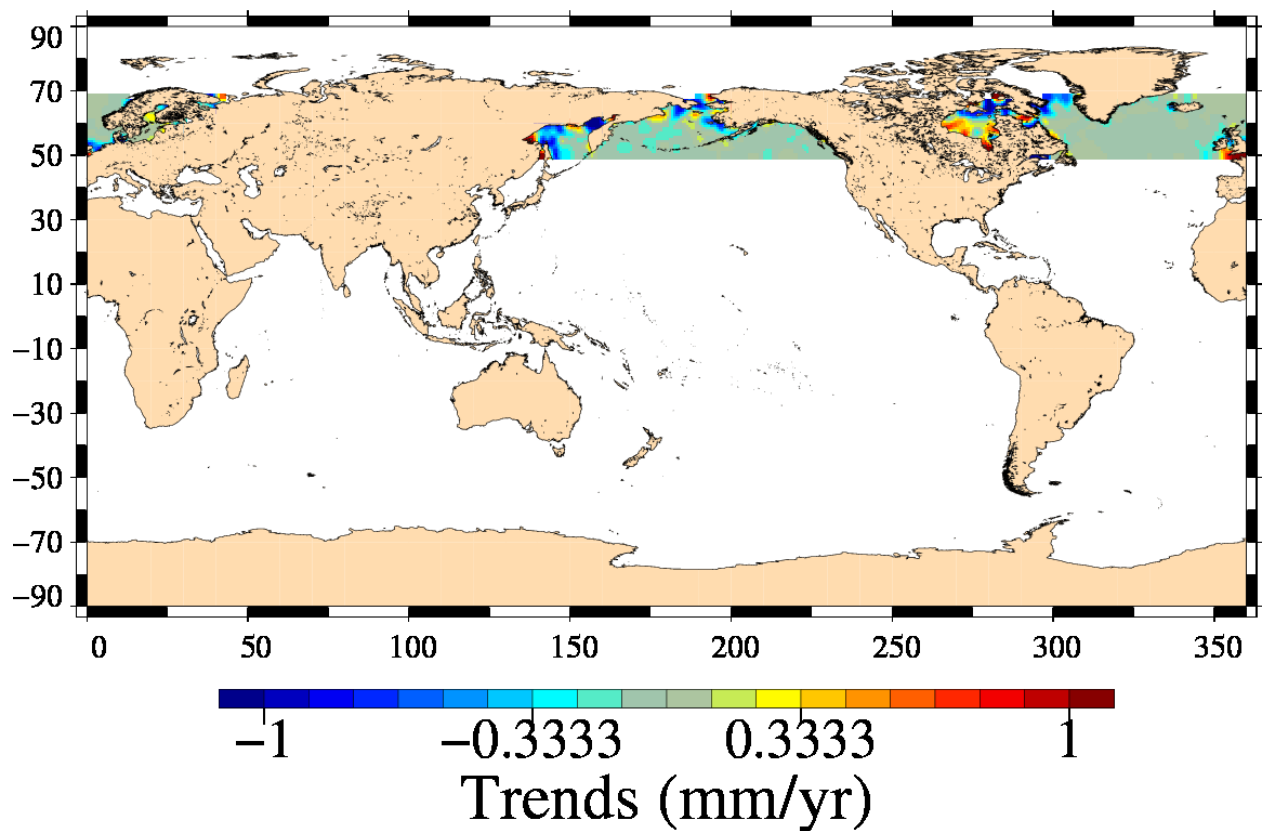
Name : Differences between maps of SLA

Input data : Along track SLA

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

Diagnostic type : Global internal analyses

SLA with TPXO72 trends – SLA with GOT4V7 trends Mission j1, cycles 1 to 330



Diagnostic A204_b (mission j1)

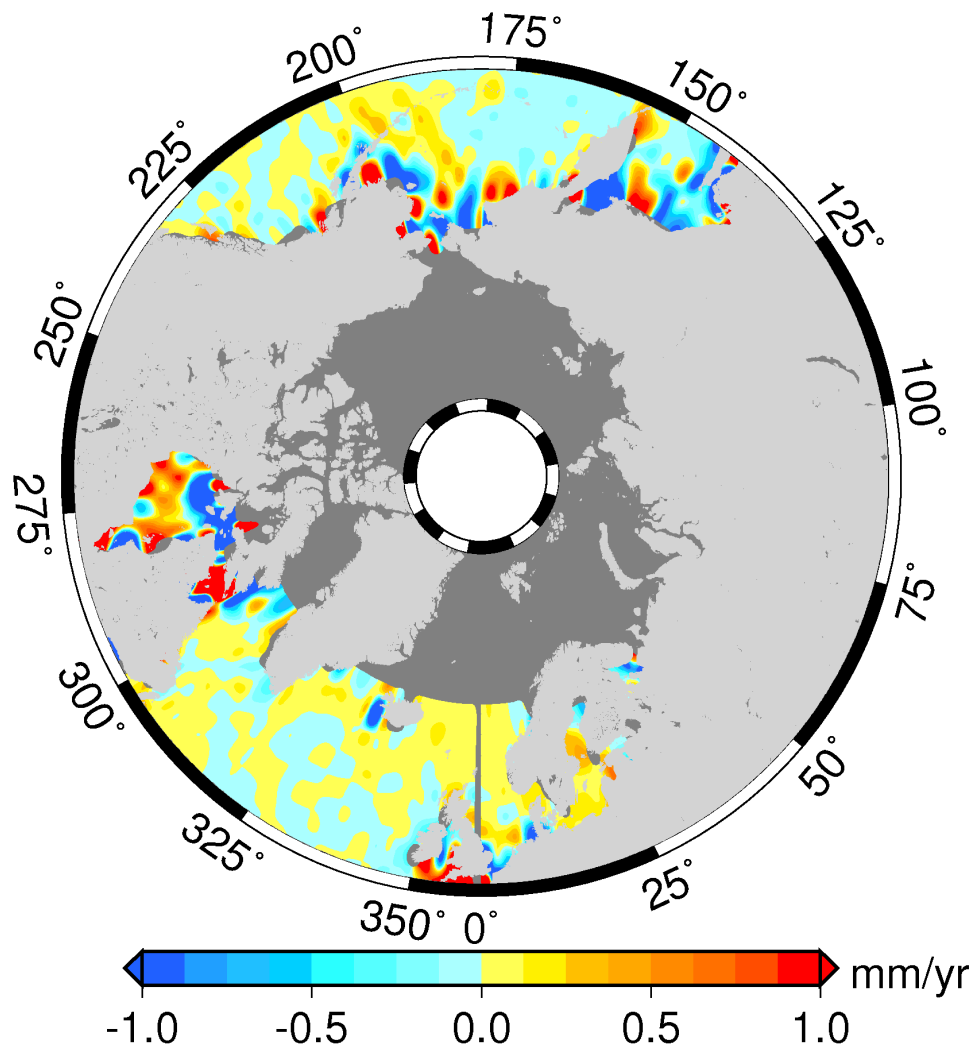
Name : Differences between maps of SLA

Input data : Along track SLA

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

Diagnostic type : Global internal analyses

Mission j1, cycles 1 to 330



Δ with TPXO72 trends - SLA with GOT4V7 trends

Diagnostic A204_c (mission j1)

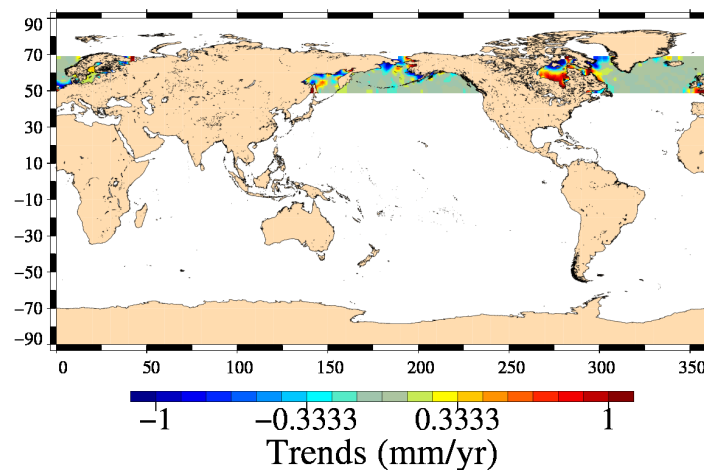
Name : Differences between maps of SLA

Input data : Along track SLA

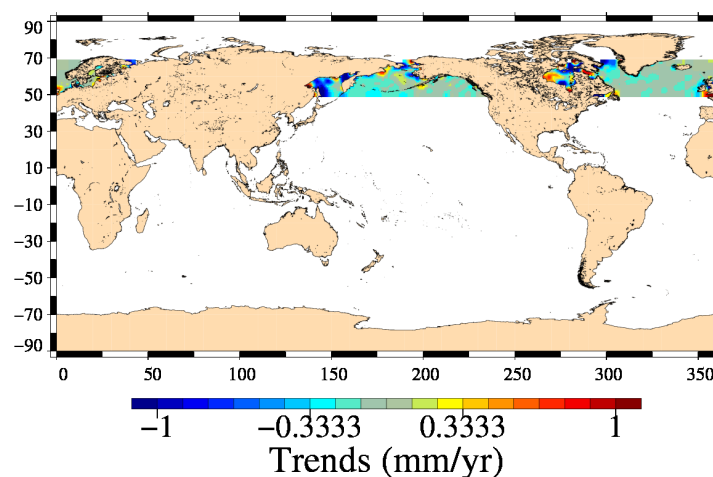
Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

