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Title : **IDEAS+ – SMOS Public Monthly Report - June 2015**

Abstract : This document provides a summary of the status and performance of SMOS over the course of the reporting month.

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TABLE OF CONTENTS

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AMENDMENT POLICY

This document shall be amended by releasing a new edition of the document in its entirety. The Amendment Record Sheet below records the history and issue status of this document.

AMENDMENT RECORD SHEET

ISSUE	DATE	DCI No	REASON
1	20 July 2015	N/A	First release

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1. EXECUTIVE SUMMARY

This is the routine Soil Moisture and Ocean Salinity (**SMOS**) Monthly Public Report containing a summary of the instrument health, product quality status and updates to SMOS processing and AUX files during June 2015.

The instrument health during May was found to be nominal. There were four unavailabilities reported during the reporting period that translate into time intervals with data loss or degraded data. The list of unavailabilities is included in the section 3.2.

The data quality during June was found to be nominal, with the exceptions listed in section 4.5. These degraded periods have been induced either by instrument anomalies or unavailability of dynamic auxiliary files.

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2. INTRODUCTION

2.1 Structure of the Document

After this introduction, the document is divided into a number of major sections that are briefly described below:

1 Executive summary

The executive summary covers the main findings from the report.

2 Introduction

A list of referenced documents and definitions of terms are available.

3 Instrument status

This section covers the instrument health and unavailabilities from this reporting period.

4 Data Summary

This section covers reprocessing, updates to processors and aux files as well as a data coverage summary.

5 Long Term Analysis

Long-term analysis of the instrument calibration and data quality are provided in this section.

2.2 Definitions of Terms

The following terms have been used in this report with the meanings shown.

Term	Definition
CMN	Control and Monitoring Node, responsible for commanding the receivers, reading their physical temperatures and telemetry and the generation of the synchronization signal (local oscillator tone) among receivers.
CCU	Correlator and Control unit, instrument computer on-board
DPGS	Data Processing Ground Segment
ESL	Expert Science Laboratory
IC4EC	Internal Calibration for External calibration. Calibration sequences for the instrument monitoring and calibration of science data acquired in external target pointing.
IDEAS	Instrument Data quality Evaluation and Analysis Service, reporting to the ESA Data Quality and Algorithms Management Office (EOP-GQ), responsible for quality of data provided to users including the data calibration and validation, the data processing algorithms, and the routine instrument and processing chain performances.
IPF	Instrument Processor Facility

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L2SM	Level 2 Soil Moisture
MM	Mass Memory
OCM	Orbit Correction Manoeuvre
PMS	Power Measurement System
RFI	Radio Frequency Interference
N/A	Not applicable

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3. INSTRUMENT STATUS

3.1 Instrument health

The current instrument status is that all the **instrument** subsystems are working correctly. The current configuration of the instrument is that the arm A and the arm B are working in nominal side and arm C is in the redundant side.

Table 3-1 History of instrument problems and mode changes

Start	Stop	Description
11 January 2010 12:07z Orbit 1013	N/A	Arm A changes from redundant to nominal side. That operation is to avoid the malfunction of one of the redundant CMNs of the arm.
12 January 2011 09:15z Orbit 6278	N/A	Arm B changes from redundant to nominal side. That operation is to avoid the malfunction of one of the redundant CMNs of the arm.

3.2 Instrument unavailabilities and anomalies

The unavailabilities and anomalies listed in Table 3-2 occurred during the reporting period. A full list of unavailabilities can be found in the Mission Status section on the SMOS Earthnet website (http://earth.esa.int/object/index.cfm?fobjectid=7060).

During these unavailabilities and anomalies the instrument may have either not collected data or may have collected corrupt data which may not have been processed to higher levels. Table 4-5, Table 4-6 and Table 4-7 provide details of the data which has been affected by gaps and quality degradation respectively.

Table 3-2 SMOS unavailability list

Start		Stop		Unavailability Report Reference	Planned	Description
Time	Orbit	Time	Orbit			
23/06/2015 09:03	29631	23/06/2015 09:03	29631	FOS-0331	No	MM Latch up
23/06/2015 23:32	29640	23/06/2015 23:51	29640	FOS-0332	Yes	OCM

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24/06/2015 20:00	29652	24/06/2015 20:00	29652	FOS-0333	Yes	MM Latchup Recovery
30/06/2015 04:42	29729	30/06/2015 06:21	29730	FOS-0334	No	CCU Reset

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4. DATA SUMMARY

4.1 Reprocessing activities

The information regarding to data reprocessing activities (REPR data type) during the reporting period are:

1) None

The information regarding to the data regeneration activities (OPER data type) during the reporting period are:

1) Due a hardware anomaly in one DPGS system gaps and delays in the processing were introduced. As a result, no data has been produced between 20150607T021309 and 20150607T104308 and between 20150607T122309 and 20150607T154308. Therefore regeneration of science data was needed.

2) From 20150608T005037 to 20150608T082409, L1C has been produced without VTEC data due a delay in the VTEC-P processing. This data was regenerated with proper VTEC information.

The information regarding to past version 62x data reprocessing activities (REPR data type) are:

1) The second SMOS mission reprocessing for L1 v62x data has been performed in several stages. Phase one started on 2014-07-10, and finished on 2014-09-04, phase two started on 2015-03-25 and finished on 2015-04-12. The sensing time of the reprocessed data is from 12 January 2010 to 29 January 2015. The data set is available for the SMOS user community since 7 May 2015 (see the SMOS news: https://earth.esa.int/web/guest/missions/esa-operational-eo-missions/smos/news/-/article/smos-level-1-algorithm-baseline-v620-reprocessed-dataset-now-available). The SMOS data users are strongly encouraged to consult the level 1 read-me-first note before using the SMOS data. The level 1 read-me-first note is available here: https://earth.esa.int/documents/10174/1854503/SMOS_L1OPv620_release_note

The information regarding to the past version V62x data regeneration activities (OPER data type) are:

1) No past regeneration activities (v62x OPER data type).

The information regarding the past version V5xx data regeneration and reprocessing activities (OPER and REPR data type) are available in the monthly report of April 2015.

4.2 Processing changes

4.2.1 Processor updates

No processor updates have been conducted during the reporting period.

4.2.2 Processor Status

At the end of the reporting period, the Processing Facility is using the following processors:

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Table 4-1 Instrument Processors status

Processor	Version
L1OP	620 (L1a/L1c/NIRCAL) 621 (L1b/CAL_1A)
L2OS	622
L2SM	620

Table 4-2 Pre- and Post-processors status

Processor	Version
ECMWFP	318
VTECGN	311
LAI pre-processor	307
OSCOTT	624
L2 Post-processors	510

4.2.3 Schema updates

No schema changes have been conducted during the reporting period.

4.2.4 Schema status

At the end of the reporting period, the schema version of the datablock of the products generated and distributed through SMOS dissemination service is:

Table 4-3 Schema version status

Product type	Version
MIR_SC_F1B	400
MIR_SCSF1C	400
MIR_SCLF1C	400
MIR_BWSF1C	400
MIR_BWLF1C	400
MIR_SMUDP2	400

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MIR_OSUDP2	400
AUX_ECMWF_	300

The schema packages are available from the SMOS Global Mapping Tool (GMT) webpage:

https://earth.esa.int/web/guest/software-tools/-/asset_publisher/P2xs/content/gmt-smos-global-mapping-tool

Further information about the product format is available in the level 1 and level 2 Product specification documents available here: https://earth.esa.int/web/guest/-/data-types-levels-formats-7631

4.2.5 Aux file updates

The following quasi-static AUX files were disseminated to the processing stations this reporting period. The status of the quasi-static AUX files at the end of the reporting period is in the section 7.

SM_OPER_AUX_BULL_B_20150402T000000_20150501T235959_120_001_3

Start sensing time at L1 processor: N/A

Justification: Bulletin Update including values from April 2015 and the prediction for June 2015. Its usage is intended for reprocessing.

SM_OPER_AUX_BULL_B_20150402T000000_20500101T000000_120_001_3

Start sensing time at L1 processor: 2015-06-03 06:43:58z

Justification: Bulletin Update including values from April 2015 and the prediction for June 2015. Its usage is intended for the nominal production.

SM_OPER_AUX_BULL_B_20150402T000000_20500101T000000_120_002_3

Start sensing time at L1 processor: 2015-06-25 07:18:48z

Justification: Bulletin Update including values from April 2015 and the prediction for June 2015. Its usage is intended for the nominal production. This file introduces the leap second for 1st July 2015.

4.3 Calibration Events Summary

The following table summarizes the major calibration activities conducted during the reporting period. The Local Oscillator calibration is not included in the table since occurs periodically every 10 minutes. The short calibrations are acquired weekly since 2011-03-24 and they are currently used in the nominal processing chain.

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Table 4-4 Calibration summary

Date	Start Time	Stop Time	Calibration	Comments
03/06/15	05:20:53.400	06:43:06.600	NIR-WARM	BT: 3.494263 K RMS: 0.100953 K Moon elevation: -12.854224 Sun elevation: 8.392887 RA: 168.055357 Declination: 39.10048
04/06/15	16:00:00.000	16:01:44.400	Short	
11/06/15	18:07:10.000	18:08:54.400	Short	
17/06/15	02:56:53.400	04:19:06.600	NIR-WARM	BT: 3.488530 K RMS: 0.113430 K Moon elevation: 10.767108 Sun elevation: 8.771217 RA: 180.910721 Declination: 35.297382
18/06/15	13:34:00.000	13:35:44.400	Short	
25/06/15	15:39:00.000	15:40:44.400	Short	
27/06/15	04:50:23.400	06:12:36.600	NIR-WARM	BT: 3.520800 K RMS: 0.142600 K Moon elevation: 45.065100 Sun elevation: 7.048000 RA: 188.909866 Declination: 25.668623
27/06/15	14:25:00.000	15:18:19.200	Long	
27/06/15	16:05:00.000	16:58:19.200	Long	
29/06/15	12:38:47.200	14:04:26.800	FTR	BT: 3.654832 K RMS: 0.051750 K Moon elevation: -20.503313 Sun elevation: -9.013662 RA: 12.873652 Declination: -34.043568

4.4 Data Coverage Summary

Where instrument unavailabilities or anomalies have occurred during this reporting period, gaps in data coverage may have occurred. A list of the gaps due to a permanent data loss is given in Table 4-5 by product level. On the other hand, a list of gaps due to operational problems is given in Table 4-6. The latter gaps may be recovered when the problem is fixed.

The science data gaps due to the execution of calibration activities are not listed in this section.

Table 4-5 Data loss summary

Start	Finish	Data Level	Comments
30/06/2015 04:42 29729	30/06/2015 06:21 29730	All Products	CCU Reset

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Table 4-6 Operational gaps summary

Start	Finish	Data Level	Comments
23/06/2015 23:32 29640	23/06/2015 23:51 29640	All products	OCM manoeuvre

4.5 Summary of degraded data

In June 2015, SMOS data was affected by the following instrument and processing anomalies which have had a detrimental effect on the data quality.

Table 4-7 Summary of degraded data

Start	Finish	Affected products	Problem Description
2015-06-03 06:43	2015-06-12 08:14	All products	usage of corrupted NIR calibration into science data processing

4.6 Product Quality Disclaimers

The following product disclaimers affects the data generated in the reporting period:

Table 4-8 Summary of product quality disclaimers

Date	
From 3rd June 2015 To: 12th June 2015	Due to an anomaly in the NIR calibration occurred on 3rd June SMOS data from sensing time 2015-06-03 06:43 UTC to sensing time 2015-06-12 08:14 UTC are degraded. The L1C data will be regenerated in the next weeks and disseminated to the users by the nominal SMOS data dissemination service. The L2 degraded data set will be corrected in the next level 2 reprocessing campaign. For more information see the SMOS news here.
N/A	Due to a software anomaly in the Level 0 processor, the *Cycle, orbit relative and orbit absolute* fields in all the product headers are incorrectly set. Those values are annotated in the headers of all the higher level products.

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5. LONG-TERM ANALYSIS

5.1 Calibration Analysis

The calibration parameters are under monitoring. During the reporting period, there have been three Warm-NIR calibrations events on 3rd, 17th and 27th of June 2015.

The NIR calibration events have been monitored and the noise injection levels of the NIR diodes are stable and inside the range defined in the routine calibration plan. For the NIR calibration on 3rd June 2015 a Radio Frequency Interference (RFI) has corrupted the measurement and this explain the deviation of the calibration parameters from the nominal trends. This calibration should not be used for the scientific processing of the data.

The evolution of the noise temperature of the reference noise diodes Tna and Tnr computed with processor baseline V62x since the beginning of the mission is shown from Figure 1 to Figure 4. The evolution of the temperature parameters, which are related to the internal diode stability, are stable in particular for the NIR CA which is the only one used for the level 1 data calibration. The seasonal evolution of the calibration parameters present in the previous processor baseline V5xx (see the previous monthly report for April 2015) had been largely mitigated by the new calibration algorithm which decouple the variation of the antenna losses and the drift of the reference diode. This approach allows to compensate each drift separately improving the diode stability monitoring and increasing the accuracy of the consequent calibration correction. The impact on the final brightness temperature is a more stable long term measurement.

The leakage and cross-coupling factors of the NIR channels remain small and no problems can be observed apart from a peak in the phase of the NIR-AB cross-coupling term on 11 April 2012. That peak corresponds to an anomaly in the NIR-AB that did not have impact on the data.

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Figure 1 Tna evolution of NIR AB (blue), NIR BC (green) and NIR CA (red) in the H-channel since the beginning of the mission. Thresholds in dashed lines

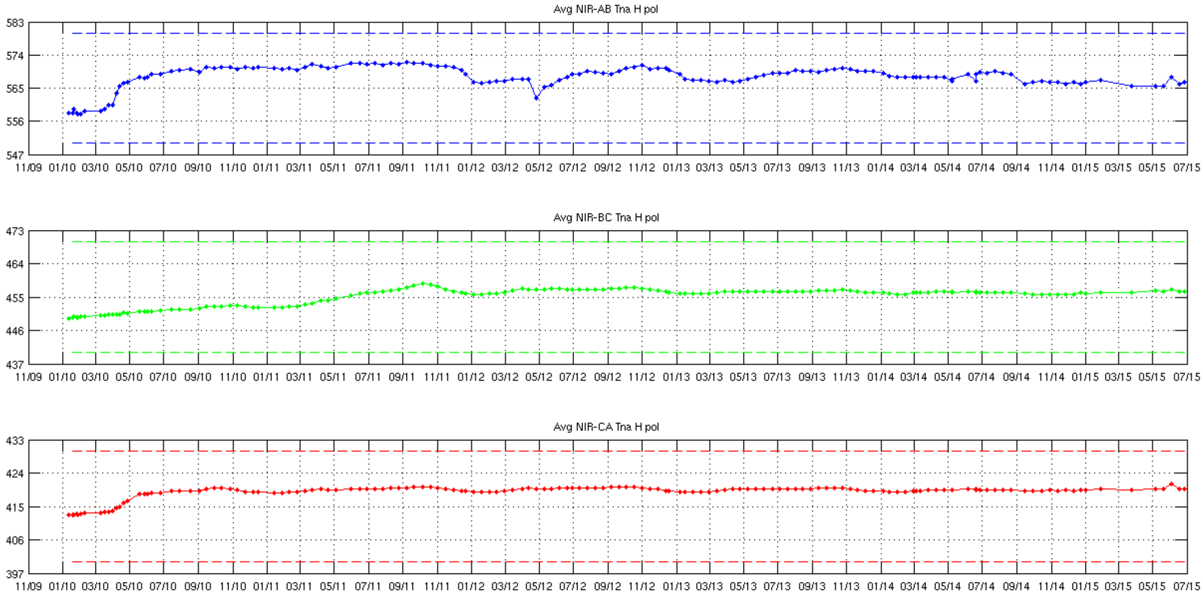

Figure 2 Tna evolution of NIR AB (blue), NIR BC (green) and NIR CA (red) in the V-channel since the beginning of the mission. Thresholds in dashed lines

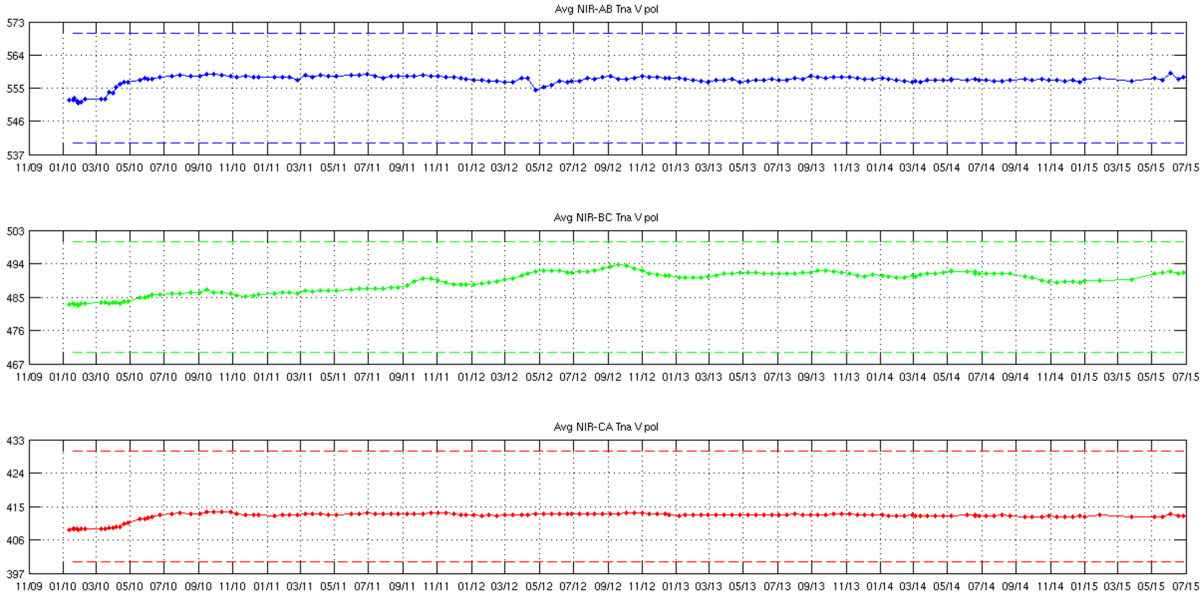

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Figure 3 Tnr evolution of NIR AB (blue), NIR BC (green) and NIR CA (red) in the H-channel since the beginning of the mission. Thresholds in dashed lines

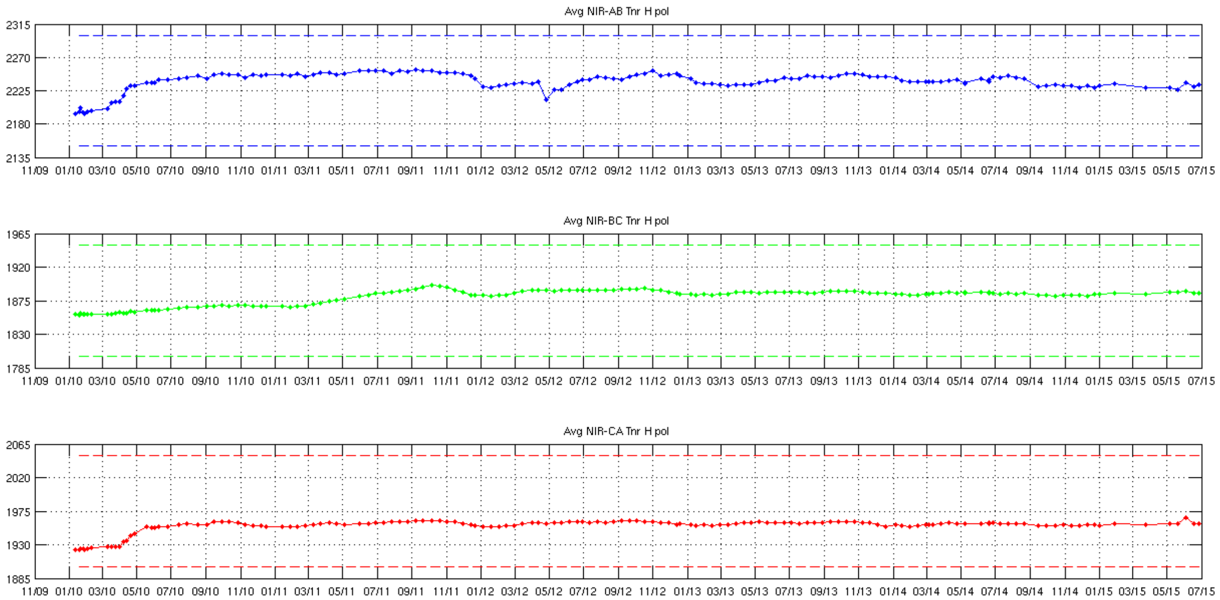

Figure 4 Tnr evolution of NIR AB (blue), NIR BC (green) and NIR CA (red) in the V-channel since the beginning of the mission. Thresholds in dashed lines

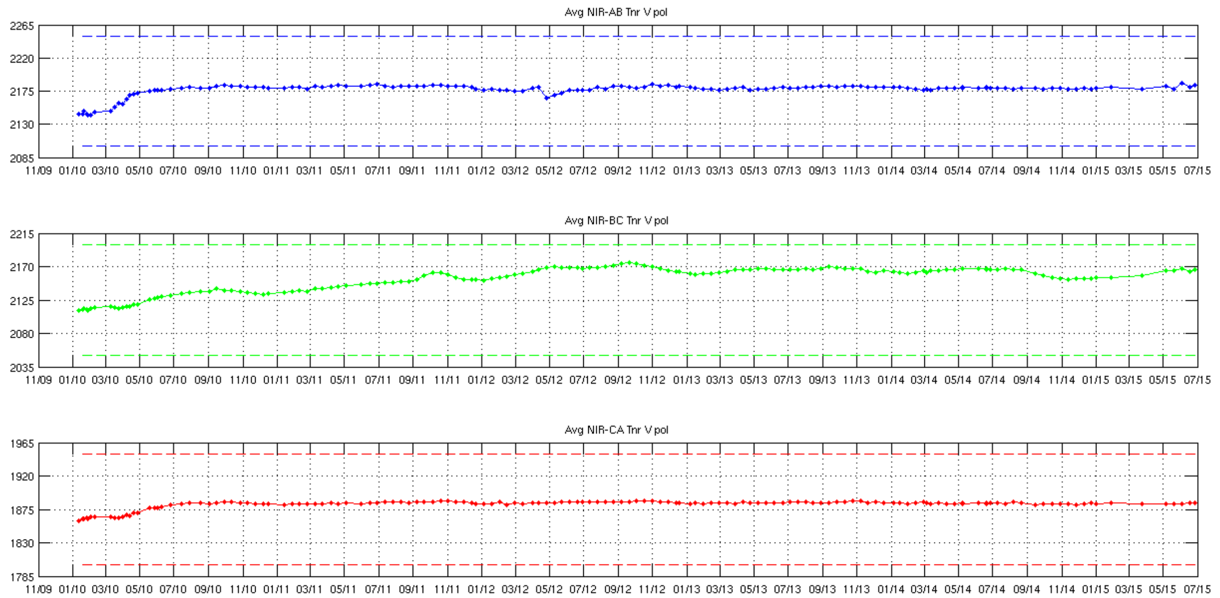

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Figure 5 Cross-coupling evolution in amplitude and phase of NIR AB (blue), NIR BC (green) and NIR CA (red) since the beginning of the mission

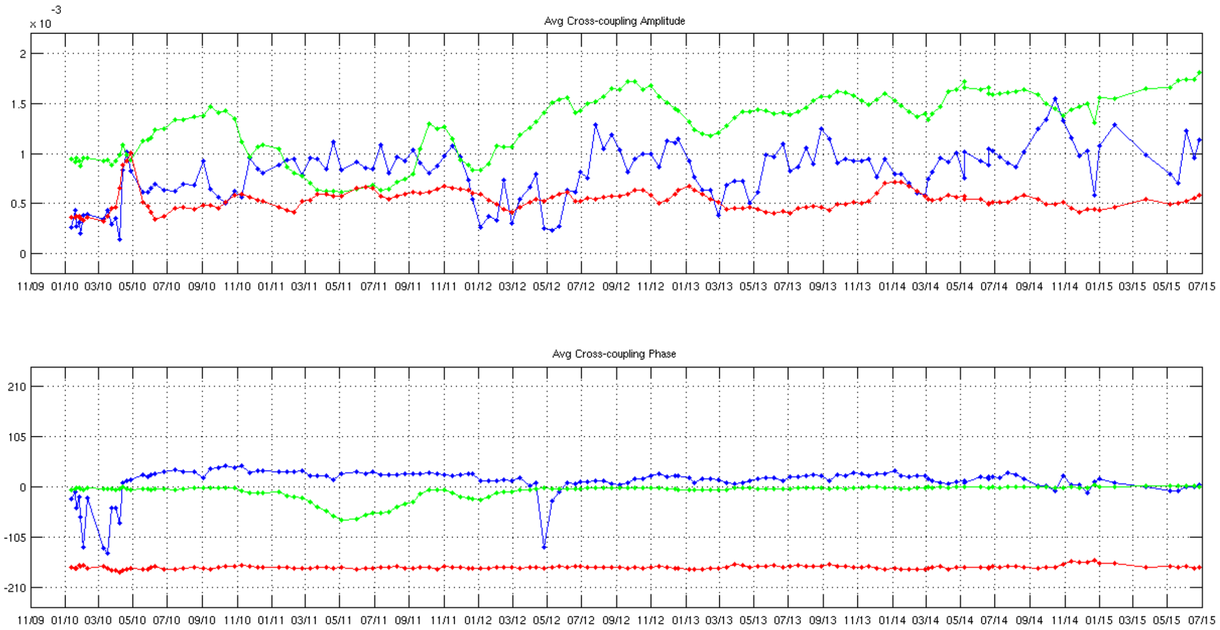
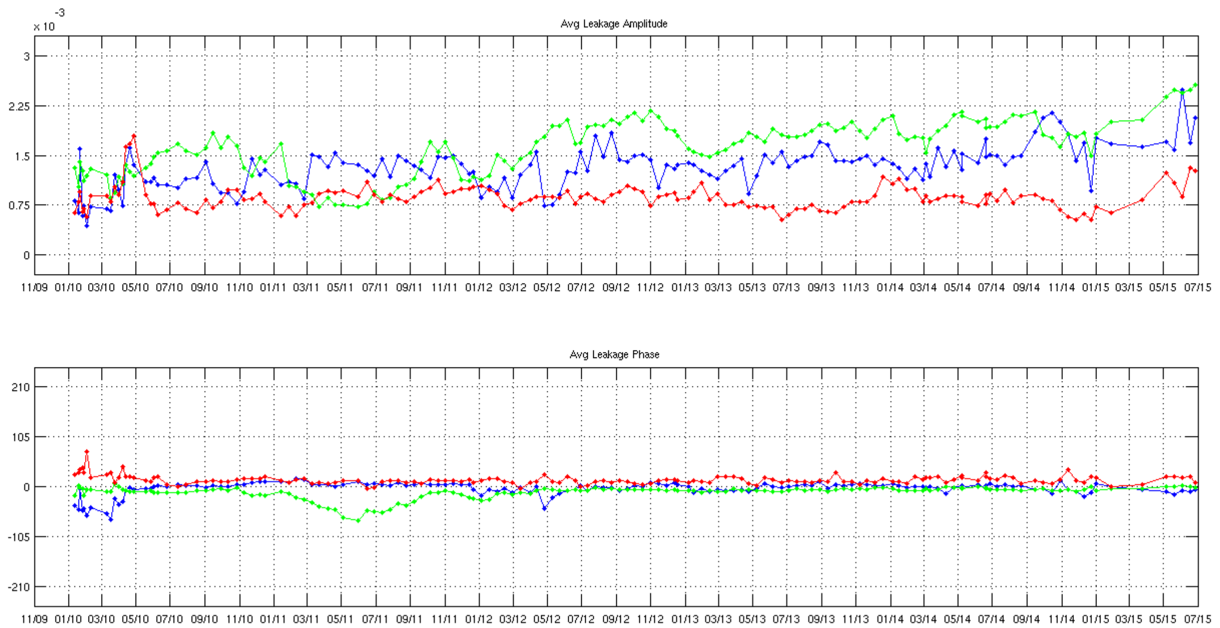


Figure 6 Leakage factor evolution in amplitude and phase of NIR AB (blue), NIR BC (green) and NIR CA (red) since the beginning of the mission



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The LICEF calibration status is updated by long (every 8 weeks) and short (weekly) on-board calibration activities.Long calibration has been executed during the reporting period on 27th June 2015

LICEF PMS gain is derived during the long calibration activity and the Figure 7 to Figure 18 show the evolution (V62x algorithm baseline) of the deviations of the PMS gain with respect to its average over time. Apart from antenna LCF_A_18, LCF_C_11, LCF_C_19, which had shown an evolution from the main trend (see Figure 10, 17, 18) the others PMS are stable.

Figure 19 to Figure 30 show the evolution of the PMS offsets (V62x algorithm baseline) derived during the short calibration activity.

Figure 31 shows the evolution of the average over all the baselines of the Fringe Washing Function (FWF) amplitude in the origin derived during the long calibration. The amplitude of the FWF at the origin does not show any drift and their values are inside the ranges defined in the routine calibration plan.

During the reporting period updates has been applied for the Long and Short calibration as reported in Table 4-4.

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Figure 7 Evolution of the Δ PMS Gain of the LICEFS in CMN H1

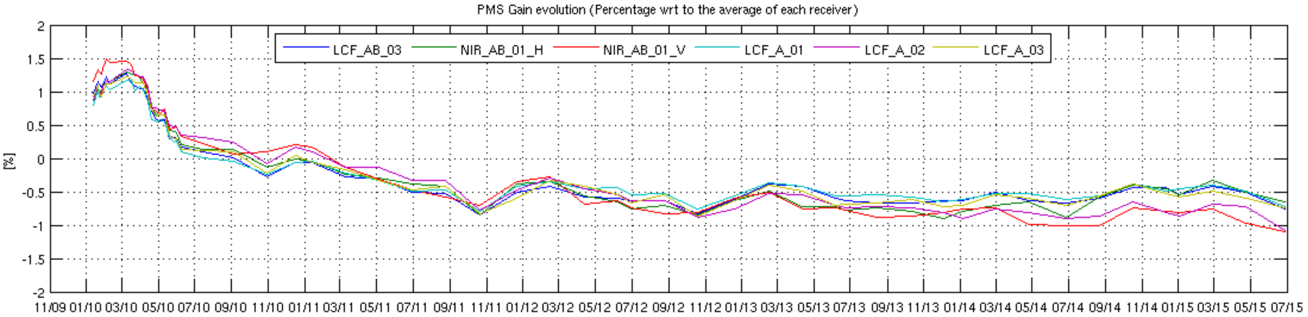

Figure 8 Evolution of the Δ PMS Gain of the LICEFS in CMN A1

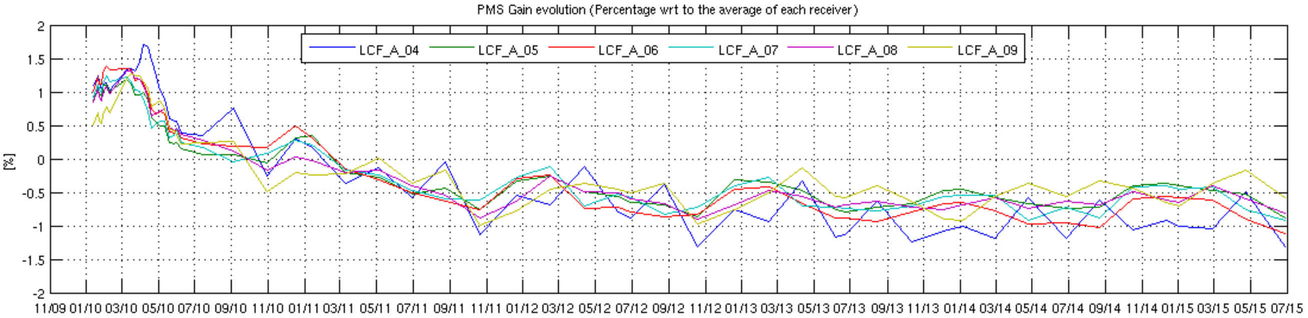

Figure 9 Evolution of the Δ PMS Gain of the LICEFS in CMN A2

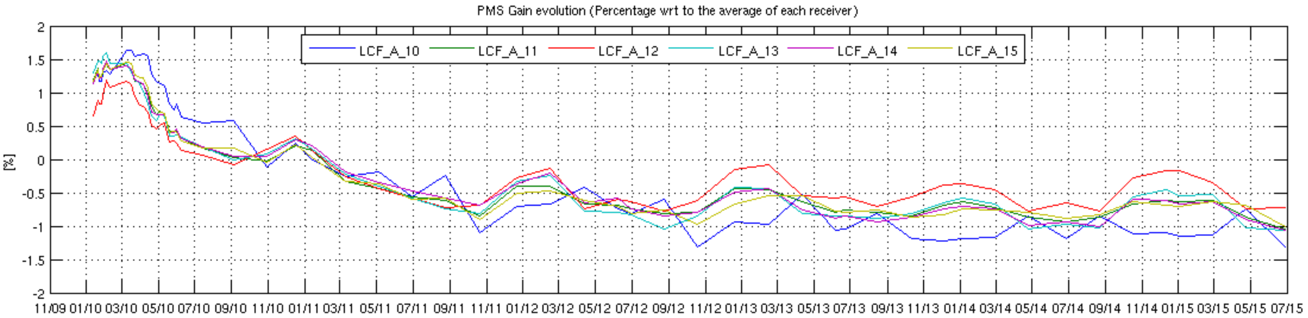

Figure 10 Evolution of the Δ PMS Gain of the LICEFS in CMN A3

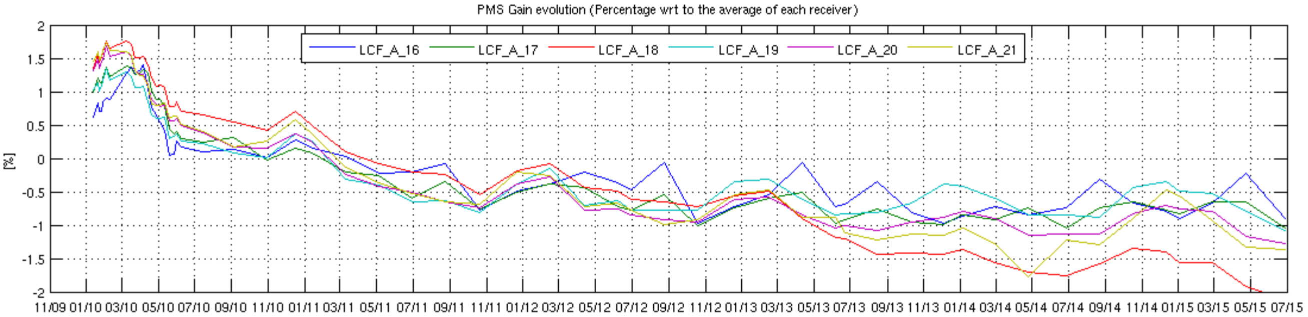

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Figure 11 Evolution of the Δ PMS Gain of the LICEFS in CMN H2