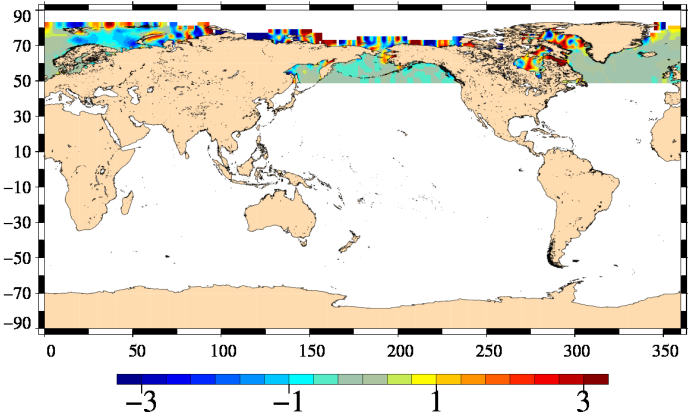
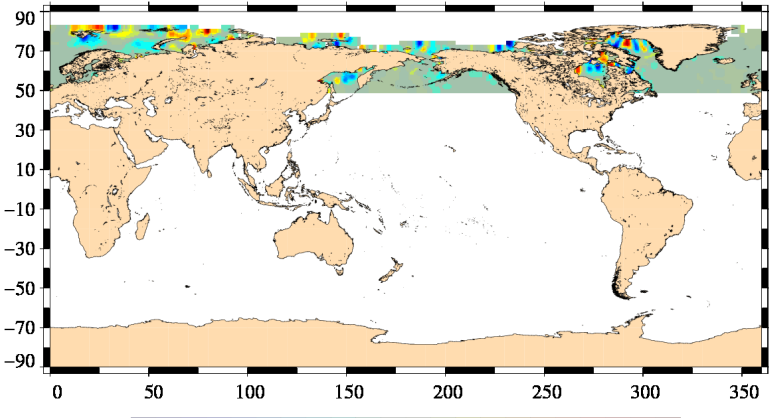
Diagnostic type : Global internal analyses

SLA with TPXO72 trends – SLA with GOT4V7 trends : even pass numbers
Mission j1, cycles 1 to 330



SLA with TPXO72 trends – SLA with GOT4V7 trends : odd pass numbers
Mission j1, cycles 1 to 330



Diagnostic type : Global internal analyses	<div>Diagnostic A205_a (mission en)</div>
	<div>Name : Differences between maps of SLA (2)</div>
	<div>Input data : Along track SLA</div>
	<div>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><div>SLA with TPXO72 amplitude – SLA with GOT4V7 amplitude : annual signal Mission en, cycles 9 to 94</div><div></div><div>Amplitude (cm)</div><div>SLA with TPXO72 phase – SLA with GOT4V7 phase : annual signal Mission en, cycles 9 to 94</div><div></div><div>Phase (degree)</div></div>

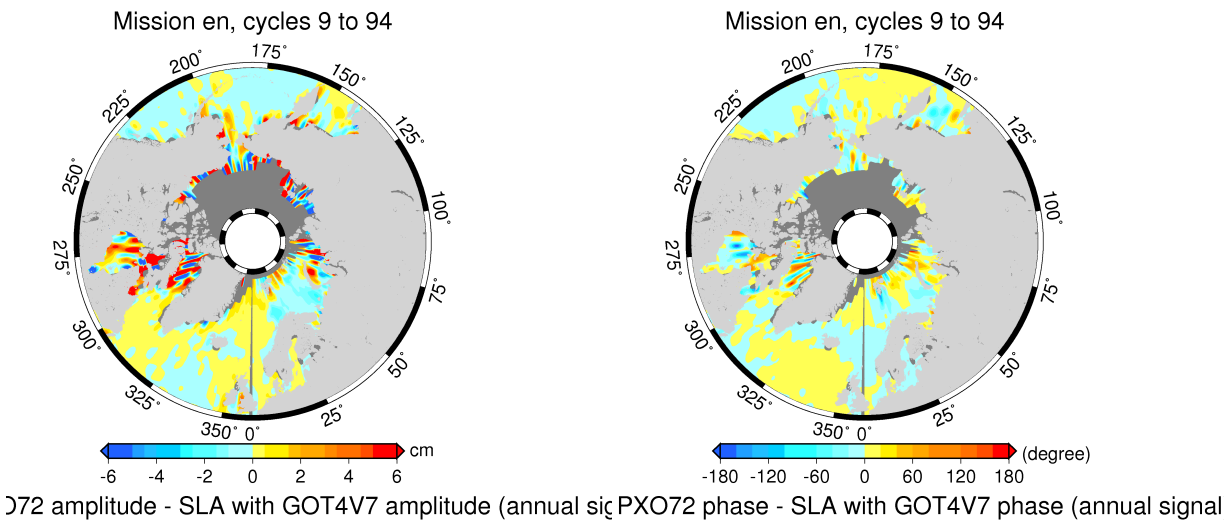
Diagnostic A205_b (mission en)

Name : Differences between maps of SLA (2)

Input data : Along track SLA

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

Diagnostic type : Global internal analyses



Diagnostic A205_c (mission en)

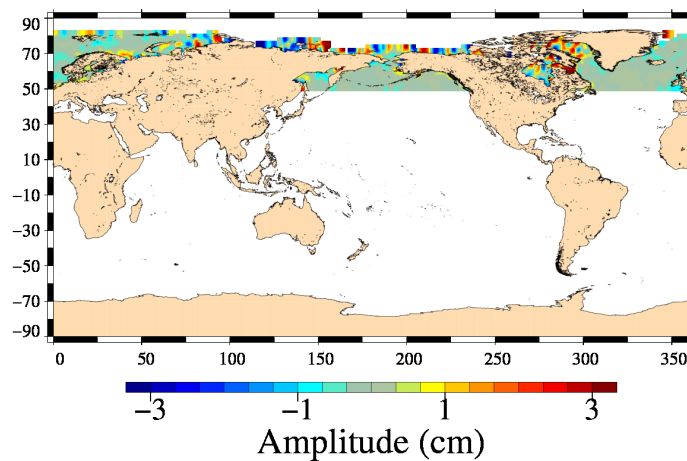
Name : Differences between maps of SLA (2)

Input data : Along track SLA

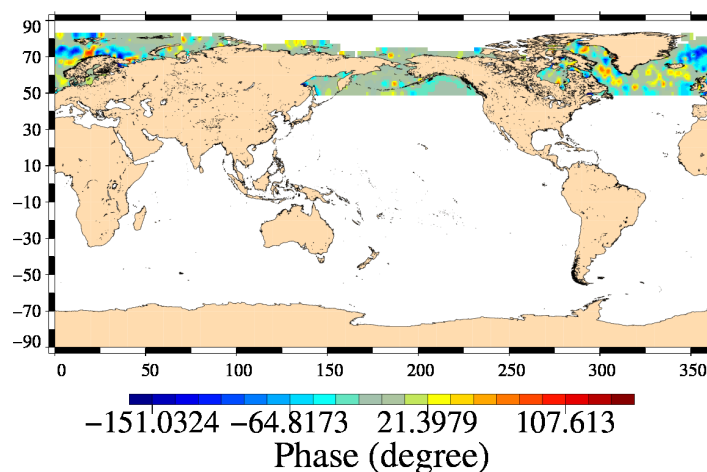
Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Global internal analyses

A with TPXO72 amplitude – SLA with GOT4V7 amplitude : semi-annual sig
Mission en, cycles 9 to 94



SLA with TPXO72 phase – SLA with GOT4V7 phase : semi-annual signal
Mission en, cycles 9 to 94



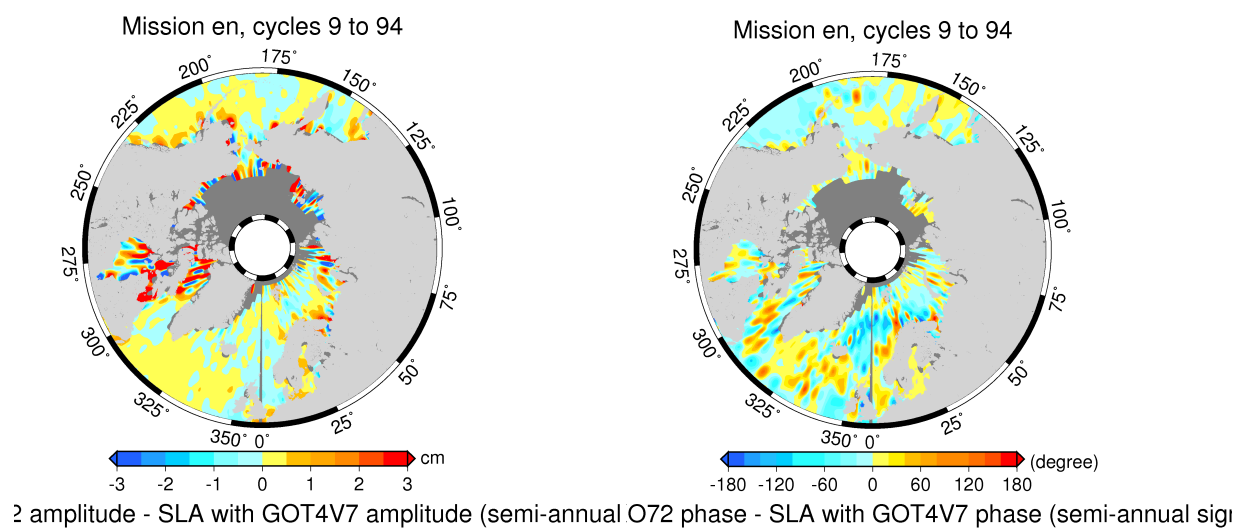
Diagnostic A205_d (mission en)

Name : Differences between maps of SLA (2)

Input data : Along track SLA

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

Diagnostic type : Global internal analyses



Diagnostic A205_a (mission j1)

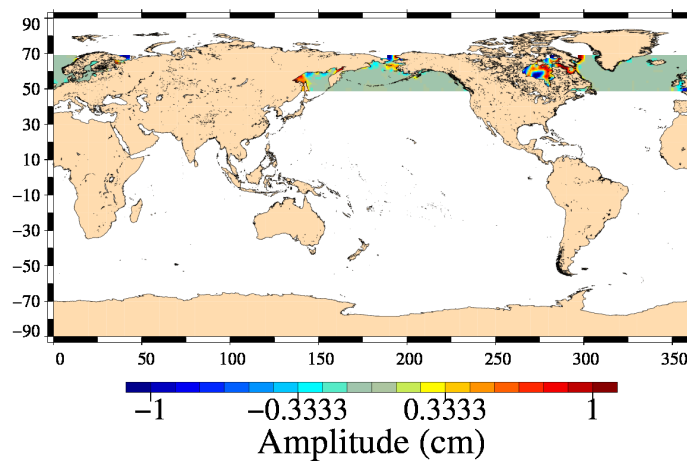
Name : Differences between maps of SLA (2)

Input data : Along track SLA

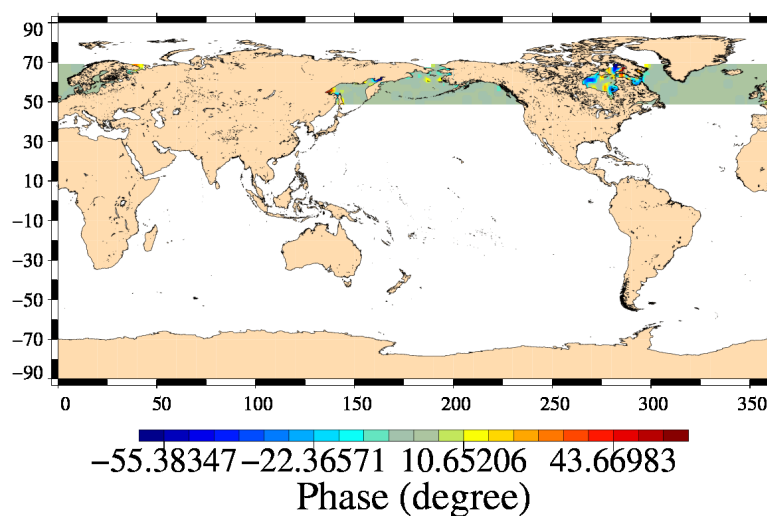
Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Global internal analyses

SLA with TPXO72 amplitude – SLA with GOT4V7 amplitude : annual signal
Mission j1, cycles 1 to 330



SLA with TPXO72 phase – SLA with GOT4V7 phase : annual signal
Mission j1, cycles 1 to 330

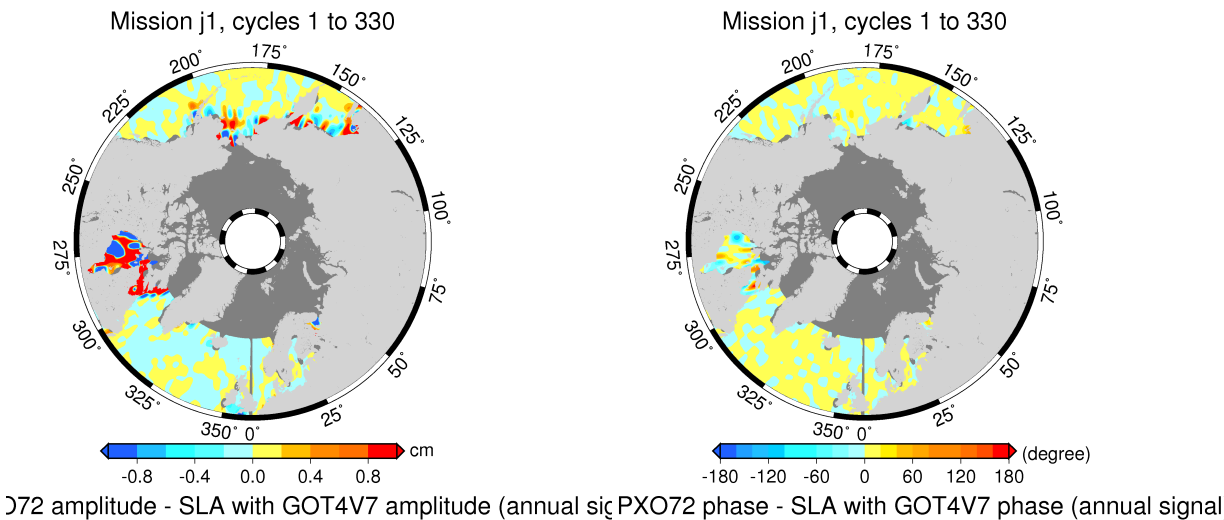


Diagnostic A205_b (mission j1)

Name : Differences between maps of SLA (2)

Input data : Along track SLA

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



Diagnostic A205_c (mission j1)

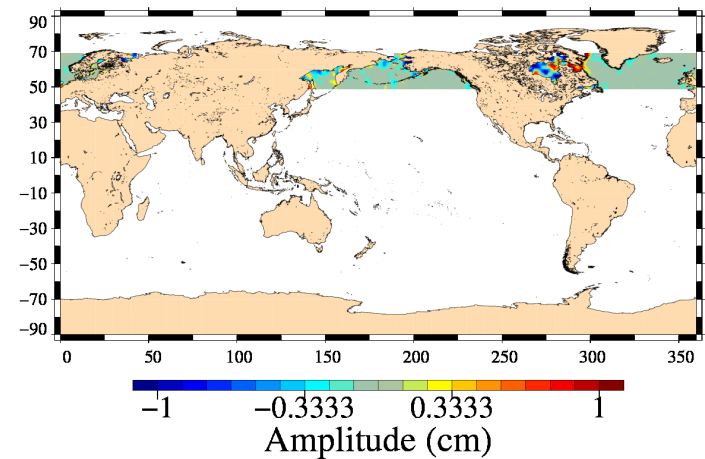
Name : Differences between maps of SLA (2)

Input data : Along track SLA

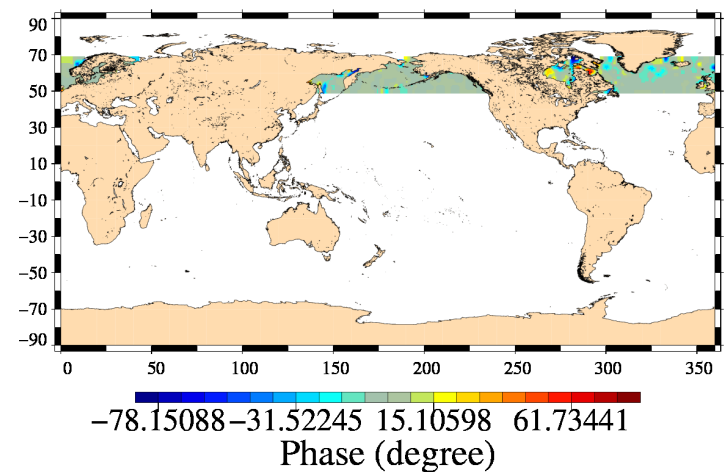
Description : The difference of SLA maps (mean, standard deviation, slope) is calculated from maps derived from diagnostic A203 using successively both altimetric components in the SLA calculation over a given period. This can be done globally, or separating in ascending and descending passes (except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

Diagnostic type : Global internal analyses

A with TPXO72 amplitude – SLA with GOT4V7 amplitude : semi-annual sig
Mission j1, cycles 1 to 330



SLA with TPXO72 phase – SLA with GOT4V7 phase : semi-annual signal
Mission j1, cycles 1 to 330