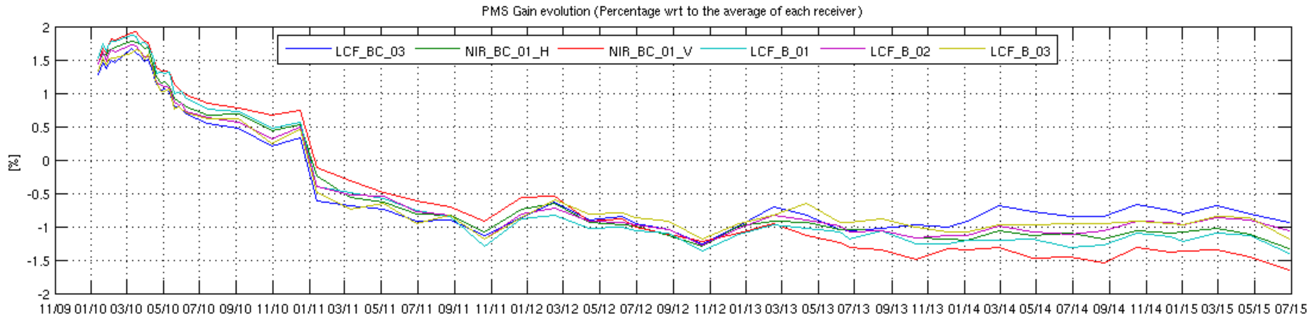

Figure 12 Evolution of the Δ PMS Gain of the LICEFS in CMN B1

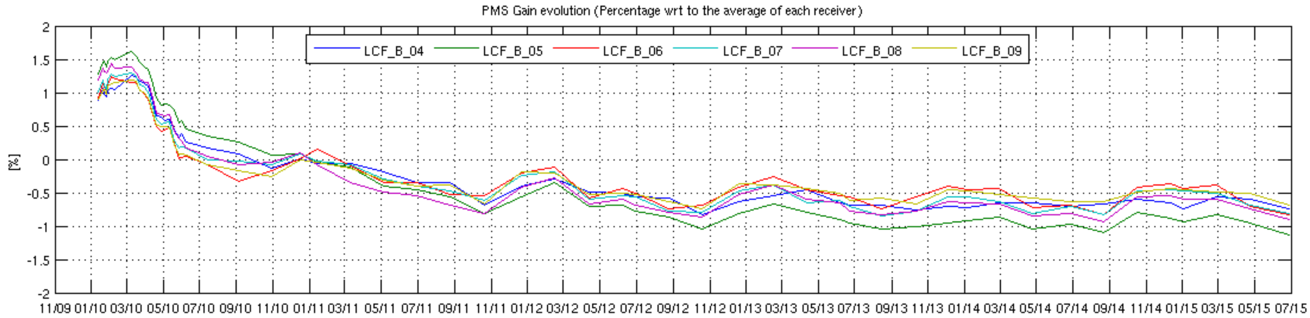

Figure 13 Evolution of the Δ PMS Gain of the LICEFS in CMN B2

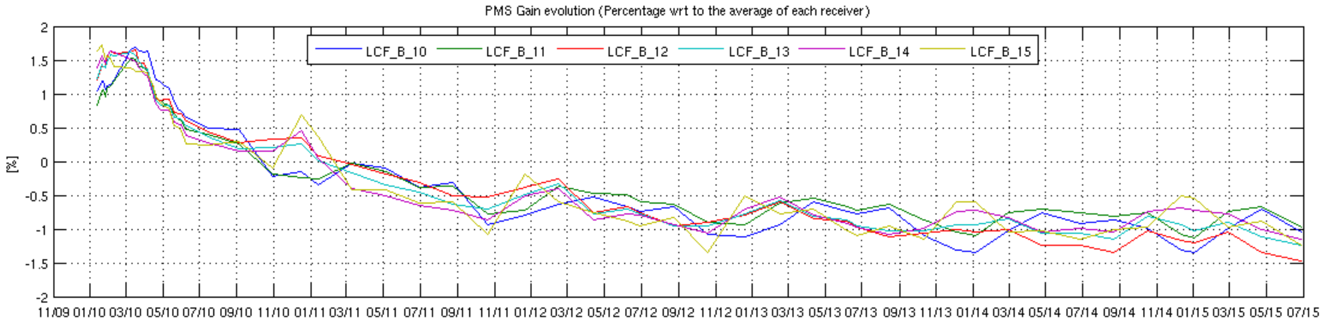

Figure 14 Evolution of the Δ PMS Gain of the LICEFS in CMN B3

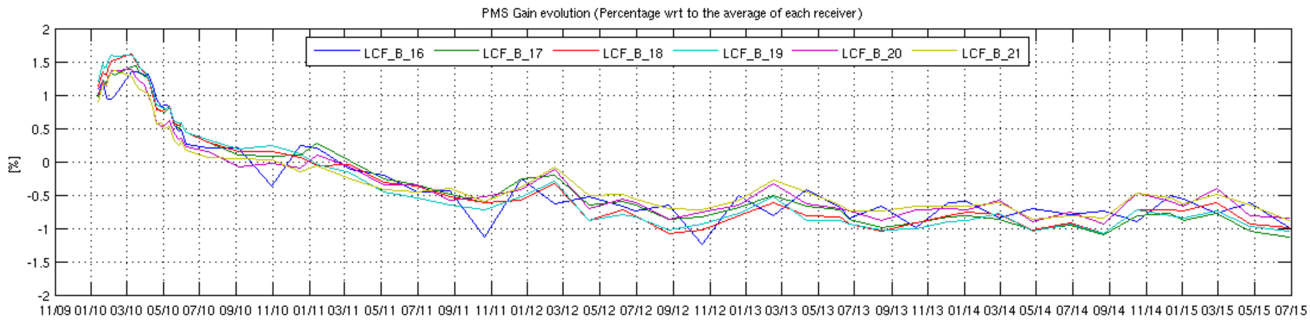

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Figure 15 Evolution of the Δ PMS Gain of the LICEFS in CMN H3

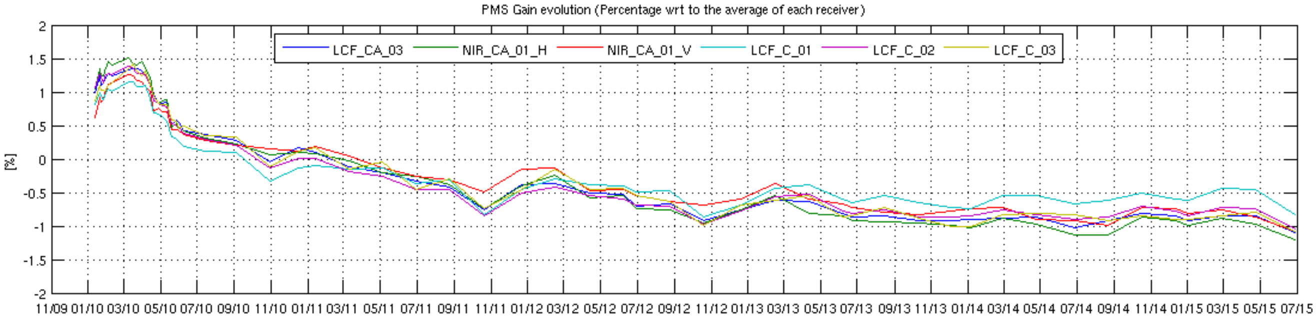

Figure 16 Evolution of the Δ PMS Gain of the LICEFS in CMN C1

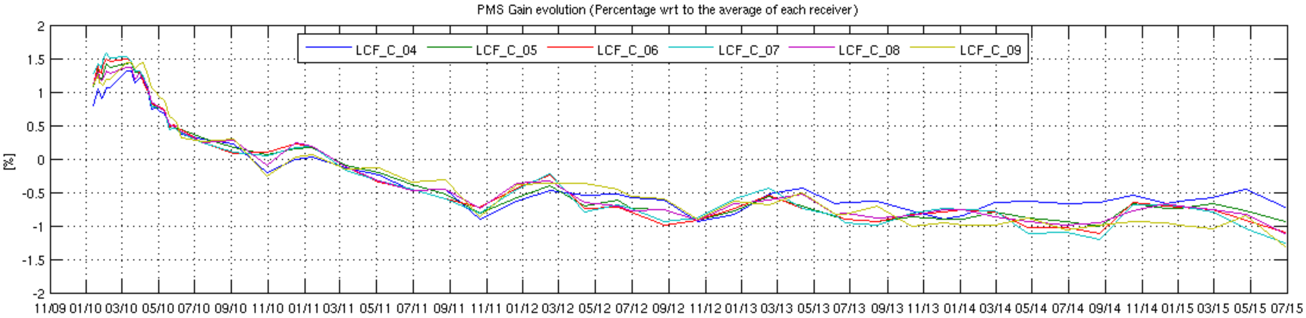

Figure 17 Evolution of the Δ PMS Gain of the LICEFS in CMN C2

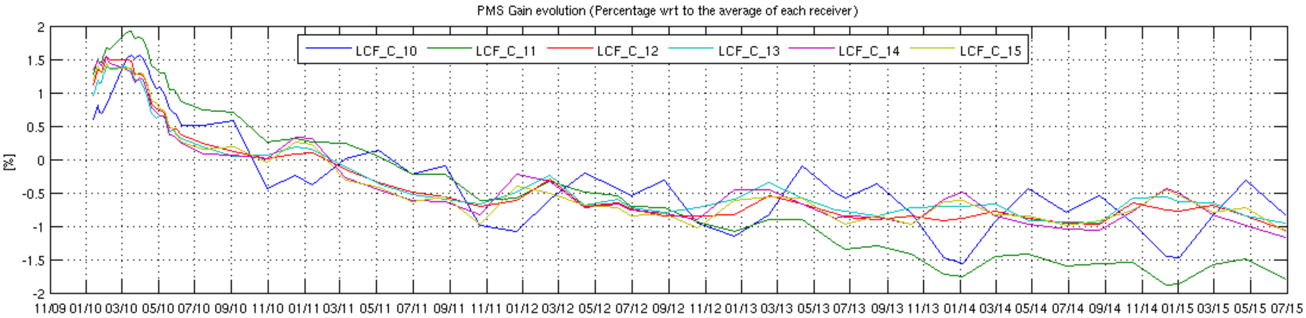

Figure 18 Evolution of the Δ PMS Gain of the LICEFS in CMN C3

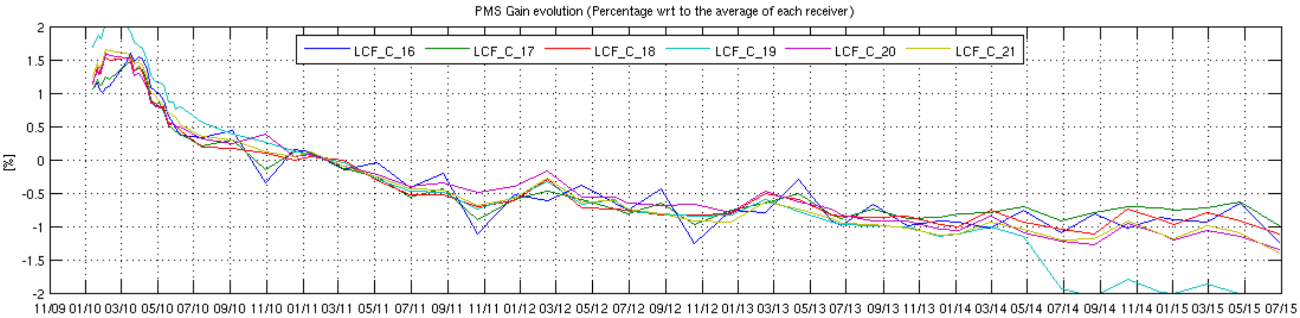

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Figure 19 Evolution of the Δ PMS Offset of the LICEFS in CMN H1

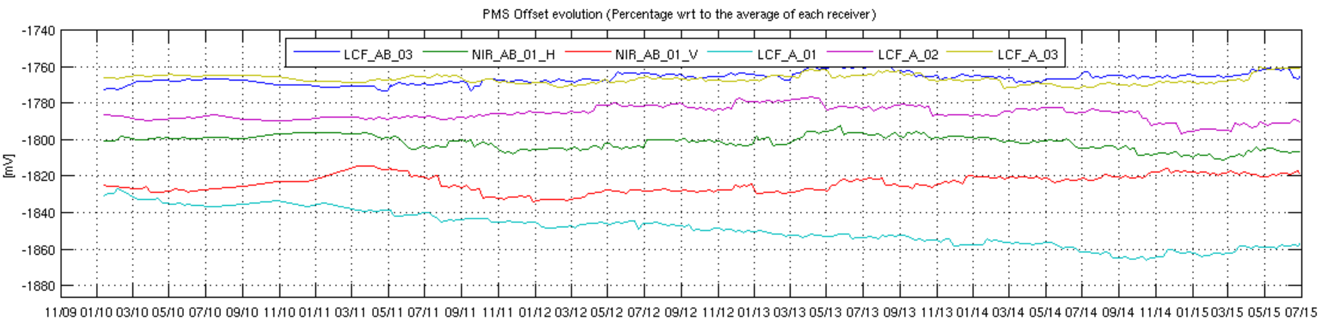

Figure 20 Evolution of the Δ PMS Offset of the LICEFS in CMN A1

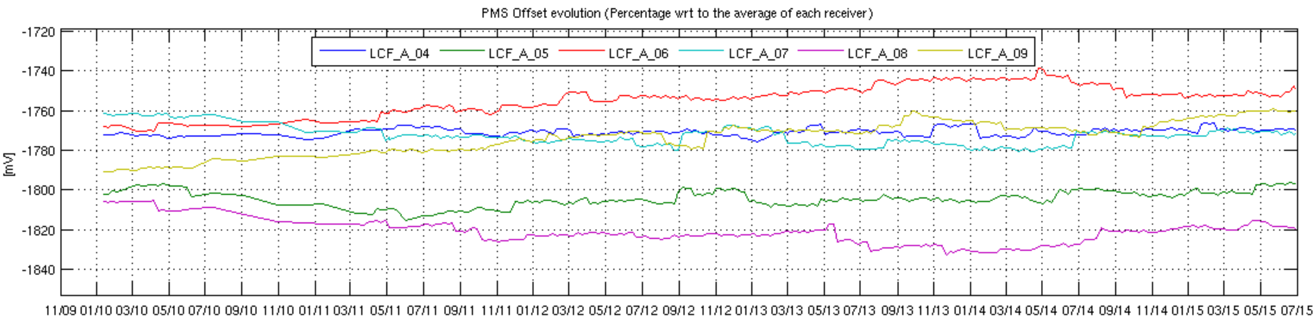

Figure 21 Evolution of the Δ PMS Offset of the LICEFS in CMN A2

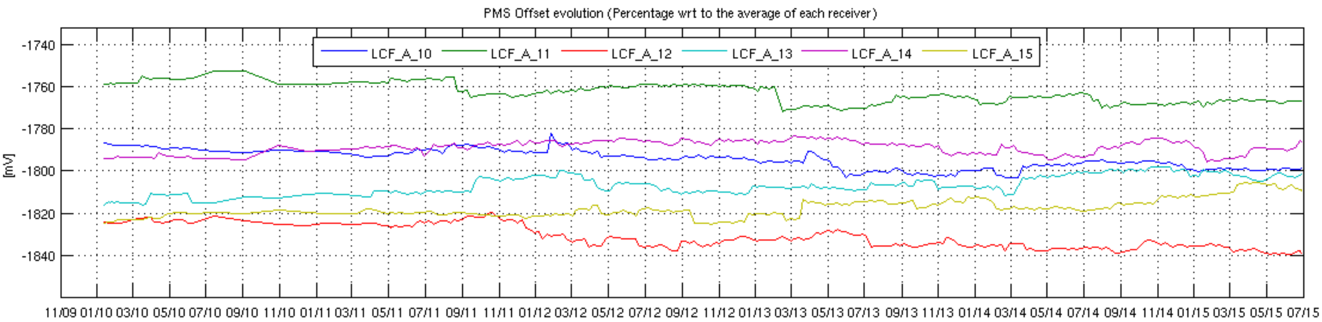

Figure 22 Evolution of the Δ PMS Offset of the LICEFS in CMN A3

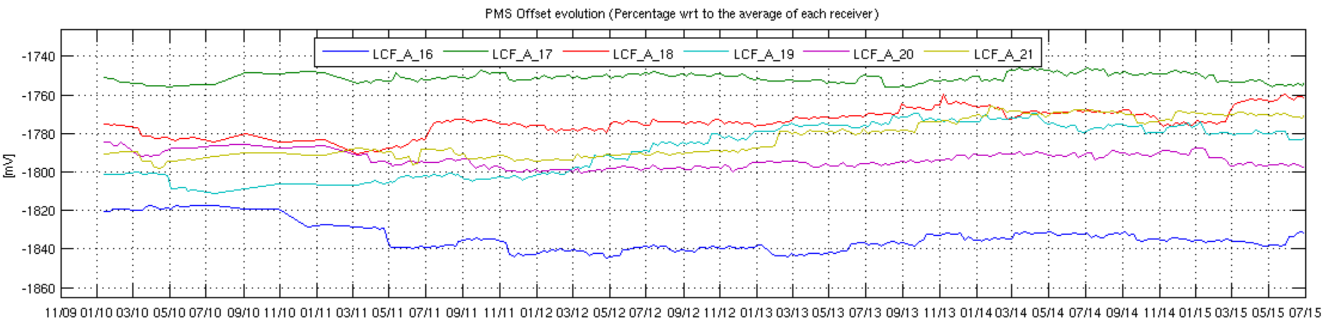

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Figure 23 Evolution of the Δ PMS Offset of the LICEFS in CMN H2