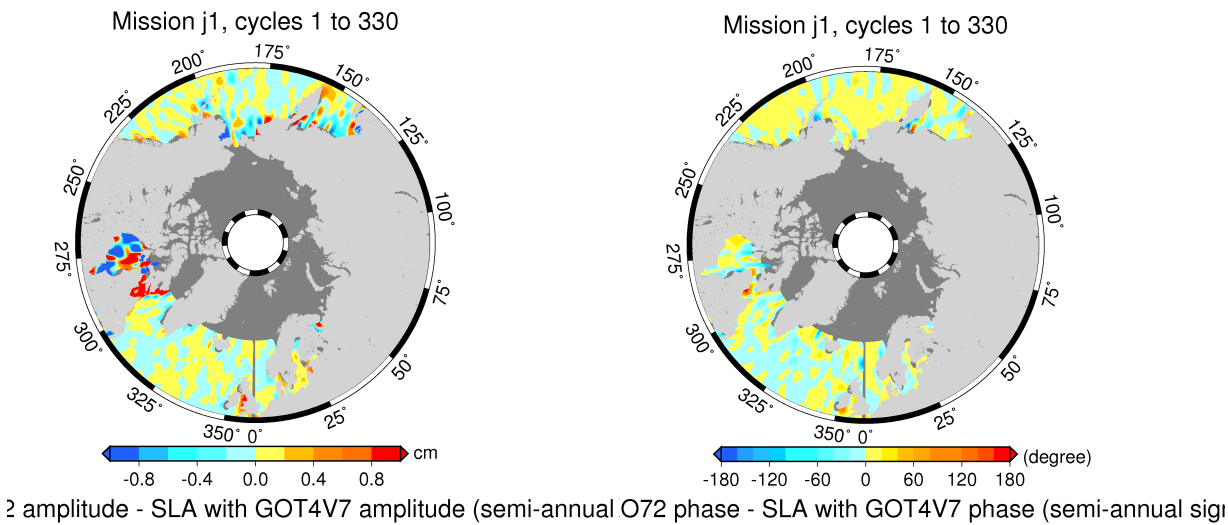
Diagnostic A205_d (mission j1)

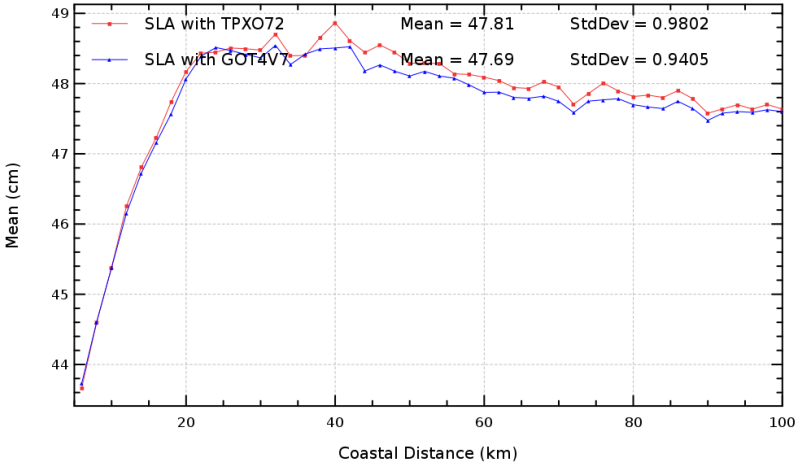
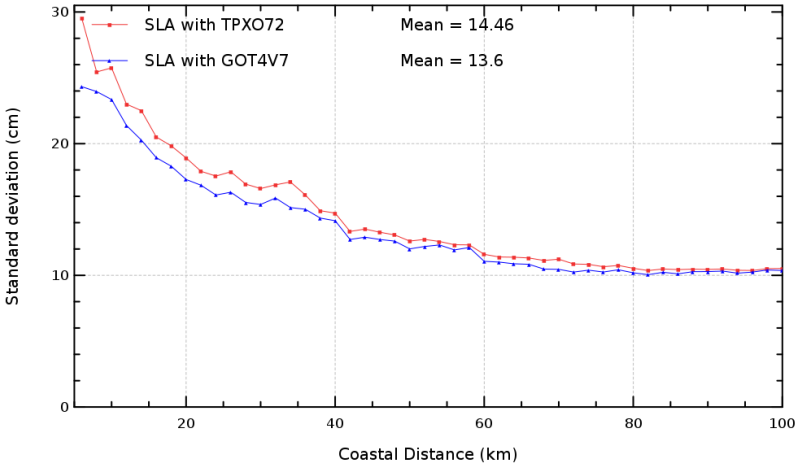
Name : Differences between maps of SLA (2)

Input data : Along track SLA

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

Diagnostic type : Global internal analyses



Diagnostic type : Global internal analyses	Diagnostic A207 (mission en)	
	Name : Sea Level Anomaly (SLA) versus coastal distance	
	Input data : Along track SLA	
	Description : Mean and standard deviation of SLA - computed by using successively both altimetric components - are plotted in function of coastal distances between 0 and 100 km.	
	<div><div>Global MSL Mission en, cycles 9 to 94</div><div>Global MSL Mission en, cycles 9 to 94</div></div>	

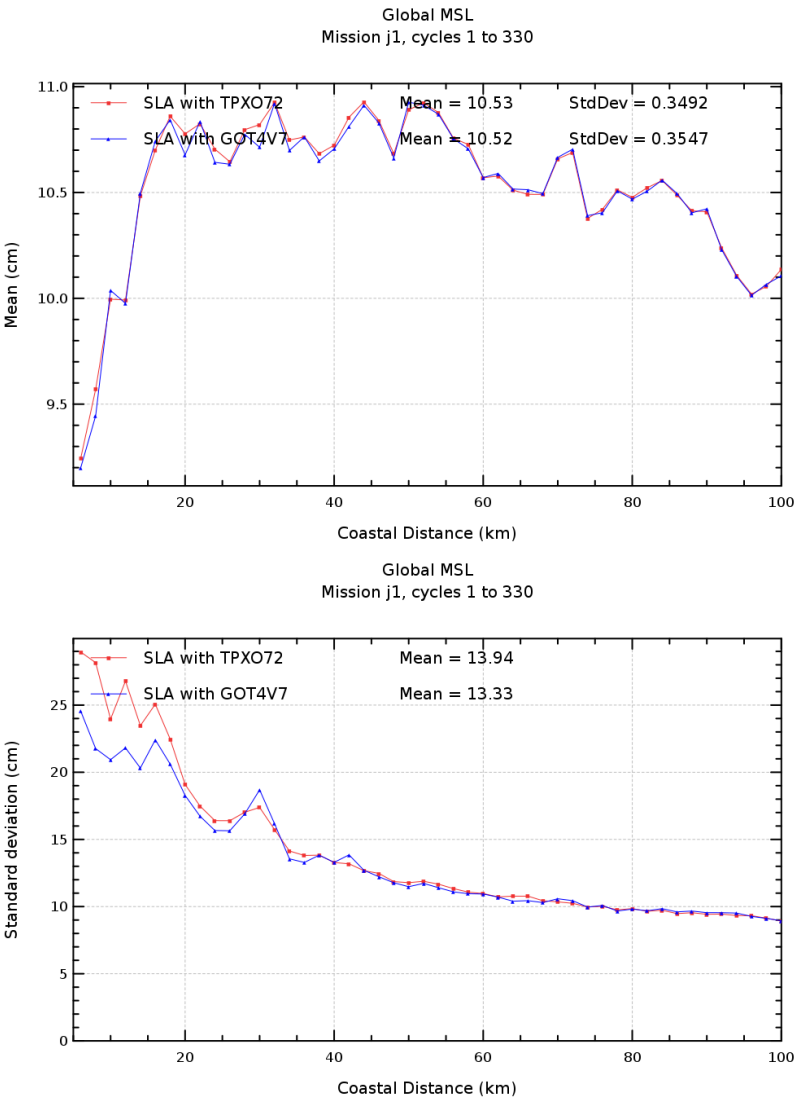
Diagnostic A207 (mission j1)

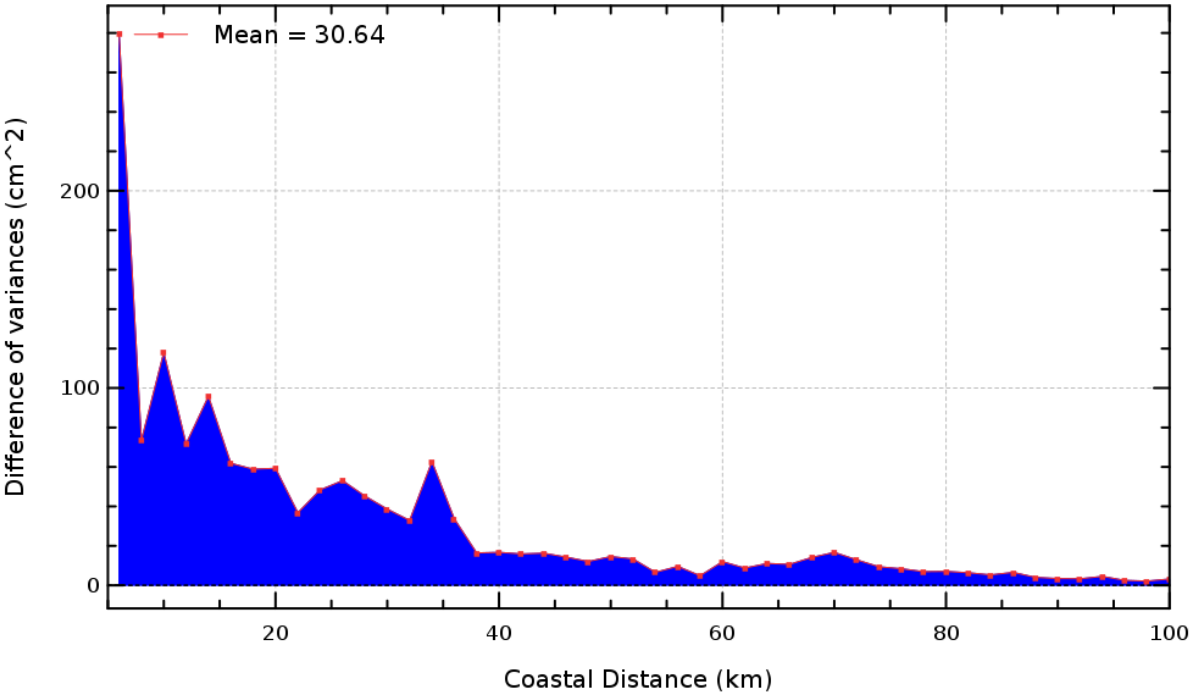
Name : Sea Level Anomaly (SLA) versus coastal distance

Input data : Along track SLA

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

Diagnostic type : Global internal analyses



Diagnostic type : Global internal analyses	Diagnostic A208 (mission en)
	Name : Sea Level Anomaly (SLA) differences versus coastal distance
	Input data : Along track SLA
	Description : The differences of SLA variances - computed by using successively both altimetric components - are plotted in function of coastal distances between 0 and 100 km.
	<div>VAR(SLA with TPX072) - VAR(SLA with GOT4V7) Mission en, cycles 9 to 94</div> 

Diagnostic A208 (mission j1)

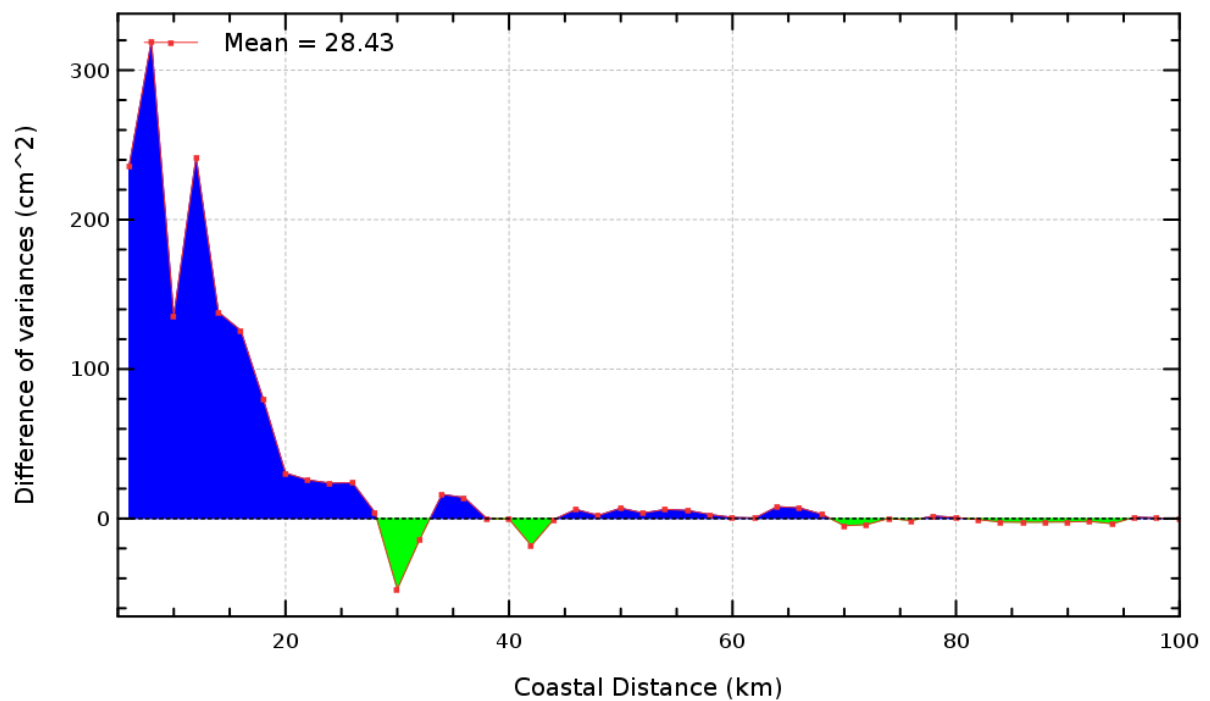
Name : Sea Level Anomaly (SLA) differences versus coastal distance

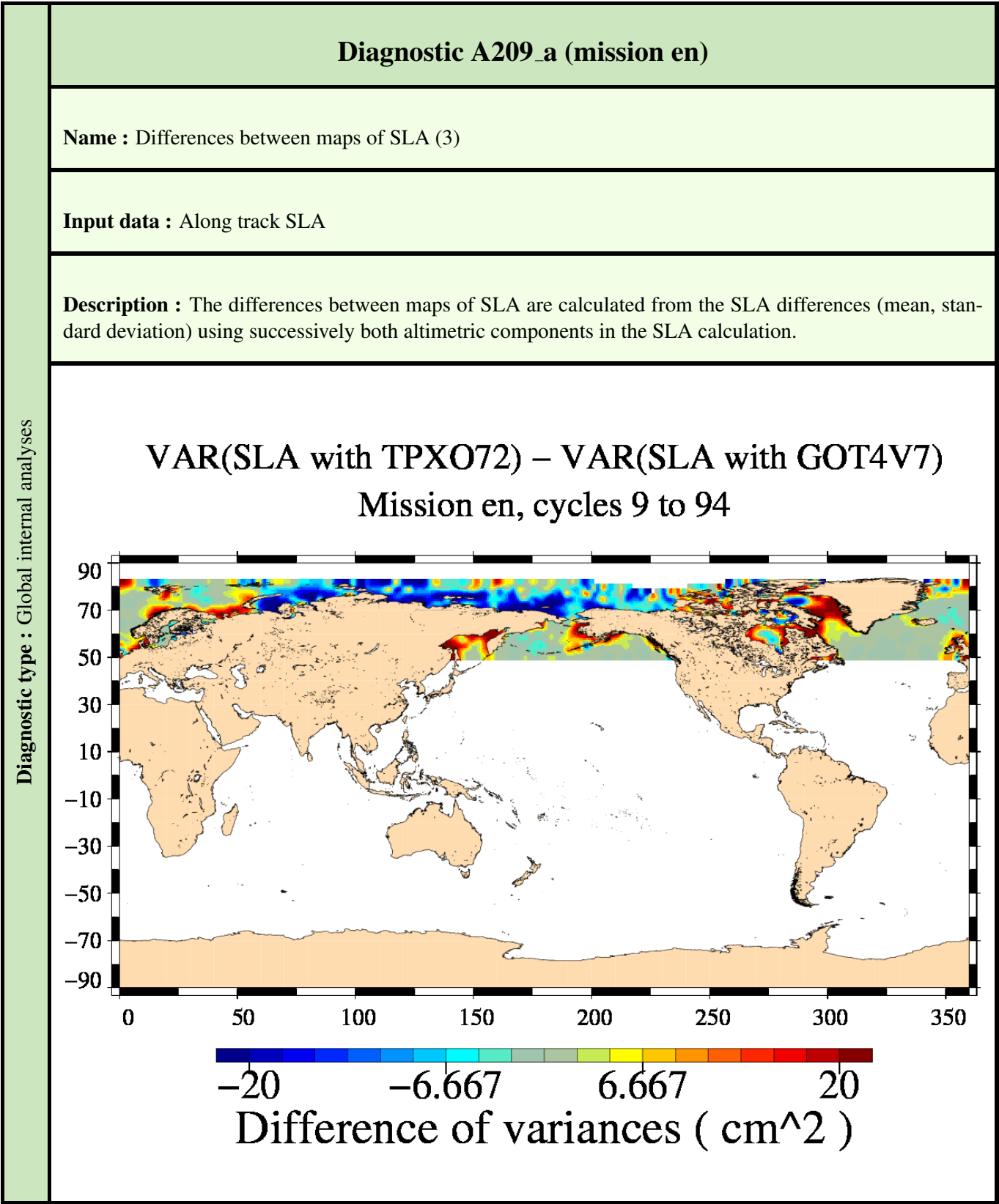
Input data : Along track SLA

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

Diagnostic type : Global internal analyses

VAR(SLA with TPX072) - VAR(SLA with GOT4V7)
Mission j1, cycles 1 to 330





Diagnostic A209_b (mission en)