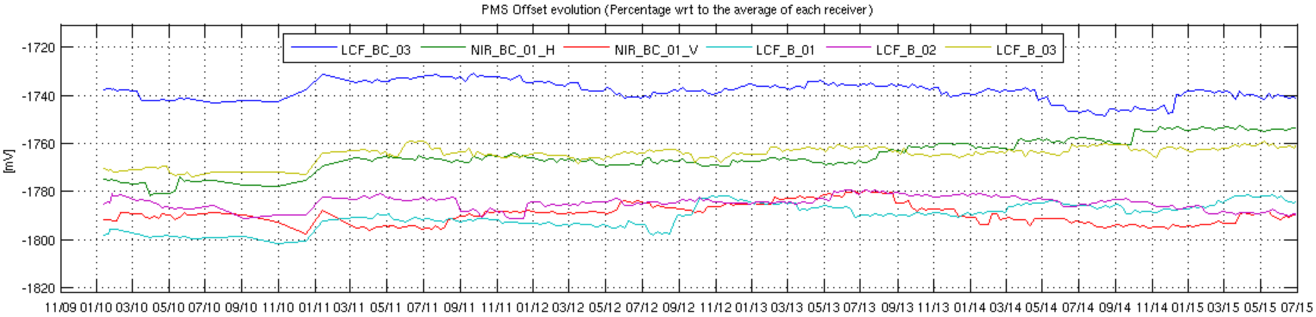

Figure 24 Evolution of the Δ PMS Offset of the LICEFS in CMN B1

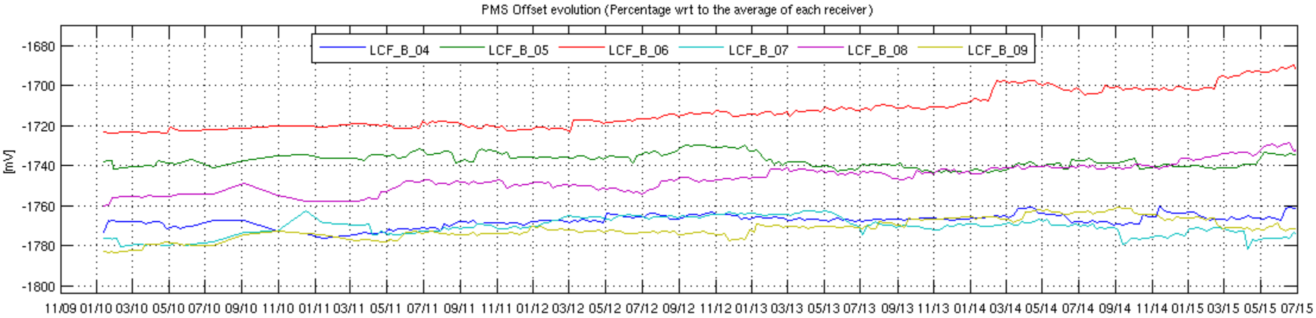

Figure 25 Evolution of the Δ PMS Offset of the LICEFS in CMN B2

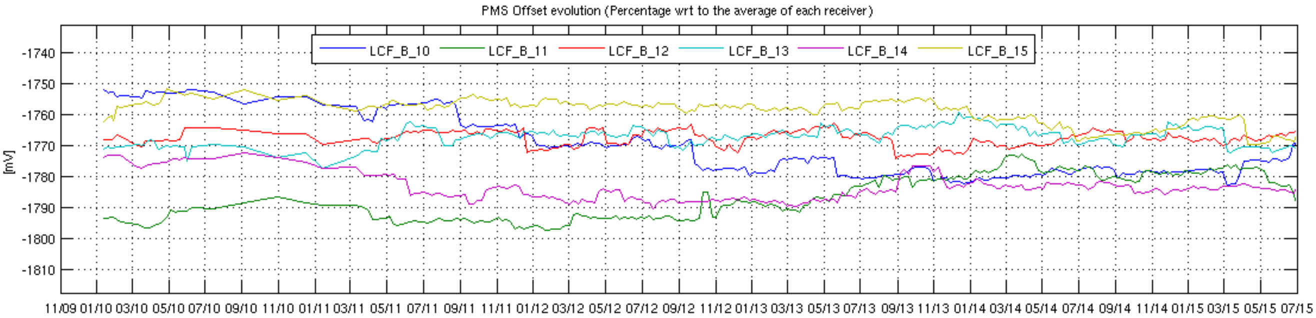

Figure 26 Evolution of the Δ PMS Offset of the LICEFS in CMN B3

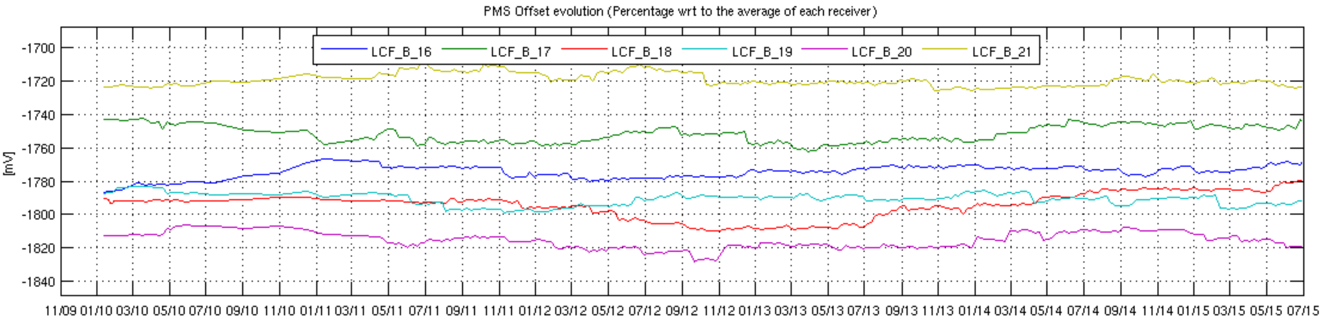

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Figure 27 Evolution of the Δ PMS Offset of the LICEFS in CMN H3

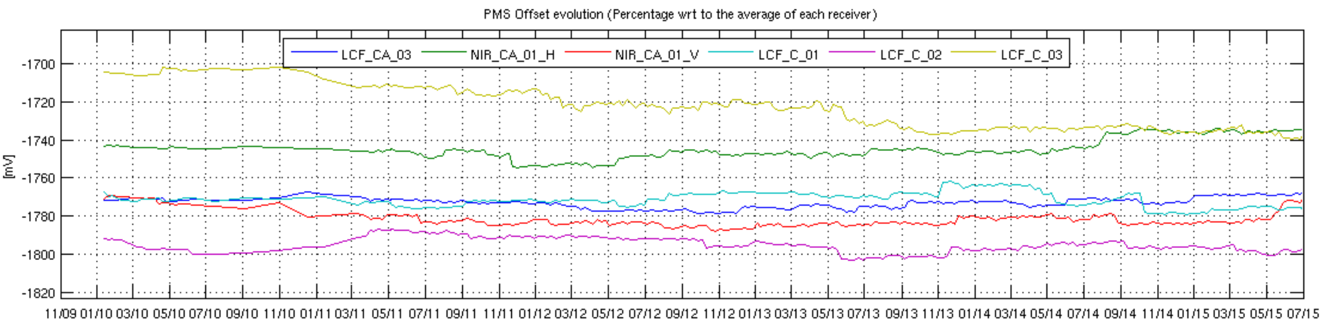

Figure 28 Evolution of the Δ PMS Offset of the LICEFS in CMN C1

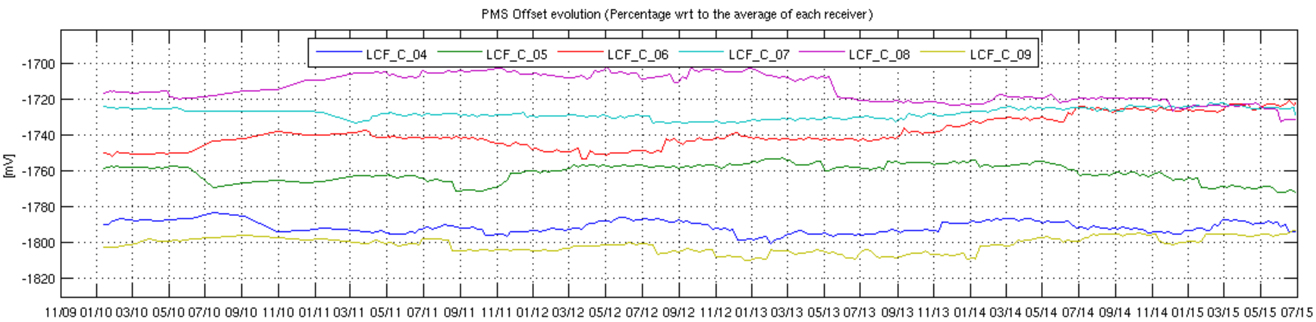

Figure 29 Evolution of the Δ PMS Offset of the LICEFS in CMN C2

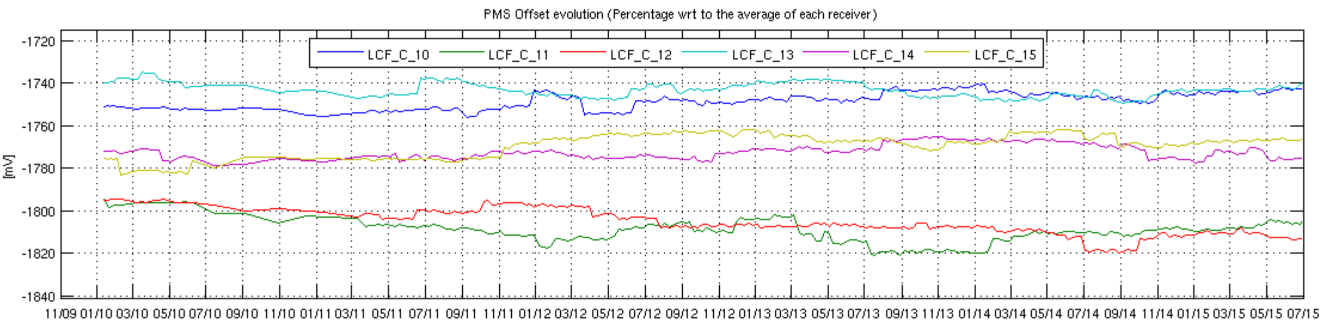

Figure 30 Evolution of the Δ PMS Offset of the LICEFS in CMN C3

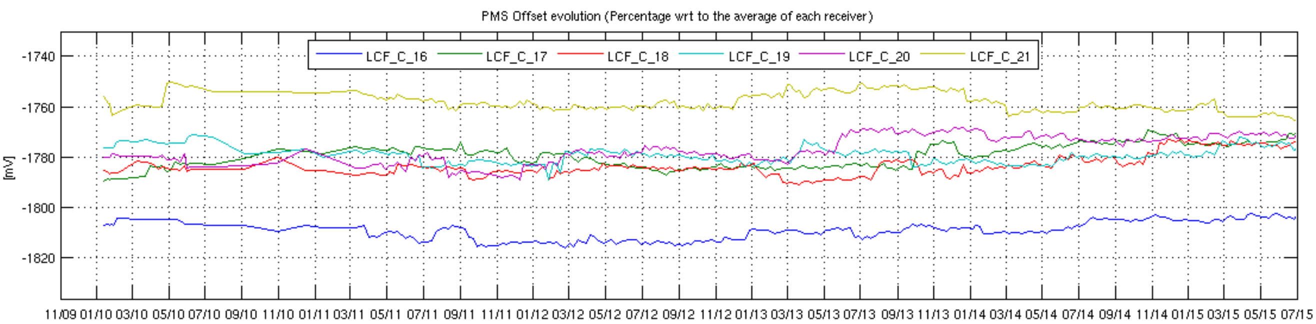

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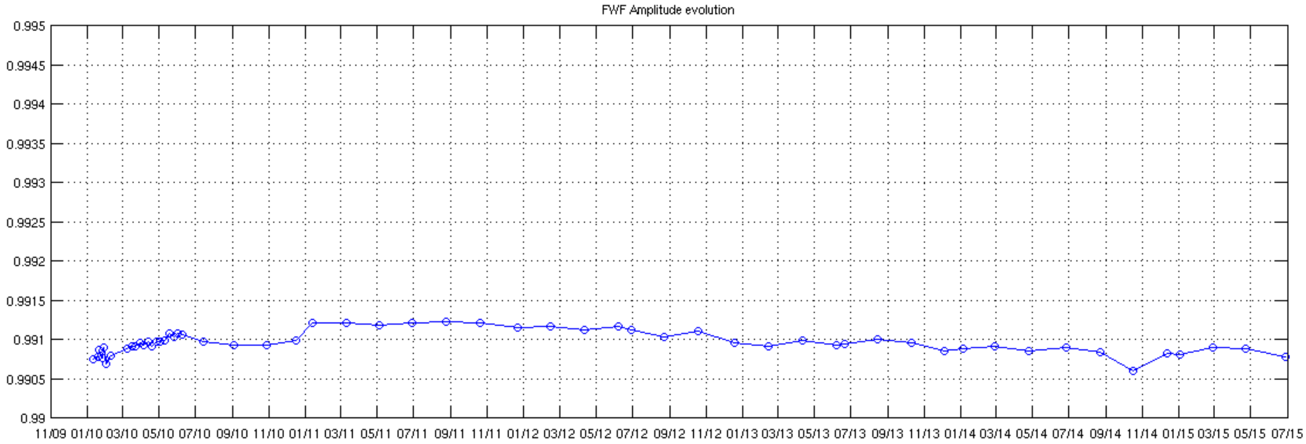
Figure 31 Evolution of the average of the FWF Amplitude at the origin



The evolution of the average of the correlator offsets does not show any significant drift. Also, the correlation offsets between receivers that do not share local oscillator remains much smaller than the correlation offsets between receivers sharing local oscillator. This result is expected since any residual correlated signal arriving to a pair of receivers, arrives through the local oscillator signal.

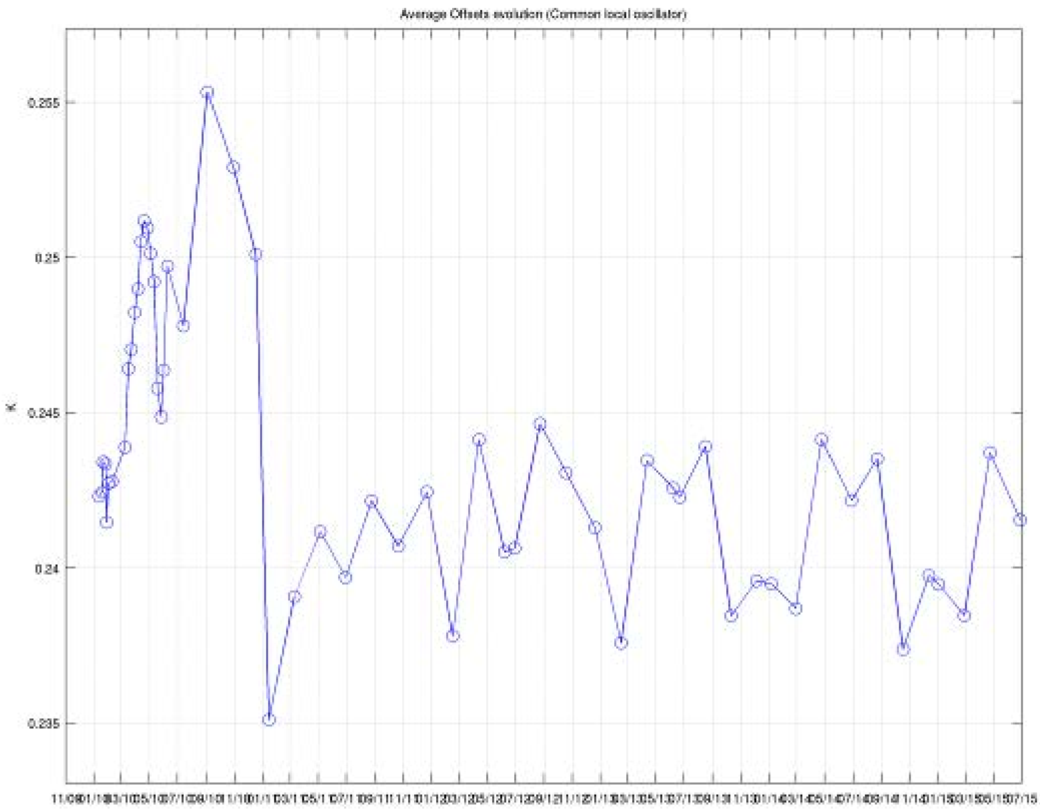


Figure 32 Evolution of the average of the Correlator offsets for the baselines which share local oscillator

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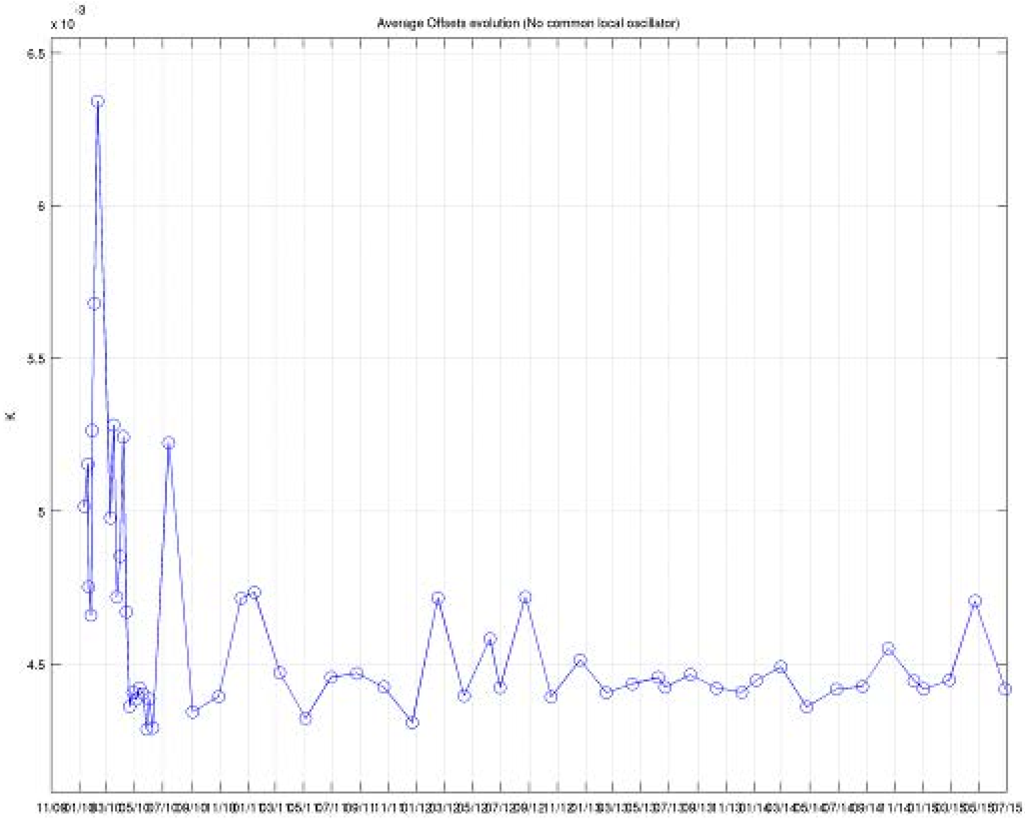

Figure 33 Evolution of the average of the Correlator offsets for the baselines which do not share local oscillator

5.2 Brightness Temperatures Trends over Dome-C Point (Antarctic)

The result of the monitoring of the evolution of the SMOS brightness temperature over Dome-C is shown in the Figure 34 (X and Y polarization at antenna frame for all the incidence angles) and in Figure 35, Figure 36 (H and V polarization at surface level for 42.0 degrees incidence angle for different areas of the Field Of View). The values are averaged every 15 days to reduce the noise and the value for October 2010 is subtracted and used as relative reference.