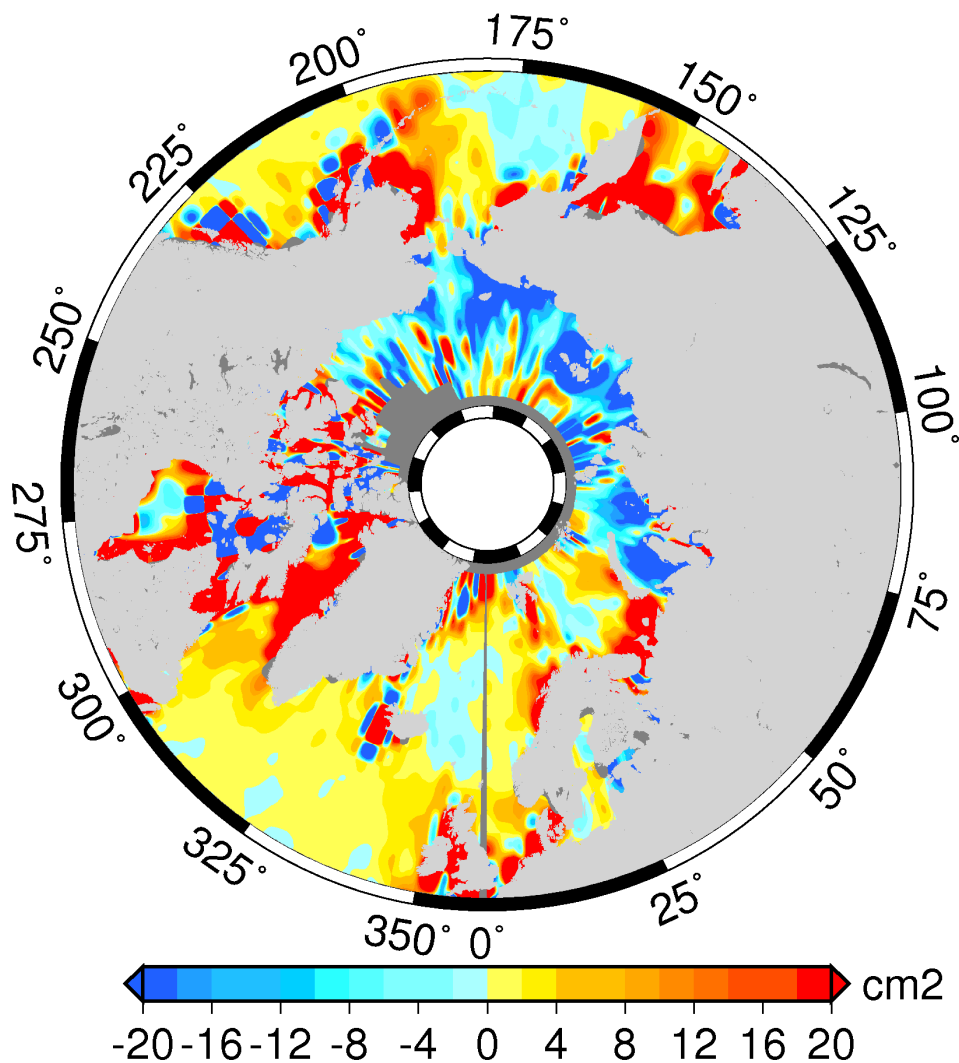
Name : Differences between maps of SLA (3)

Input data : Along track SLA

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

Diagnostic type : Global internal analyses

Mission en, cycles 9 to 94



$\text{VAR}(\text{SLA with TPXO72}) - \text{VAR}(\text{SLA with GOT4V7})$

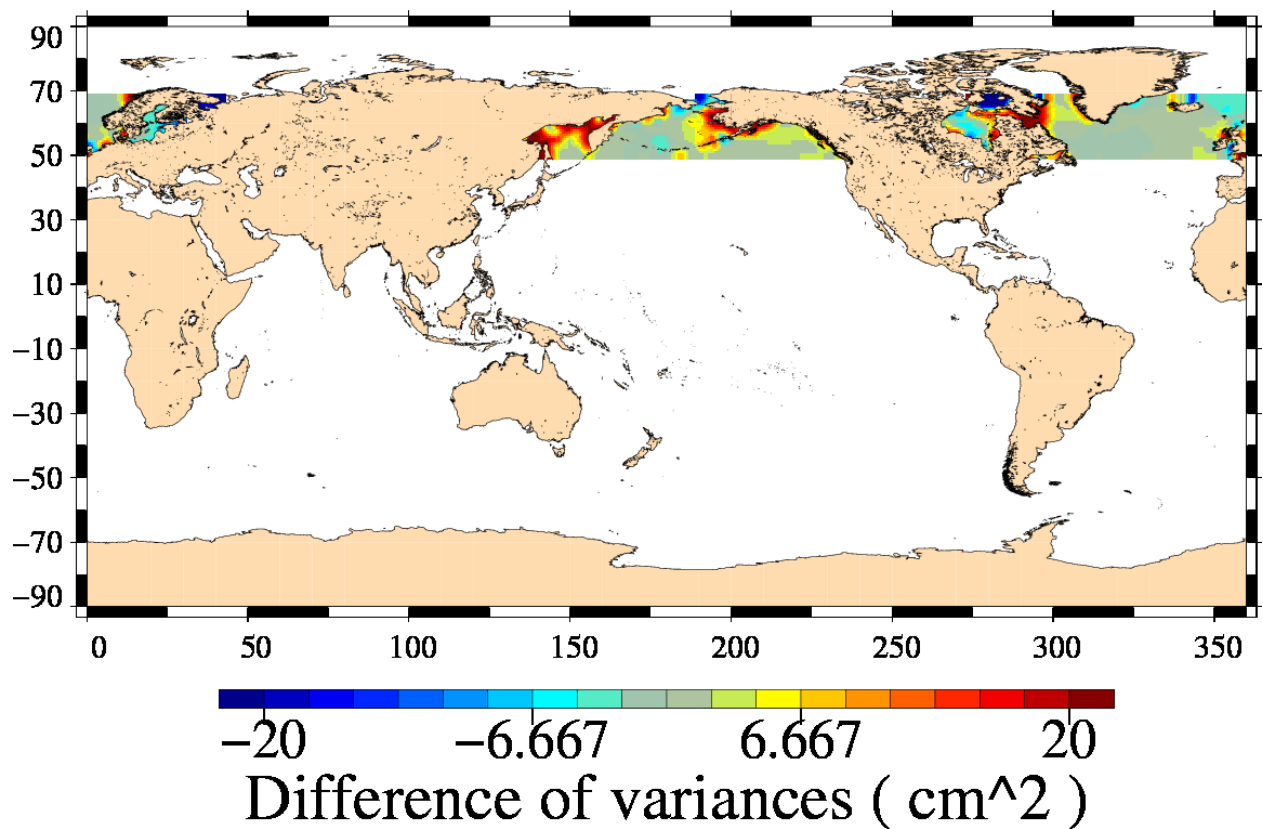
Diagnostic A209_a (mission j1)

Name : Differences between maps of SLA (3)

Input data : Along track SLA

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

VAR(SLA with TPXO72) – VAR(SLA with GOT4V7)
Mission j1, cycles 1 to 330



Diagnostic type : Global internal analyses

Diagnostic A209_b (mission j1)

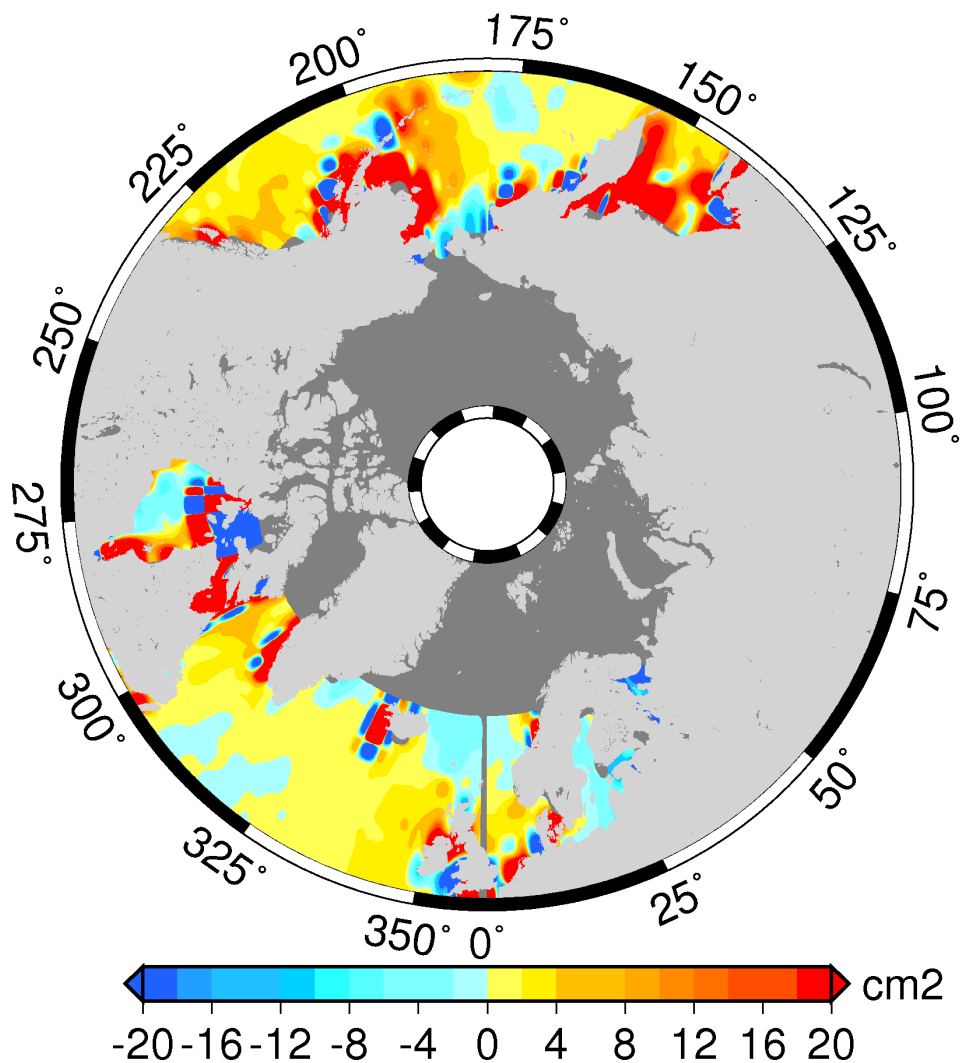
Name : Differences between maps of SLA (3)