The evolution of the brightness temperature trend over Dome-C does not show any significant drift except for the beginning of 2015 in H polarization. This drift was due to a change on surface geophysical condition: accumulation of snow since November 2014 and rapidly evolution of snow density on 22 March 2015 when a strong wind has changed the surface condition. This event has impacted the emissivity of the ice that was confirmed by on-site L-band measurement (Dome-x experiment) and from the Aquarius data set.

The H polarization values were back to nominal from April 2015 onwards.

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Figure 34: Dome-C X and Y polarization trends (all incidence angles)

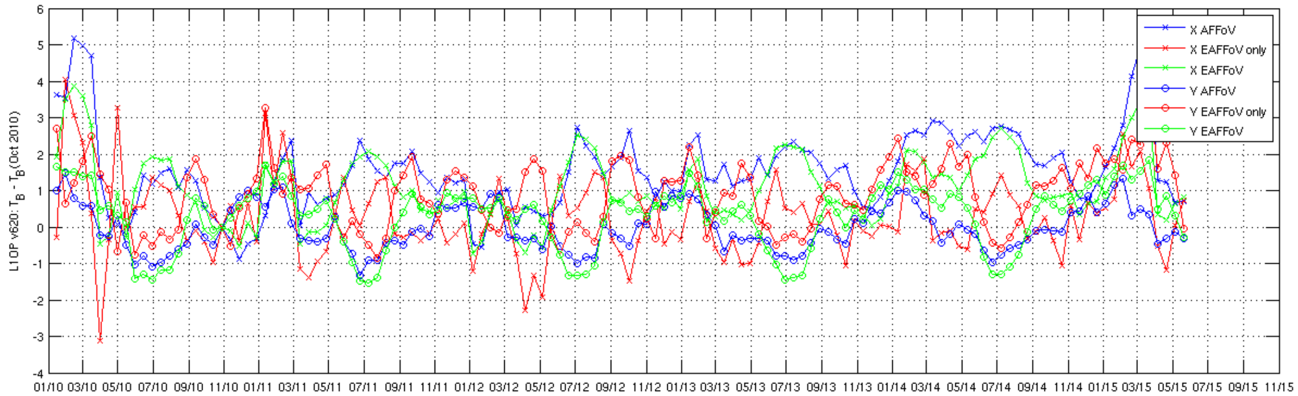


Figure 35: Dome-C H and V polarization trends in Alias Free zone (incidence angle 42°)

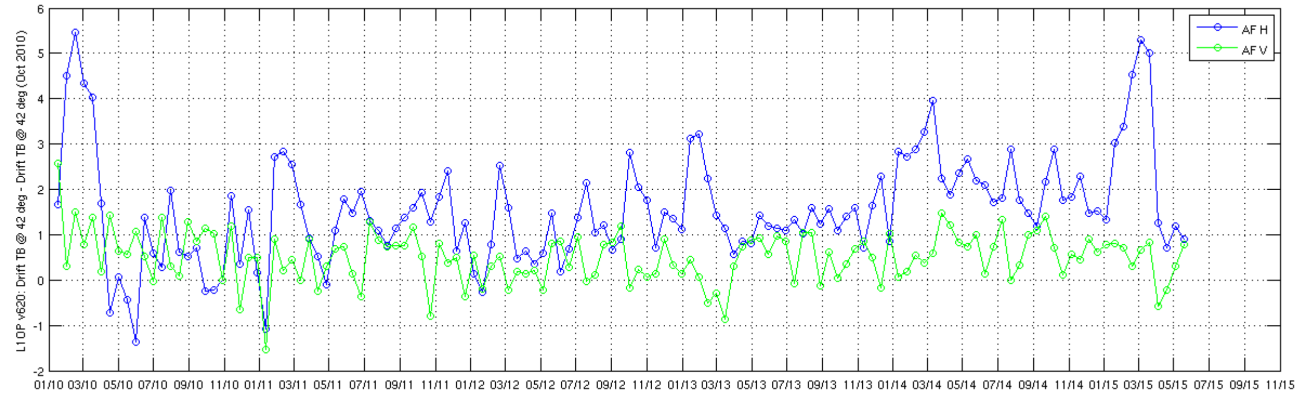
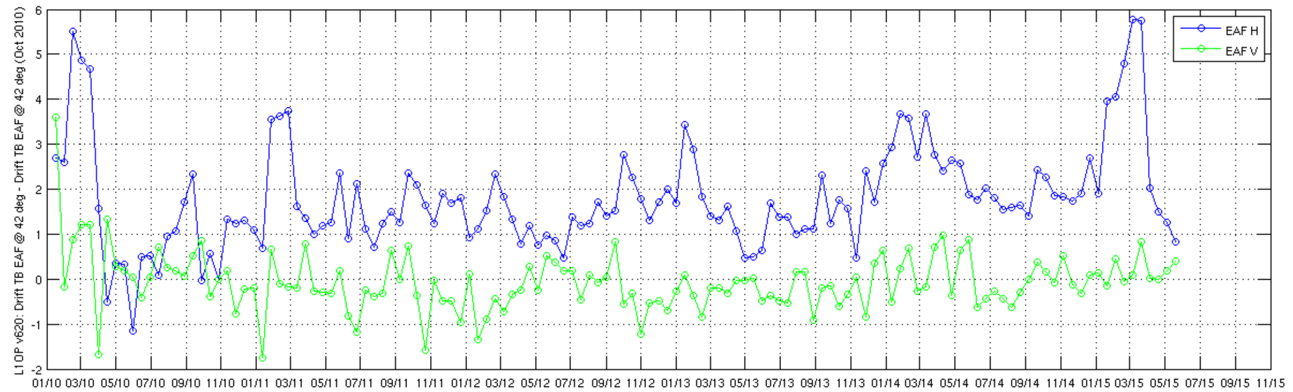


Figure 36: Dome-C H and V polarization trends in Extended Alias Free zone (incidence angle 42°)



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6. PRODUCT QUALITY ANALYSIS

Data quality for May has found to be nominal except in the time intervals listed in the section 4.5.

The L1 production is nominal as no artefacts are observed in the Stokes maps in Figure 34 to Figure 61. The figures plot the Stokes parameter computed at 42.5 deg from the L1C Browse products. All the artificial patterns in the images can be explained by the presence of RFIs. The impact of the RFI in the brightness temperature measurements over land can be observed mainly in Europe and Asia.

The third Stokes parameter (Real part of XY) shows a clear pattern between ascending and descending pass due to the different values of the Total Electron Content in the atmosphere for morning / evening orbits. Strong values of the third Stokes parameter are related to RFI. The fourth Stokes parameter (Imaginary part of XY) shows as expected a mean value around zero. Strong values of the fourth Stokes parameter are related to RFI.

The L2 Soil Moisture and Ocean Salinity production is nominal in the reporting period.

For more detail on soil moisture and sea surface salinity retrieval algorithms see the L2 Algorithm Theoretical Baseline Documents available here:

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Figure 34 1st Stokes evolution over land during the reporting period (week 1)

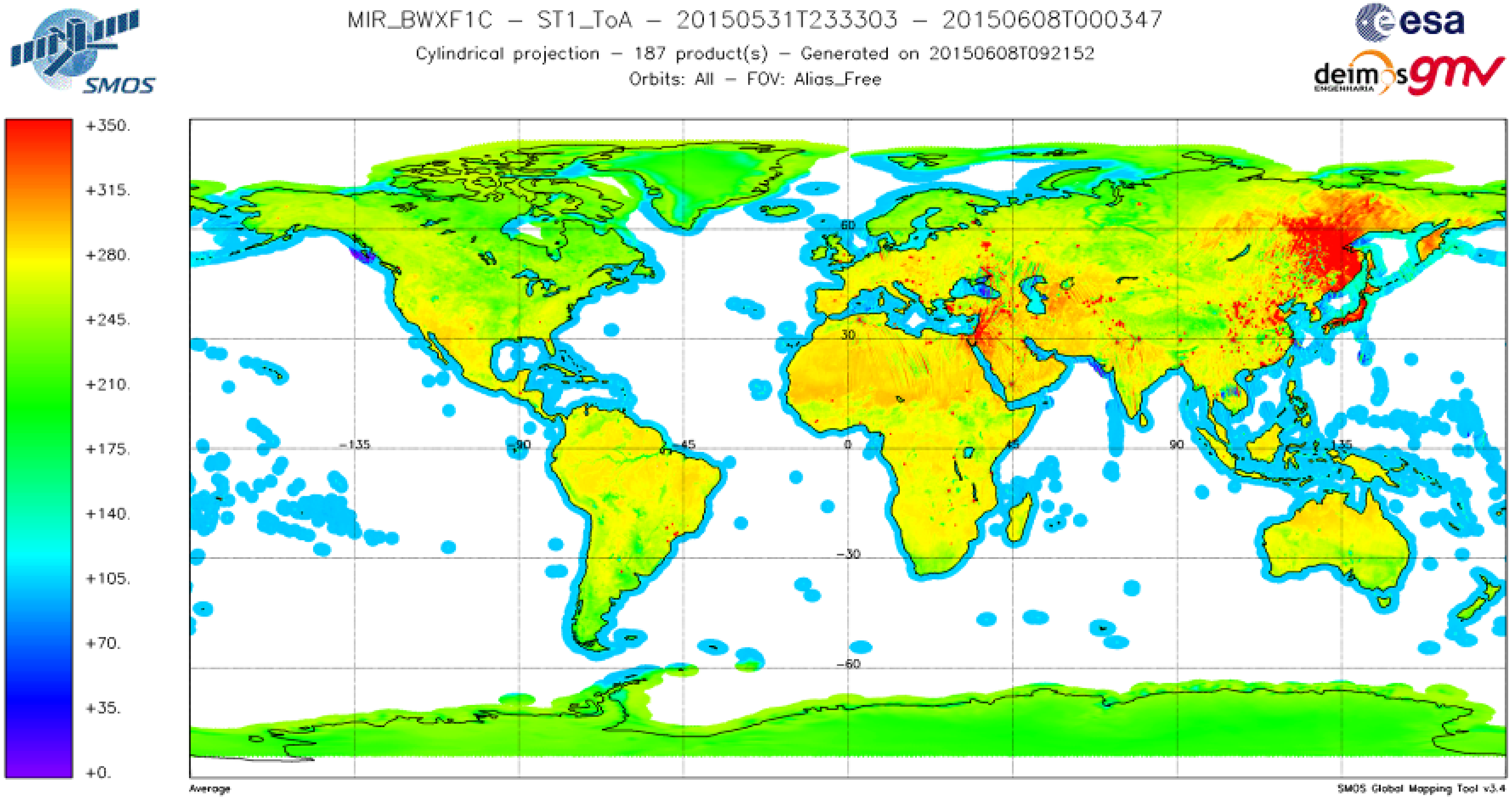

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Figure 35 1st Stokes evolution over land during the reporting period (week 2)

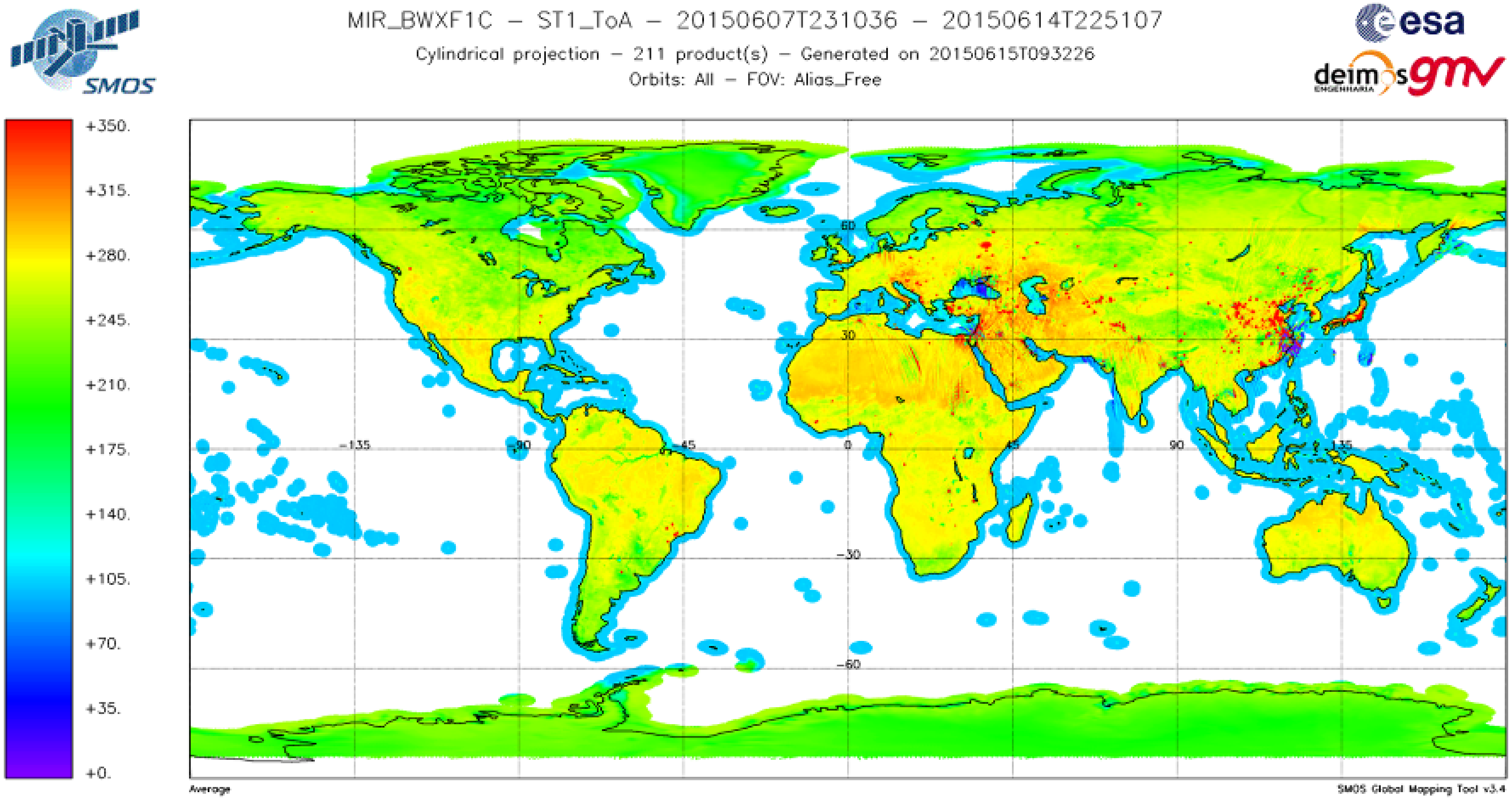

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Figure 36 1st Stokes evolution over land during the reporting period (week 3)

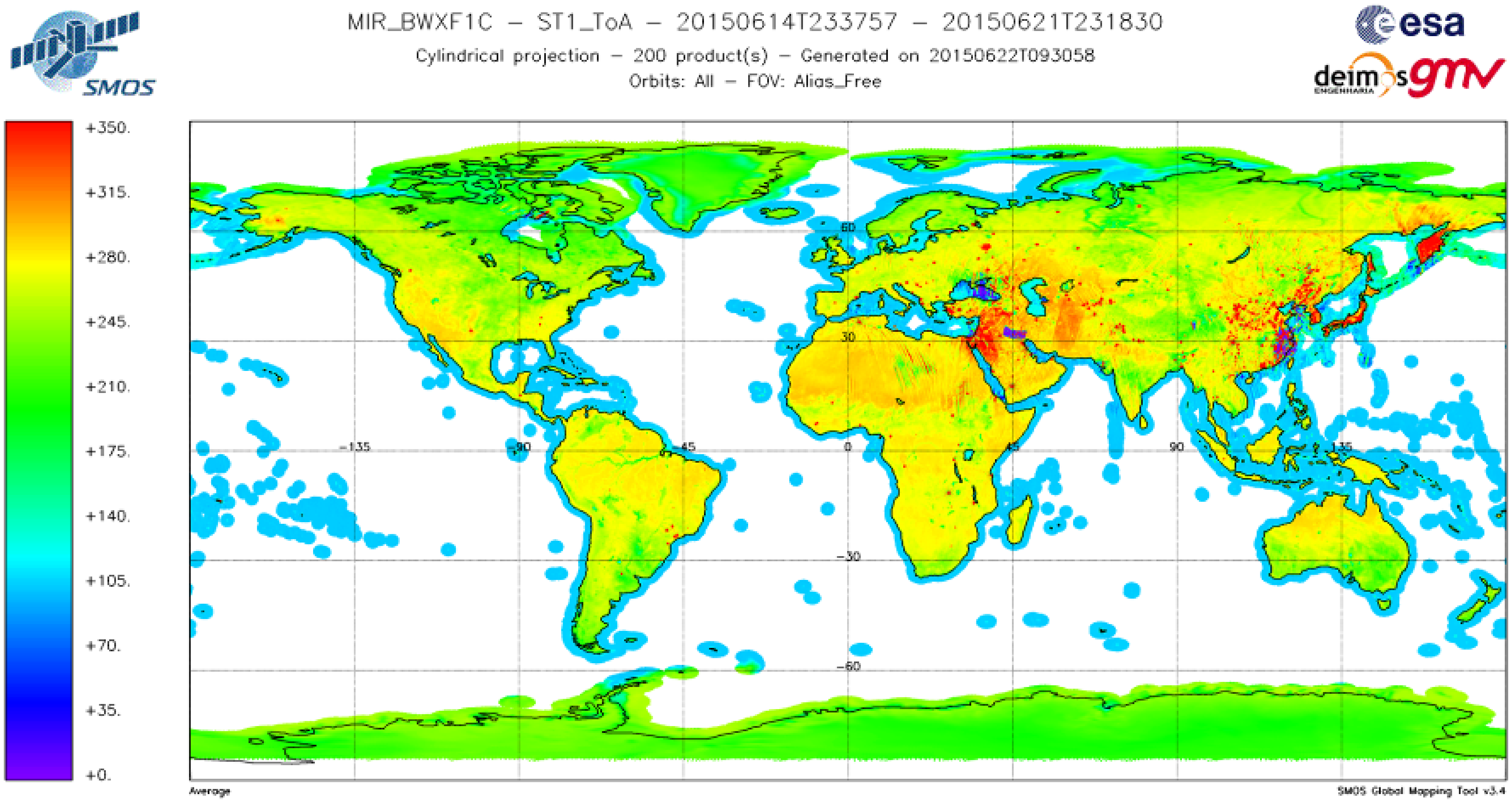

Figure 37 1st Stokes evolution over land during the reporting period (week 4)

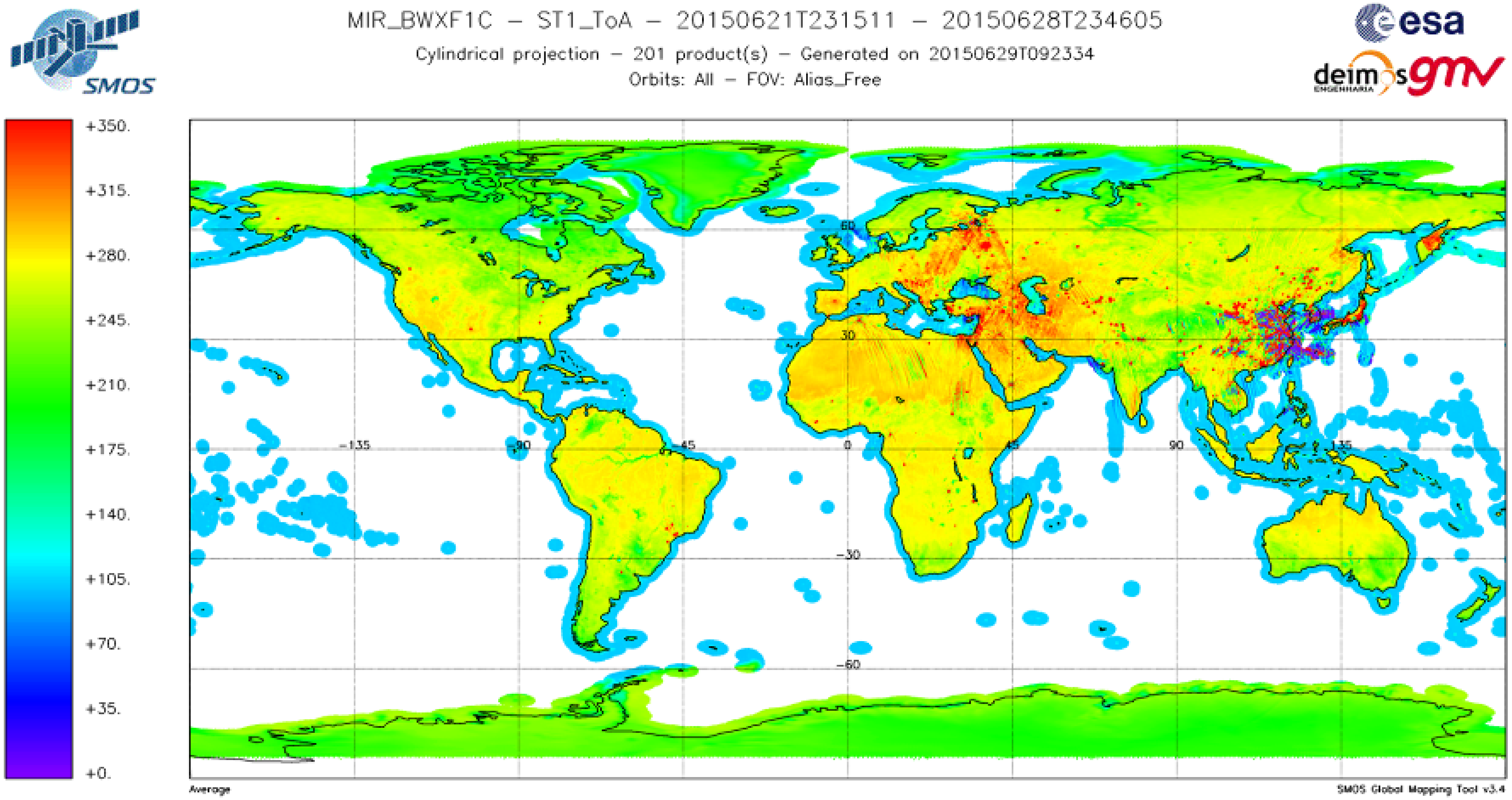

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Figure 38 1st Stokes evolution over land during the reporting period (week 5)

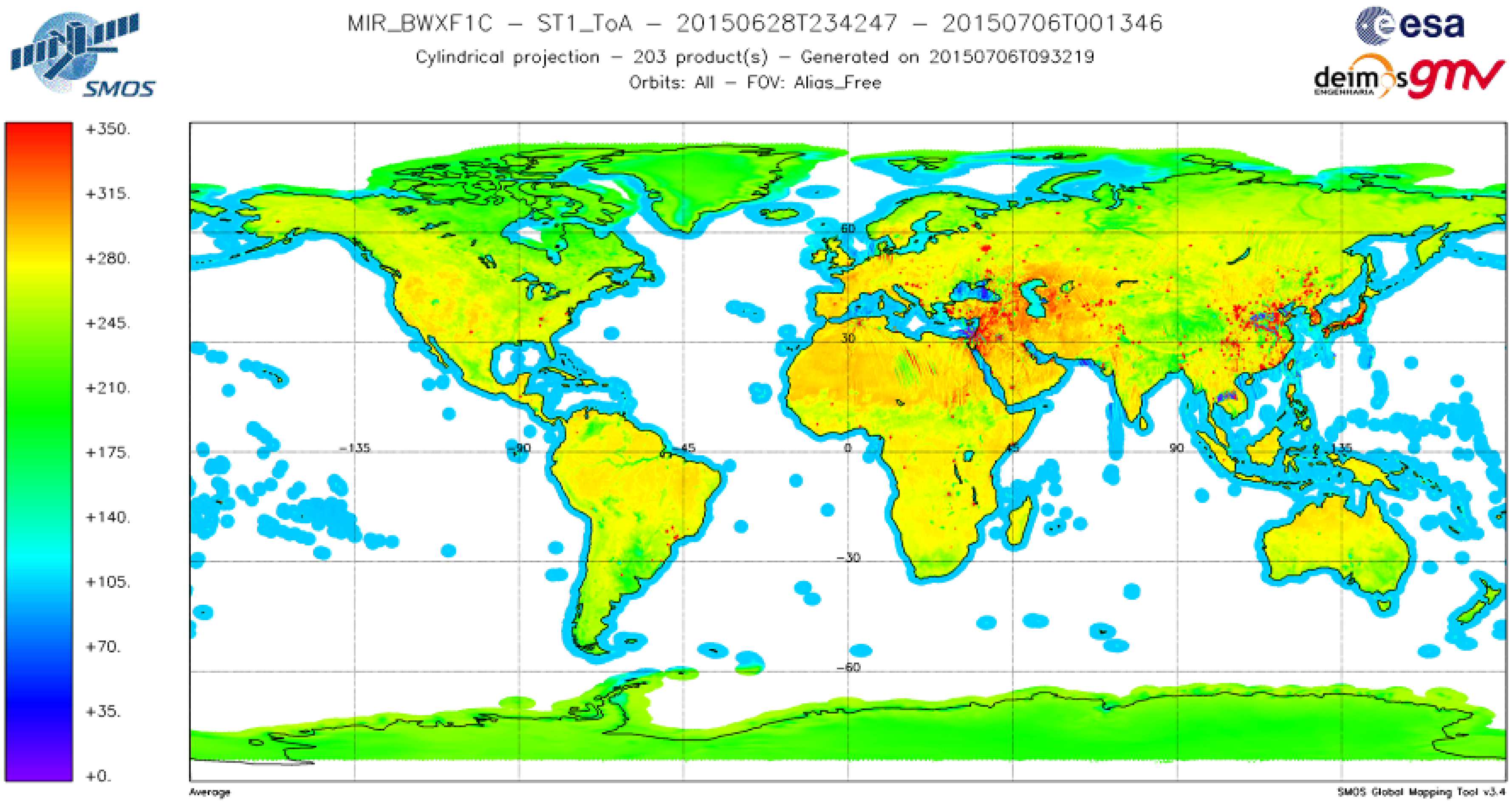

Figure 39 Real Part of the XY Brightness temperature evolution over land during the reporting period (week 1)

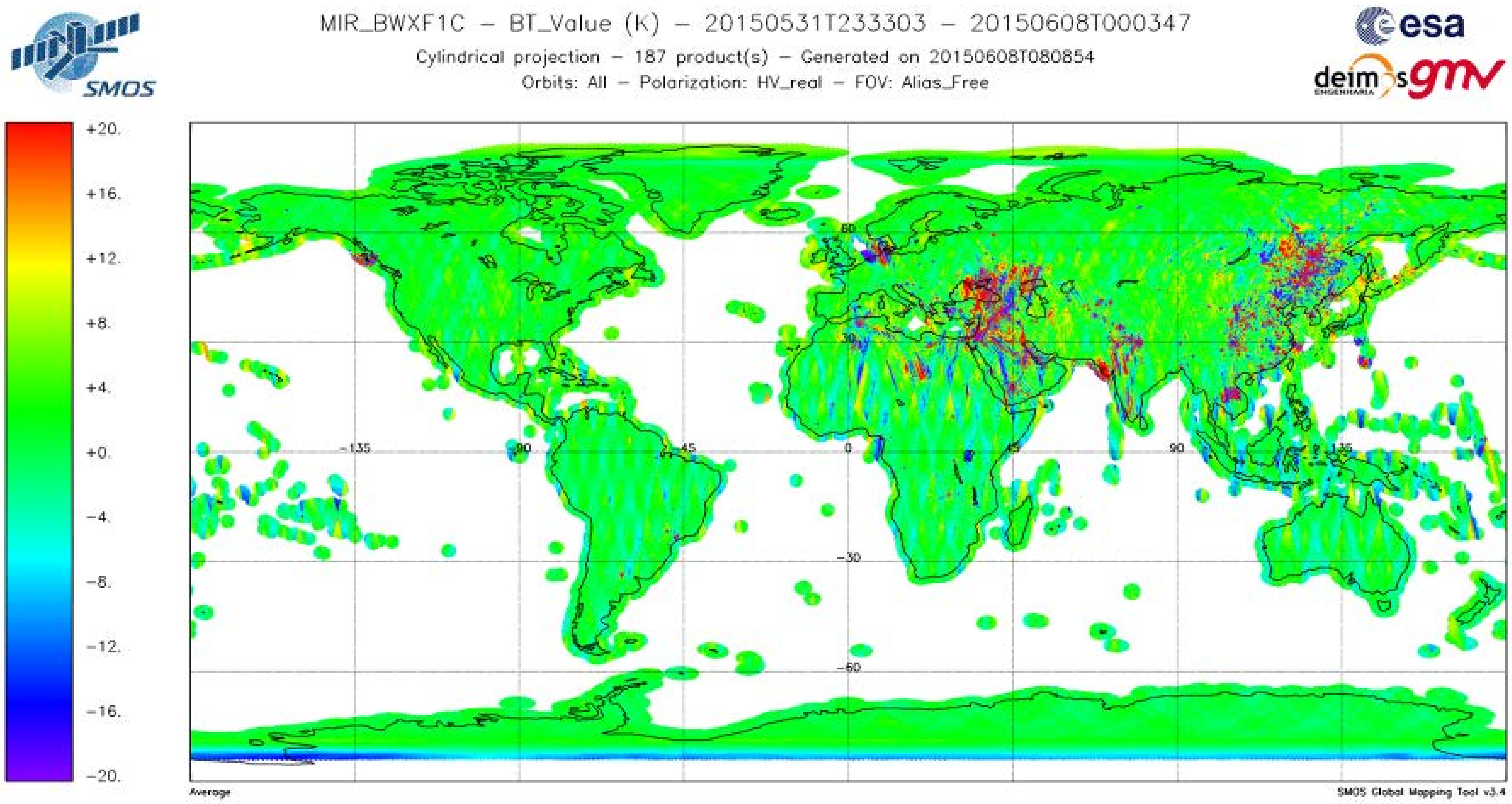

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Figure 40 Real Part of the XY Brightness temperature evolution over land during the reporting period (week 2)

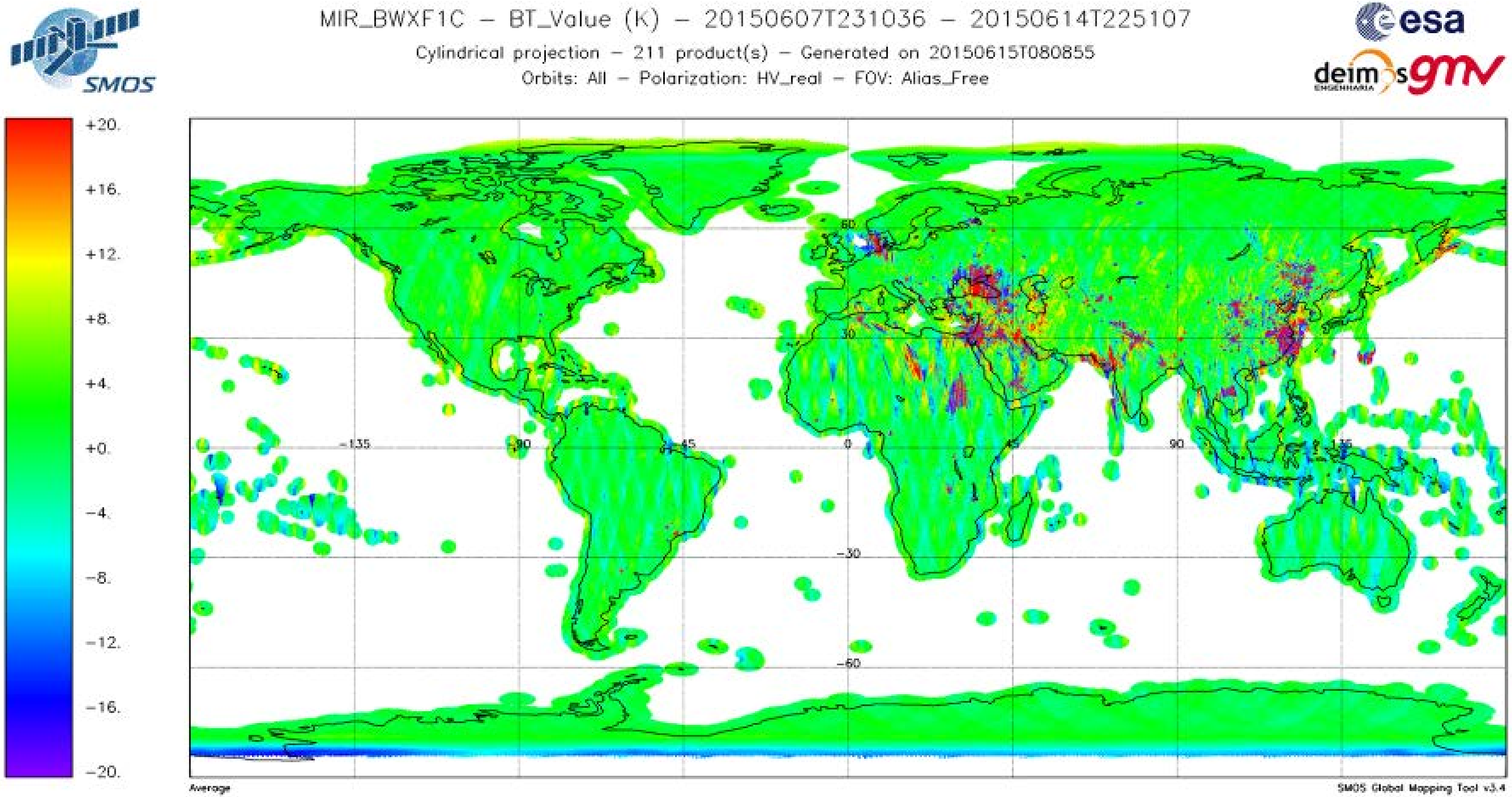

Figure 41 Real Part of the XY Brightness temperature evolution over land during the reporting period (week 3)