Input data : Along track SLA

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

Diagnostic type : Global internal analyses

Mission j1, cycles 1 to 330



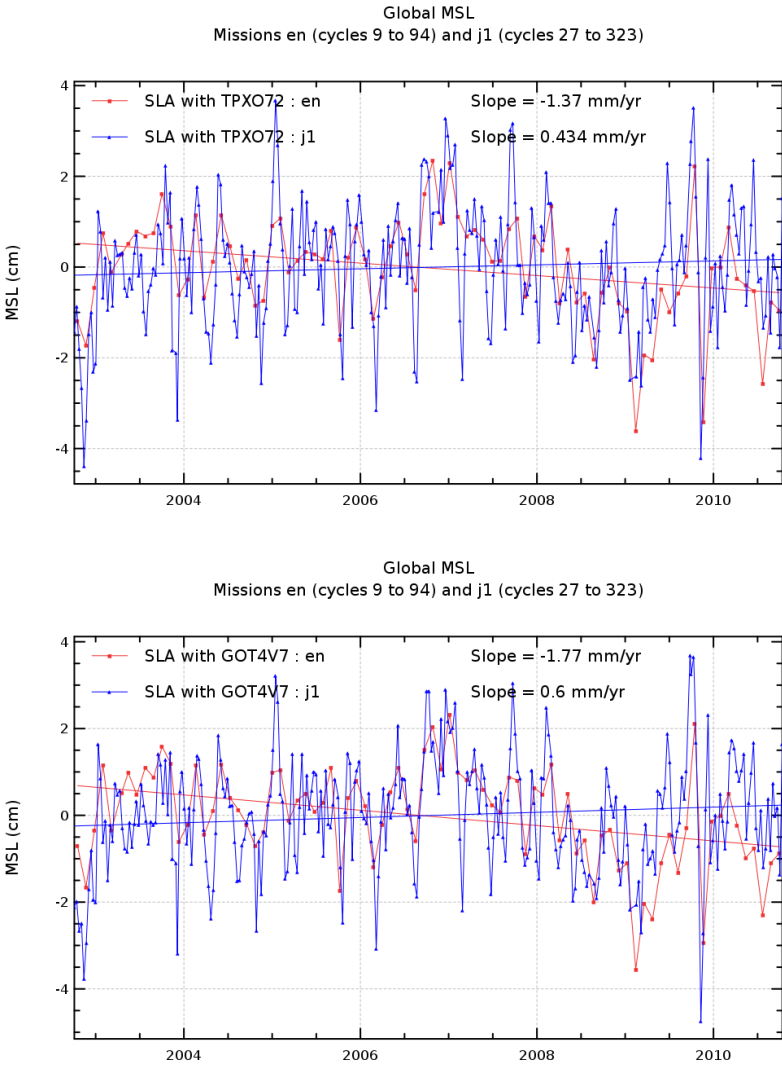
$\text{VAR}(\text{SLA with TPXO72}) - \text{VAR}(\text{SLA with GOT4V7})$

Diagnostic B201_a

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

Input data : Along track SLA

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



Diagnostic B201_b

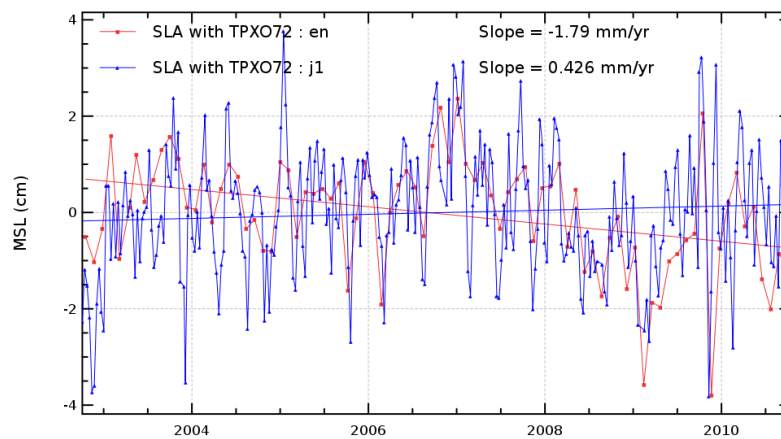
Name : Temporal evolution of Sea level Anomaly (SLA) for 2 missions over the same period

Input data : Along track SLA

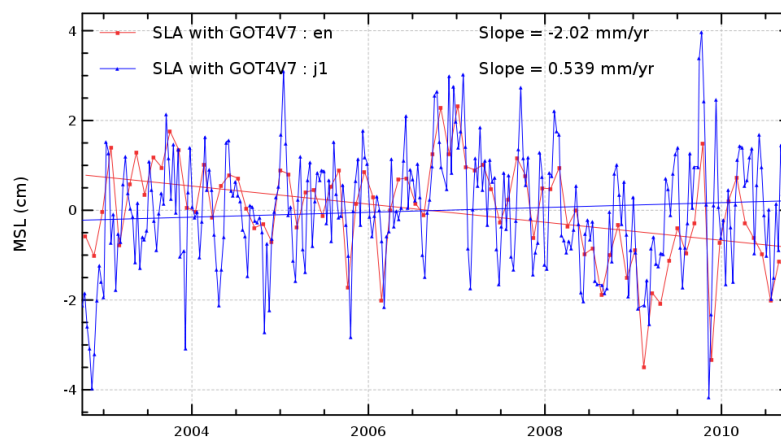
Description : Temporal evolution of SLA statistics (mean, standard deviation) of 2 or more missions are computed over the same period as longest as possible using successively both components in the SLA calculation. This can be done globally, or separating in ascending and descending or in northern and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

Diagnostic type : Global multi-mission comparisons

Global MSL, selecting even pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)



Global MSL, selecting even pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)



Diagnostic B201_c

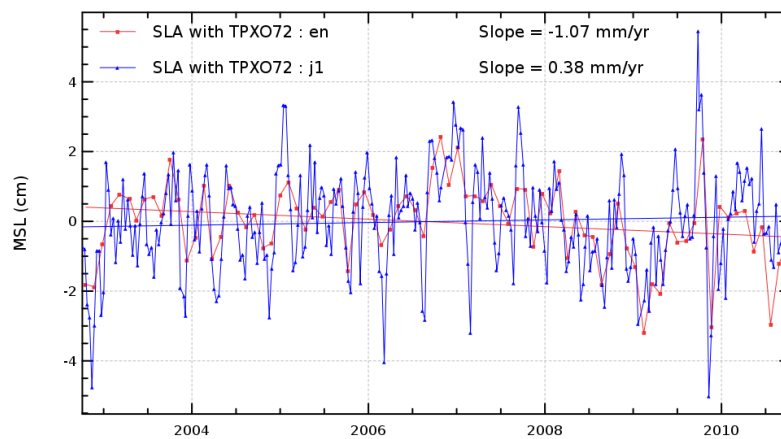
Name : Temporal evolution of Sea level Anomaly (SLA) for 2 missions over the same period

Input data : Along track SLA

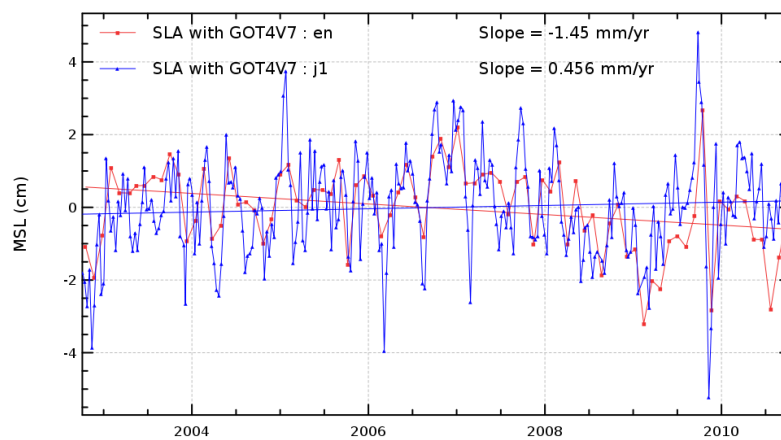
Description : Temporal evolution of SLA statistics (mean, standard deviation) of 2 or more missions are computed over the same period as longest as possible using successively both components in the SLA calculation. This can be done globally, or separating in ascending and descending or in northern and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