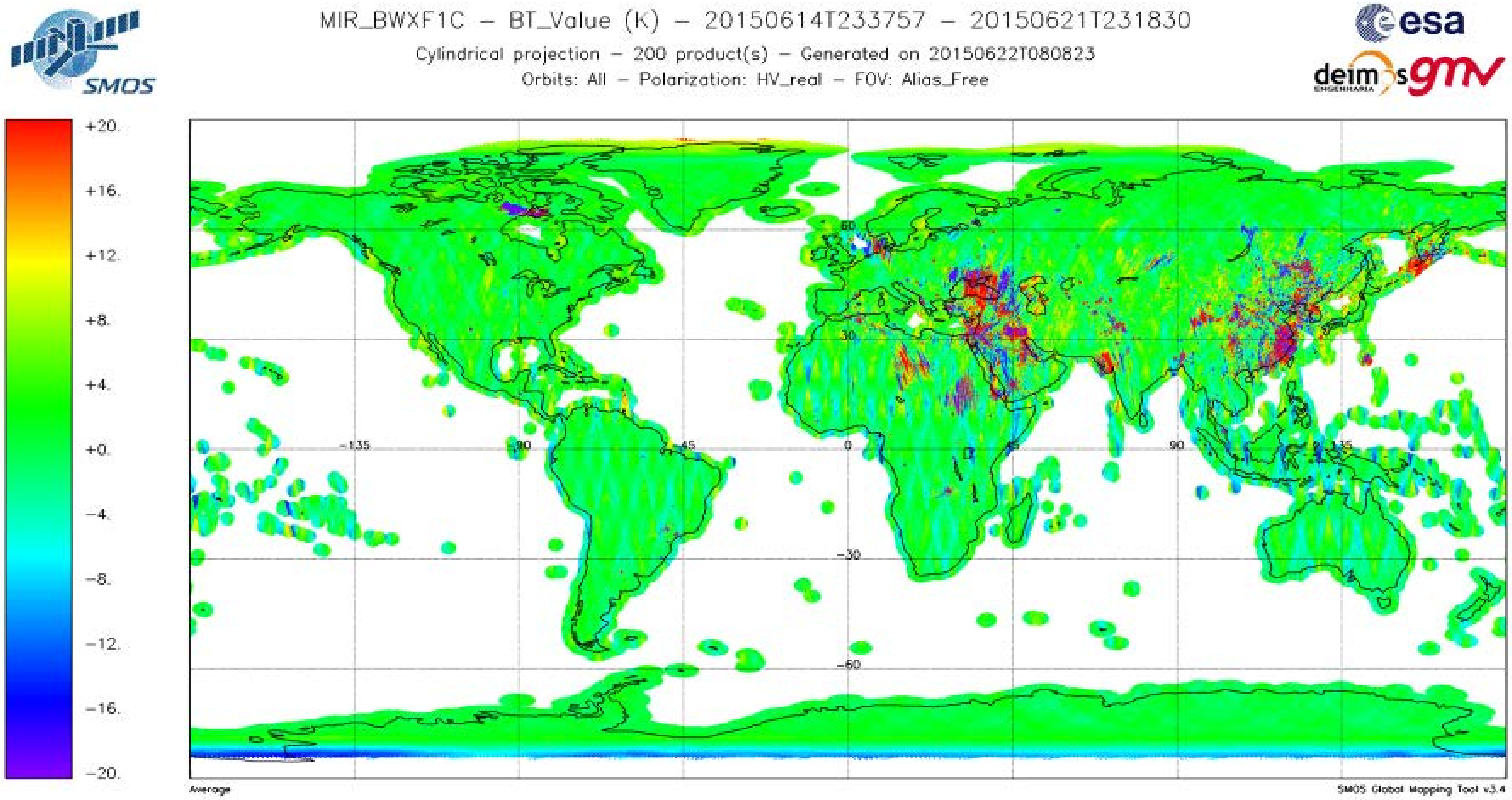

Figure 42 Real Part of the XY Brightness temperature evolution over land during the reporting period (week 4)

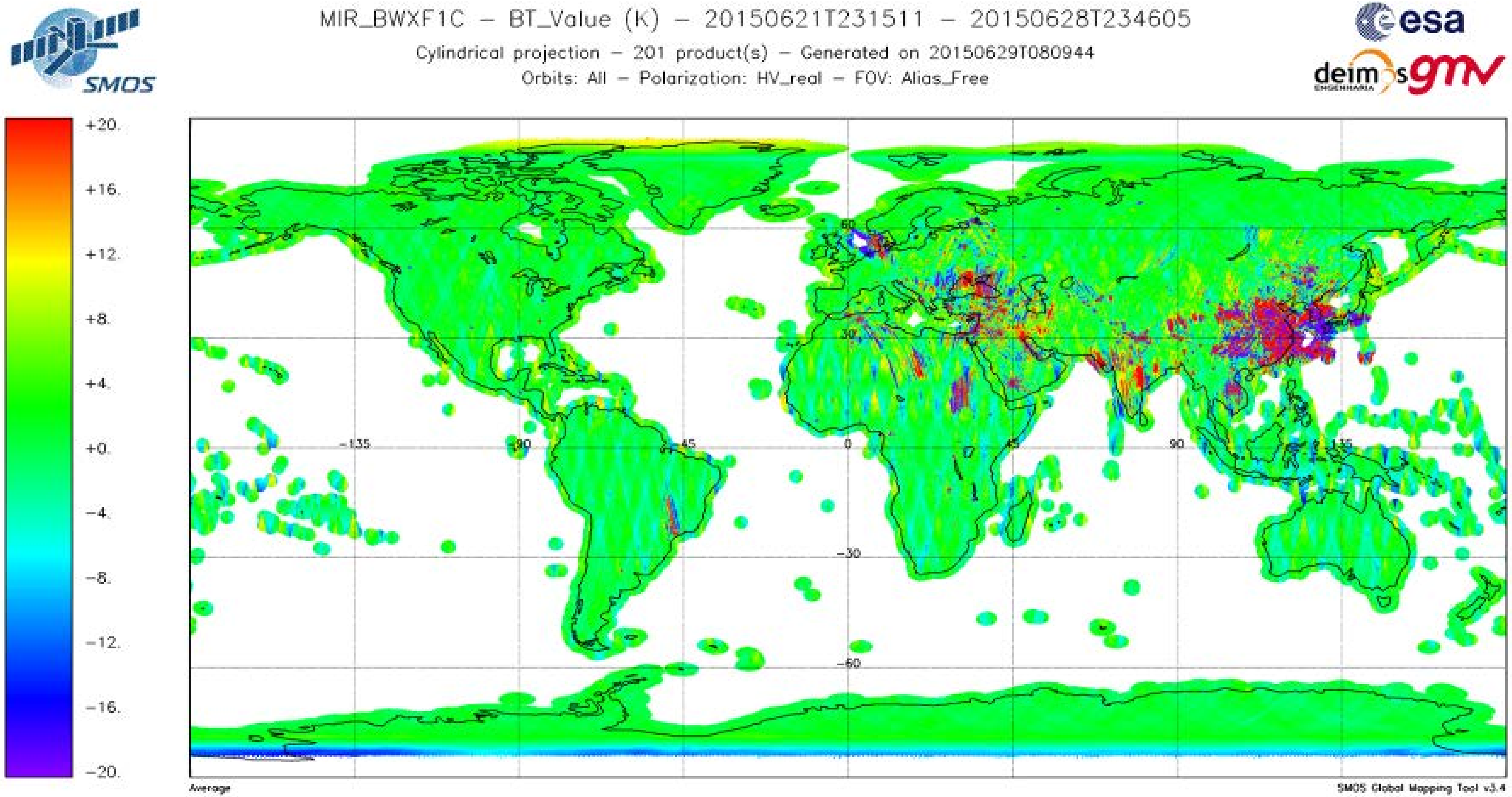

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Figure 43 Real Part of the XY Brightness temperature evolution over land during the reporting period (week 5)

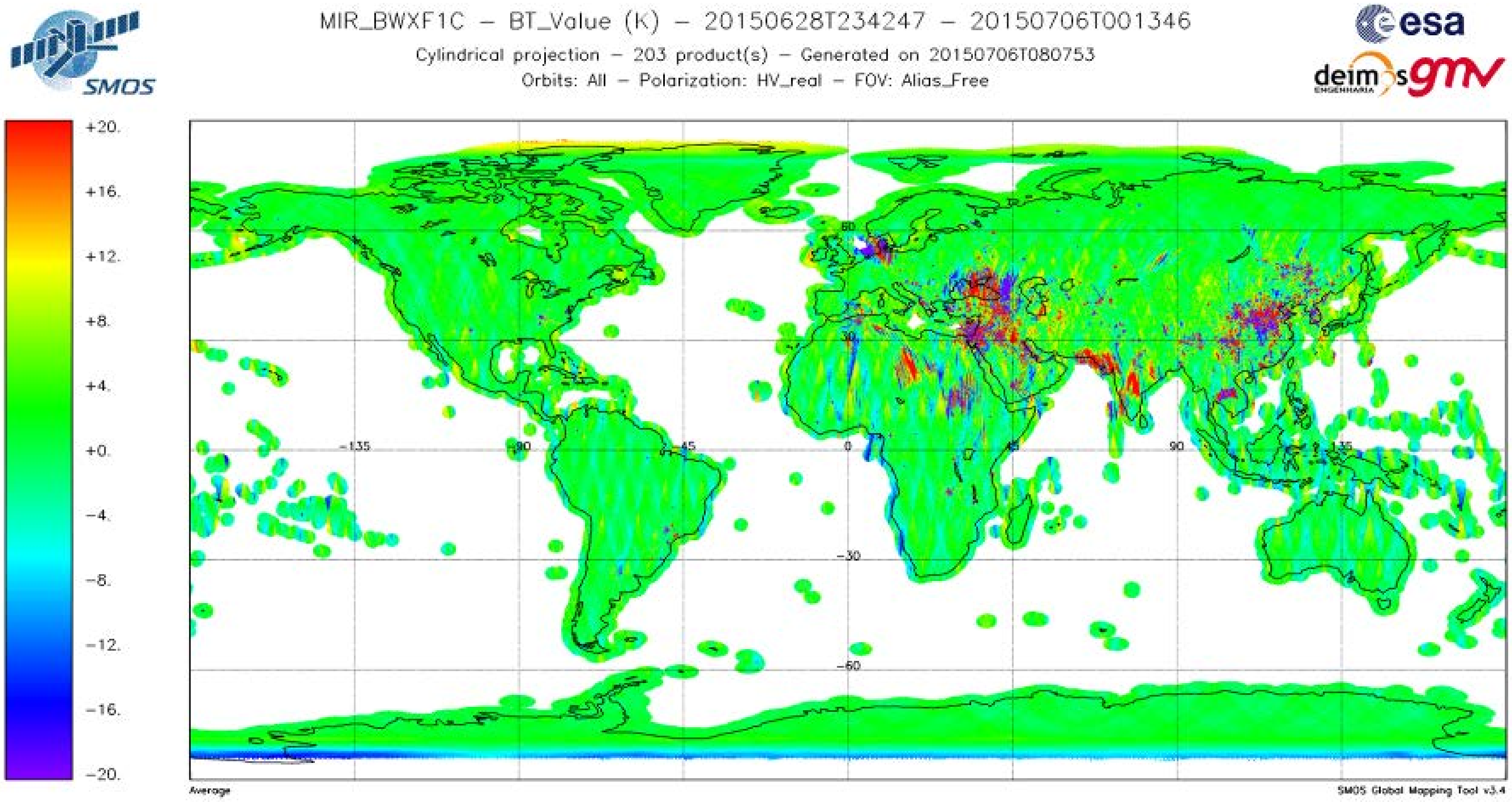

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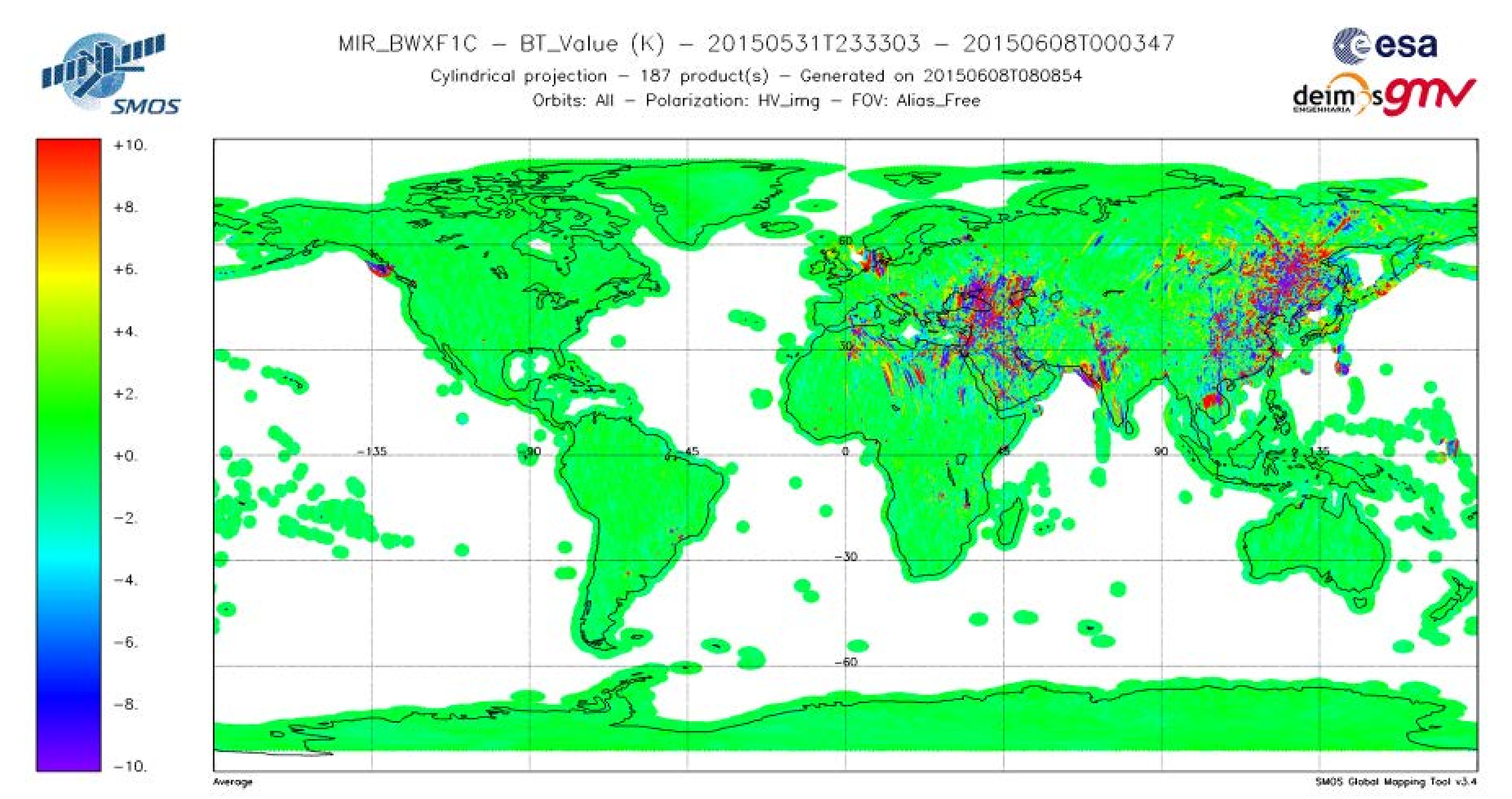
Figure 44 Imaginary Part of the XY Brightness temperature evolution over land during the reporting period (week 1)



© 2015

Figure 45 Imaginary Part of the XY Brightness temperature evolution over land during the reporting period (week 2)