Diagnostic type : Global multi-mission comparisons

Global MSL, selecting odd pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)

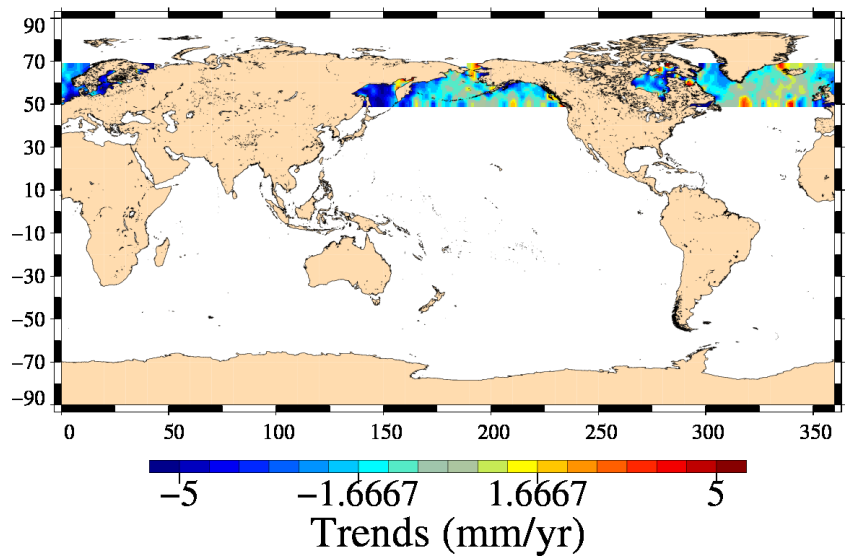


Global MSL, selecting odd pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)

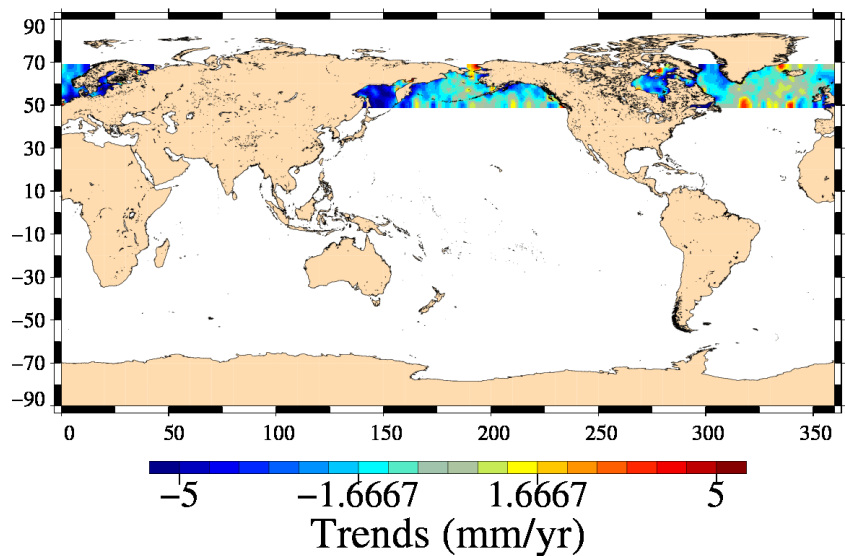


Diagnostic B202_a
Name : Differences between maps of Sea Level Anomaly (SLA) for 2 missions over the same period
Input data : Along track SLA
Description : The differences between maps of SLA (mean, variance or slope) derived from 2 altimetric missions are computed over the same period (as long as possible) using successively both altimetric components in the SLA calculation. Maps are calculated globally, they can be also calculated separating ascending and descending passes.

SLA with TPXO72 differences : en – j1
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)



SLA with GOT4V7 differences : en – j1
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)



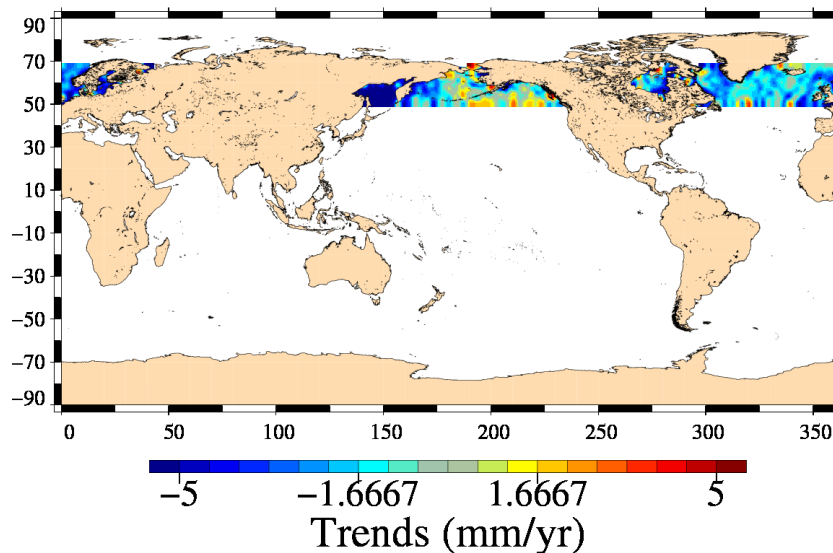
Diagnostic B202_b

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

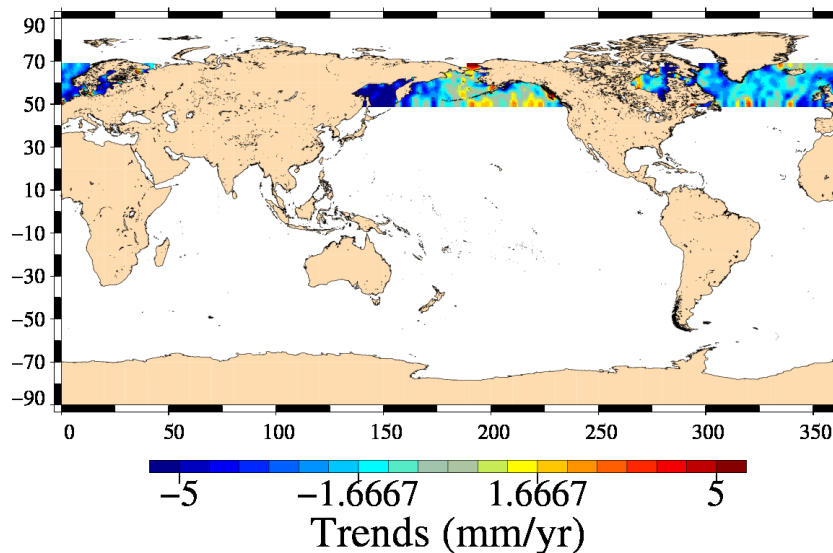
Input data : Along track SLA

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

SLA with TPXO72 differences : en – j1, even pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)



SLA with GOT4V7 differences : en – j1, even pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)



Diagnostic B202_c

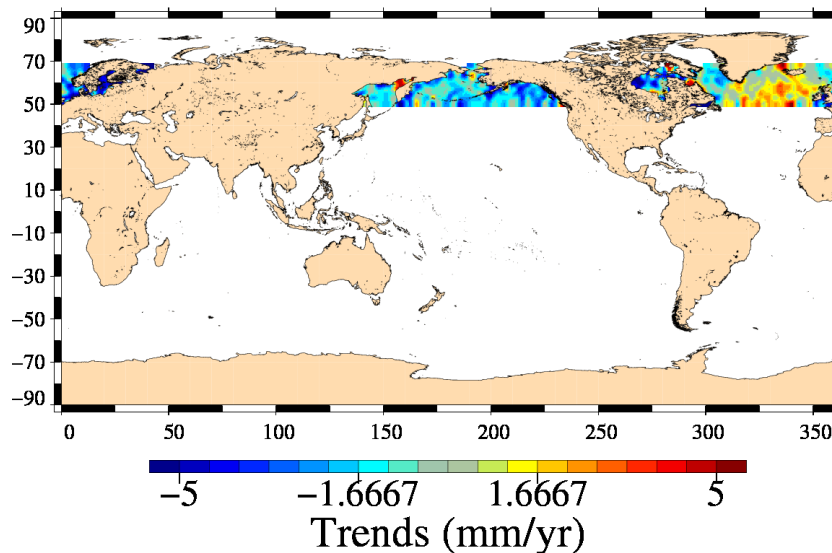
Name : Differences between maps of Sea Level Anomaly (SLA) for 2 missions over the same period

Input data : Along track SLA

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

Diagnostic type : Global multi-mission comparisons

SLA with TPXO72 differences : en – j1, odd pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)



SLA with GOT4V7 differences : en – j1, odd pass numbers
Missions en (cycles 9 to 94) and j1 (cycles 27 to 323)