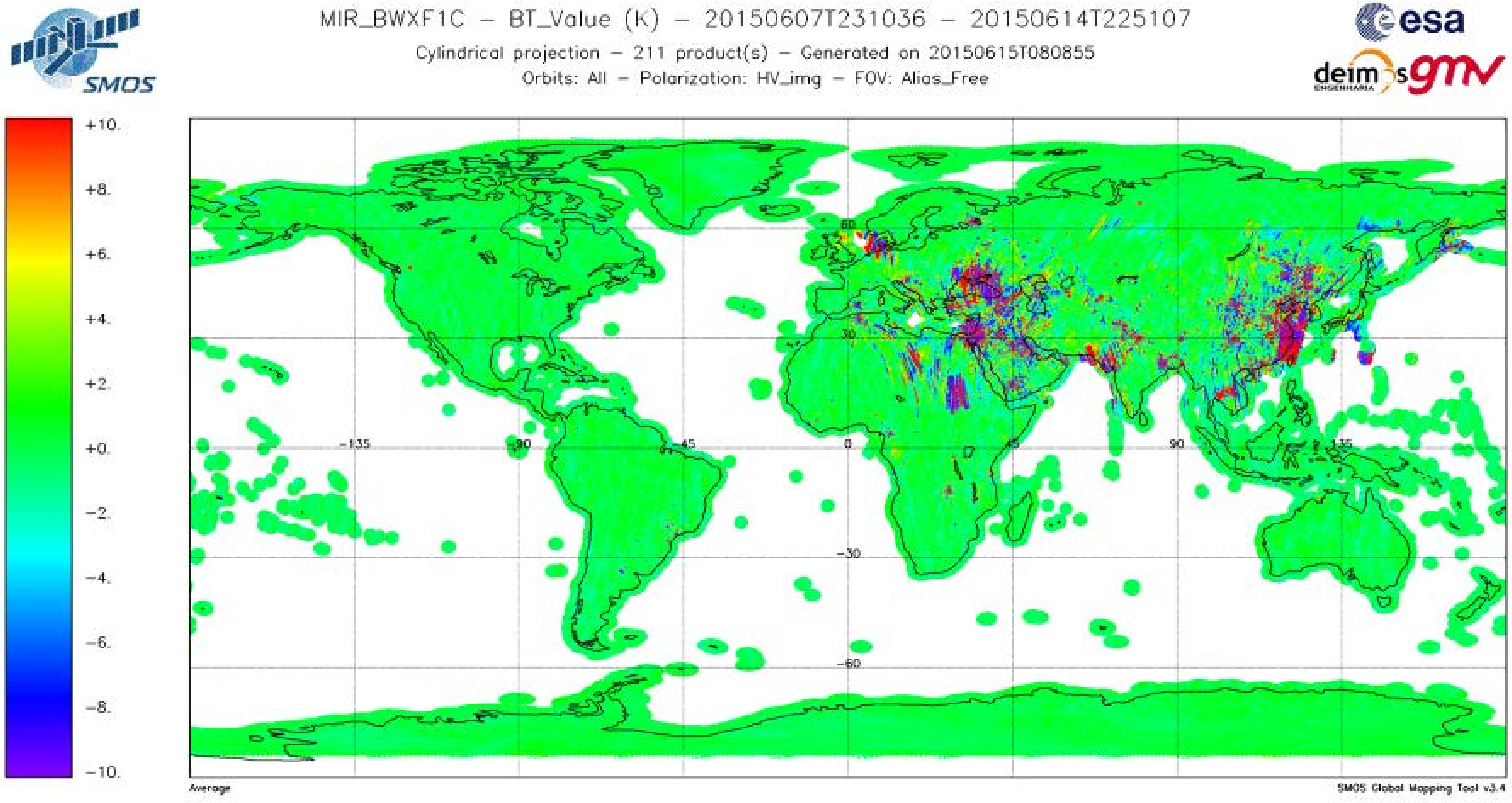


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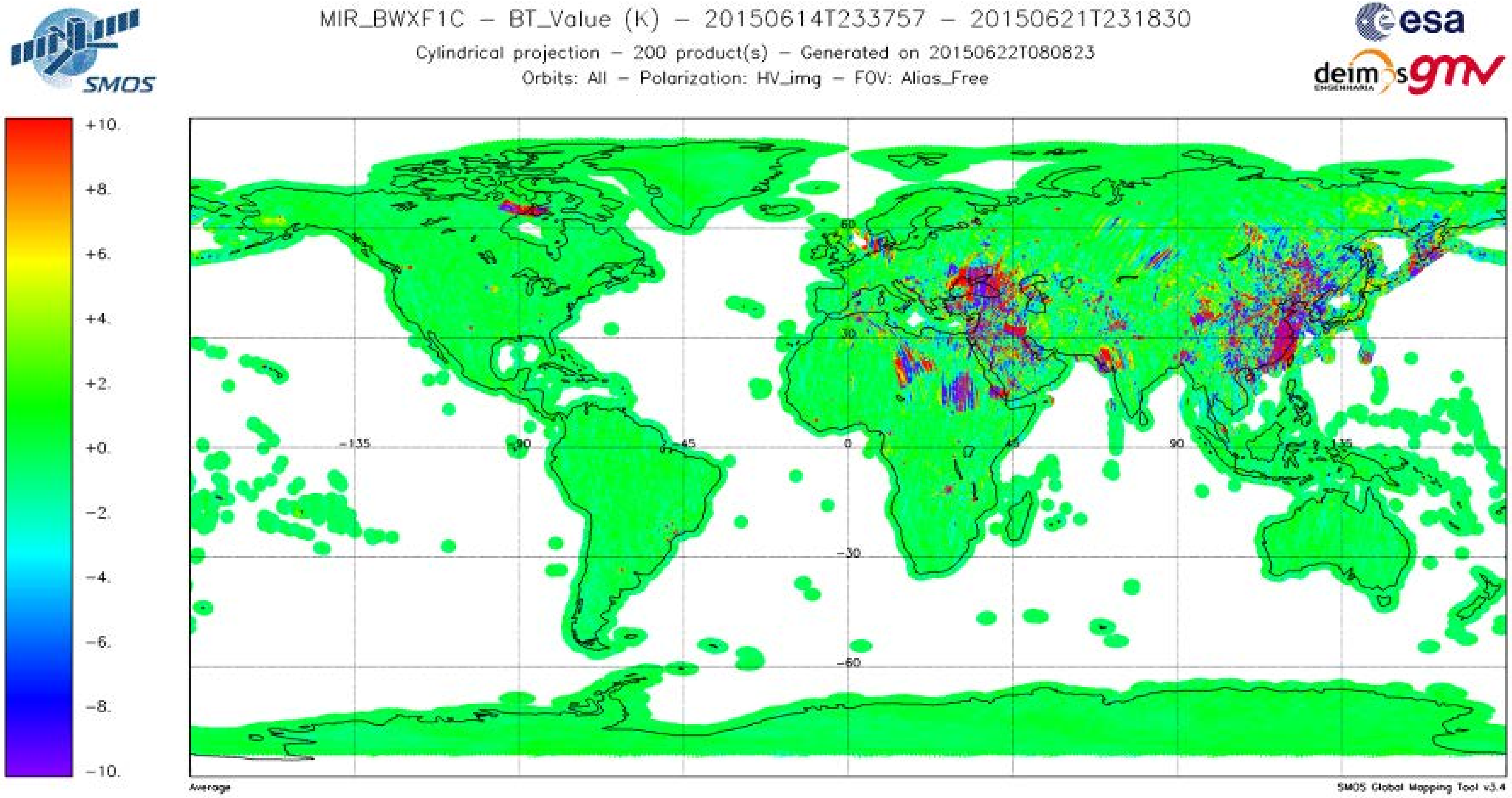
Figure 46 Imaginary Part of the XY Brightness temperature evolution over land during the reporting period (week 3)



© 2015

Figure 47 Imaginary Part of the XY Brightness temperature evolution over land during the reporting period (week 4)

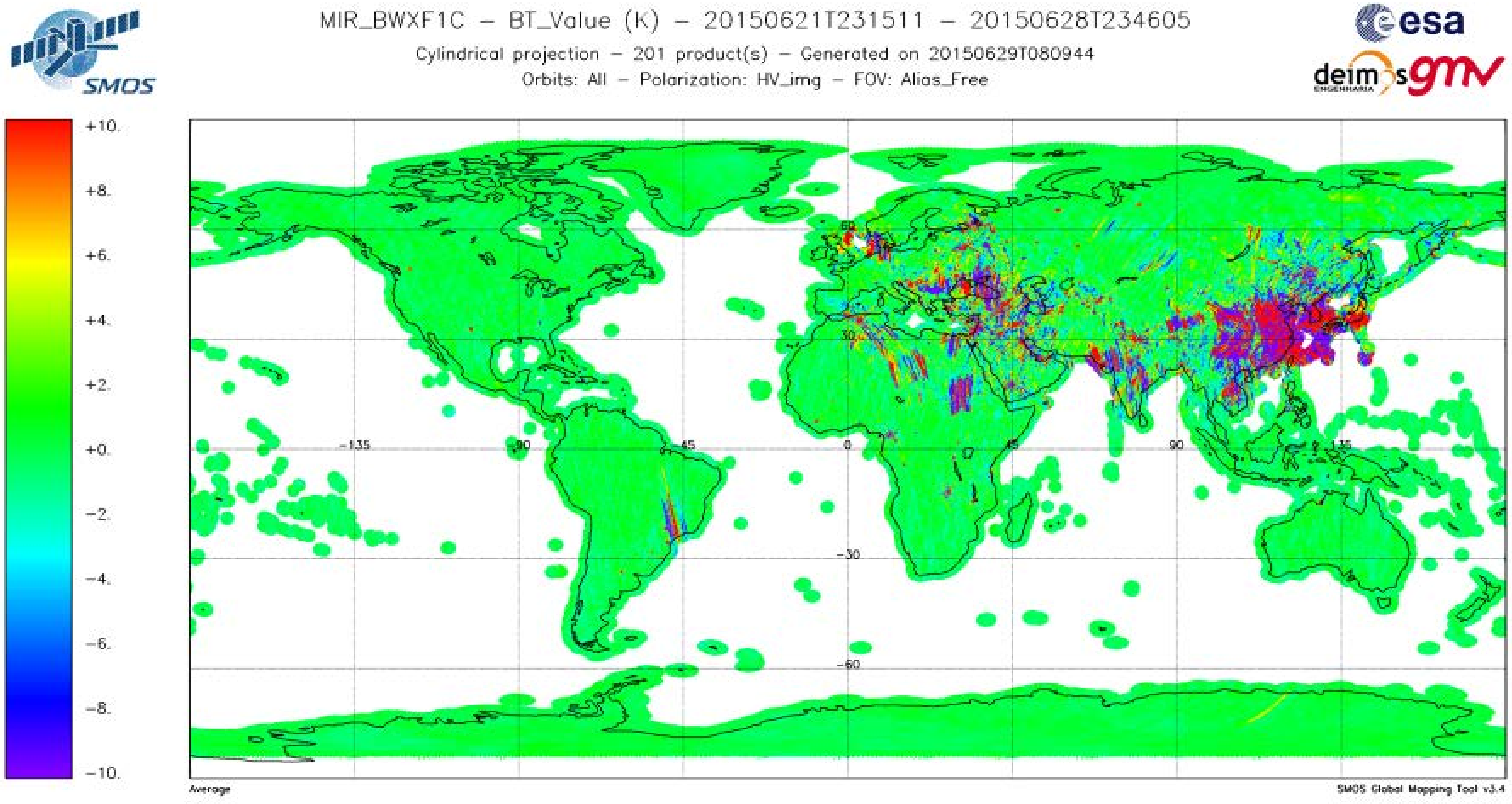


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Figure 48 Imaginary Part of the XY Brightness temperature evolution over land during the reporting period (week 5)

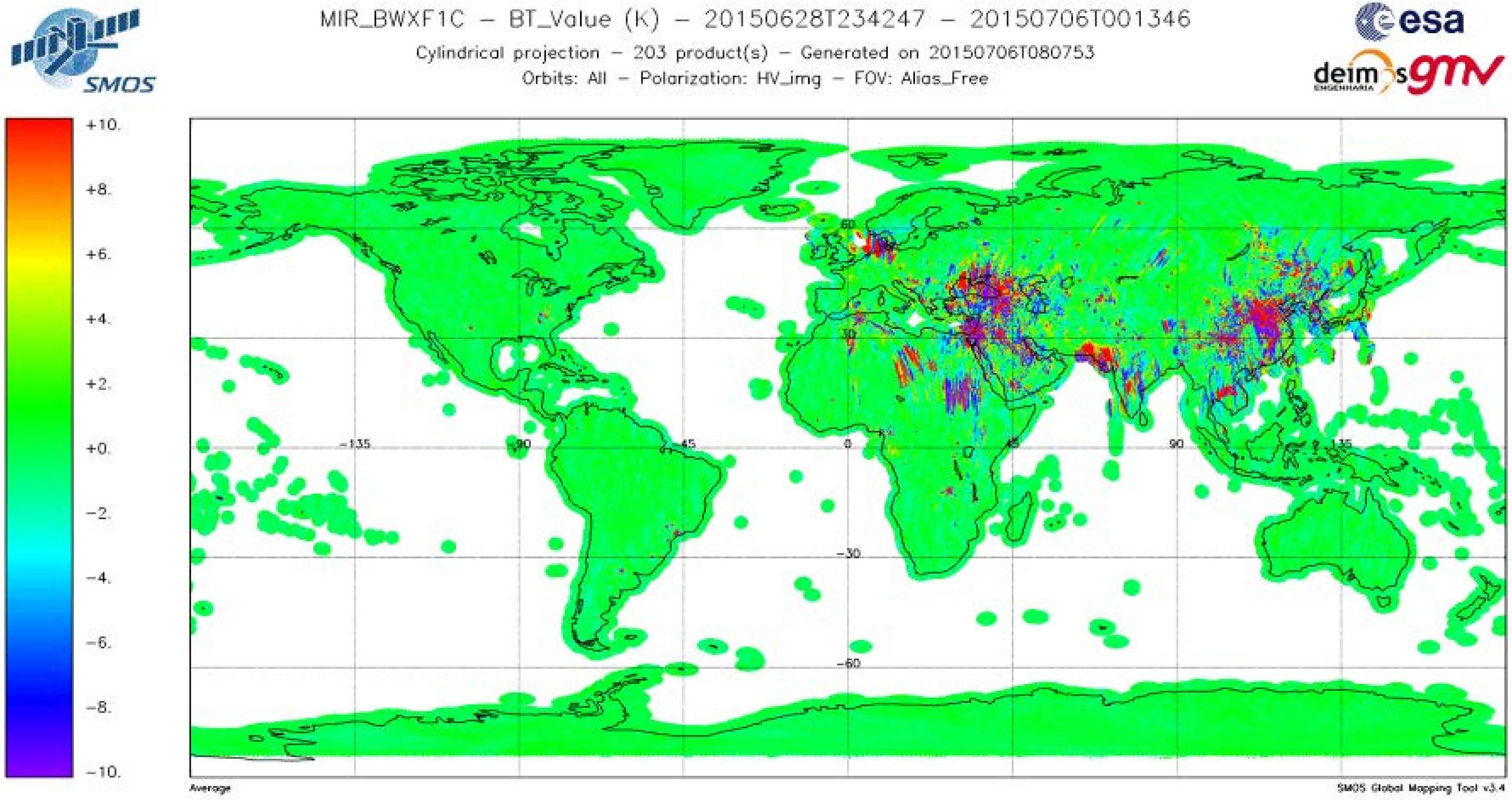

Figure 49 1st Stokes evolution over sea during the reporting period (week 1)

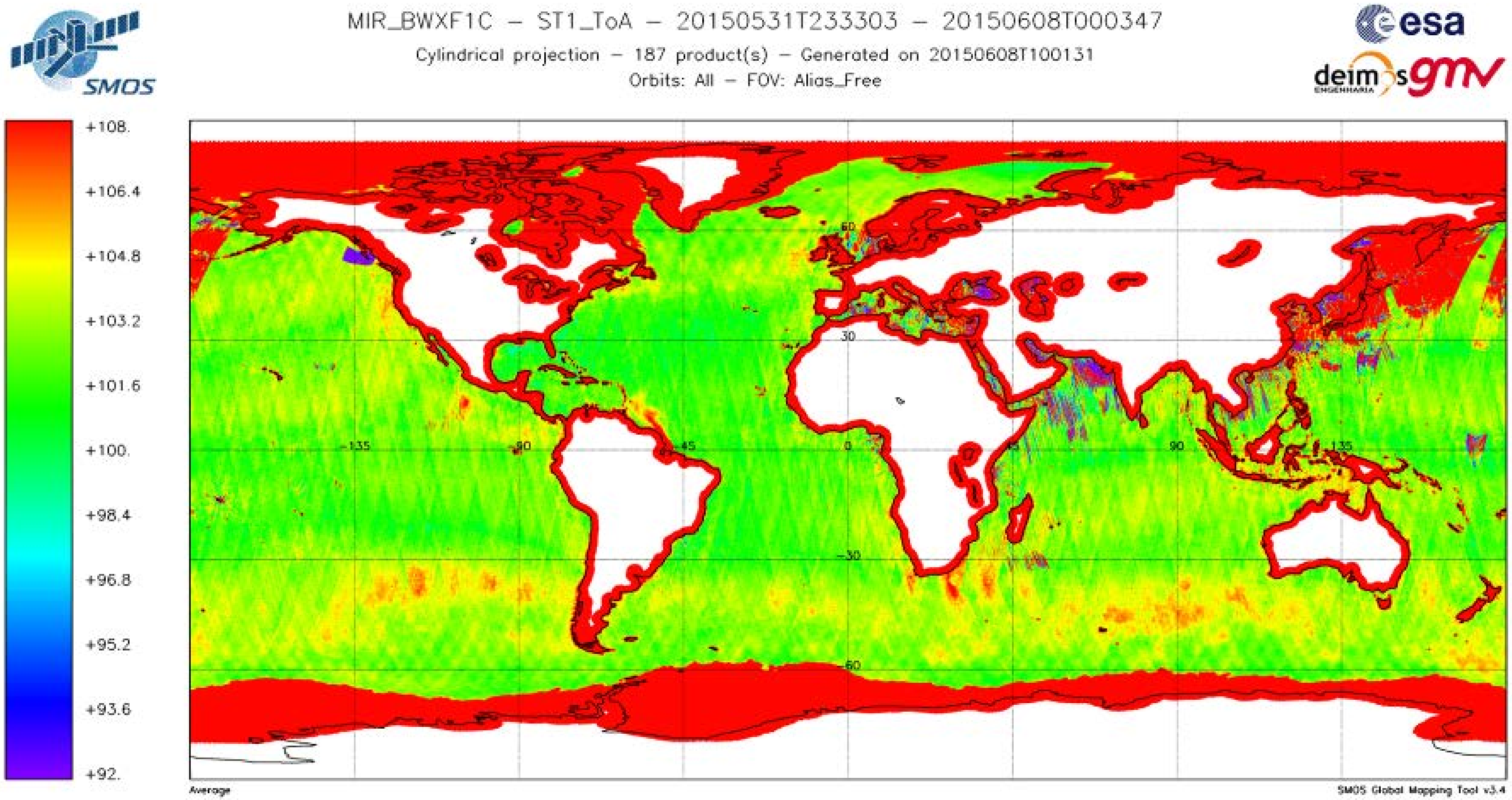

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Figure 50 1st Stokes evolution over sea during the reporting period (week 2)

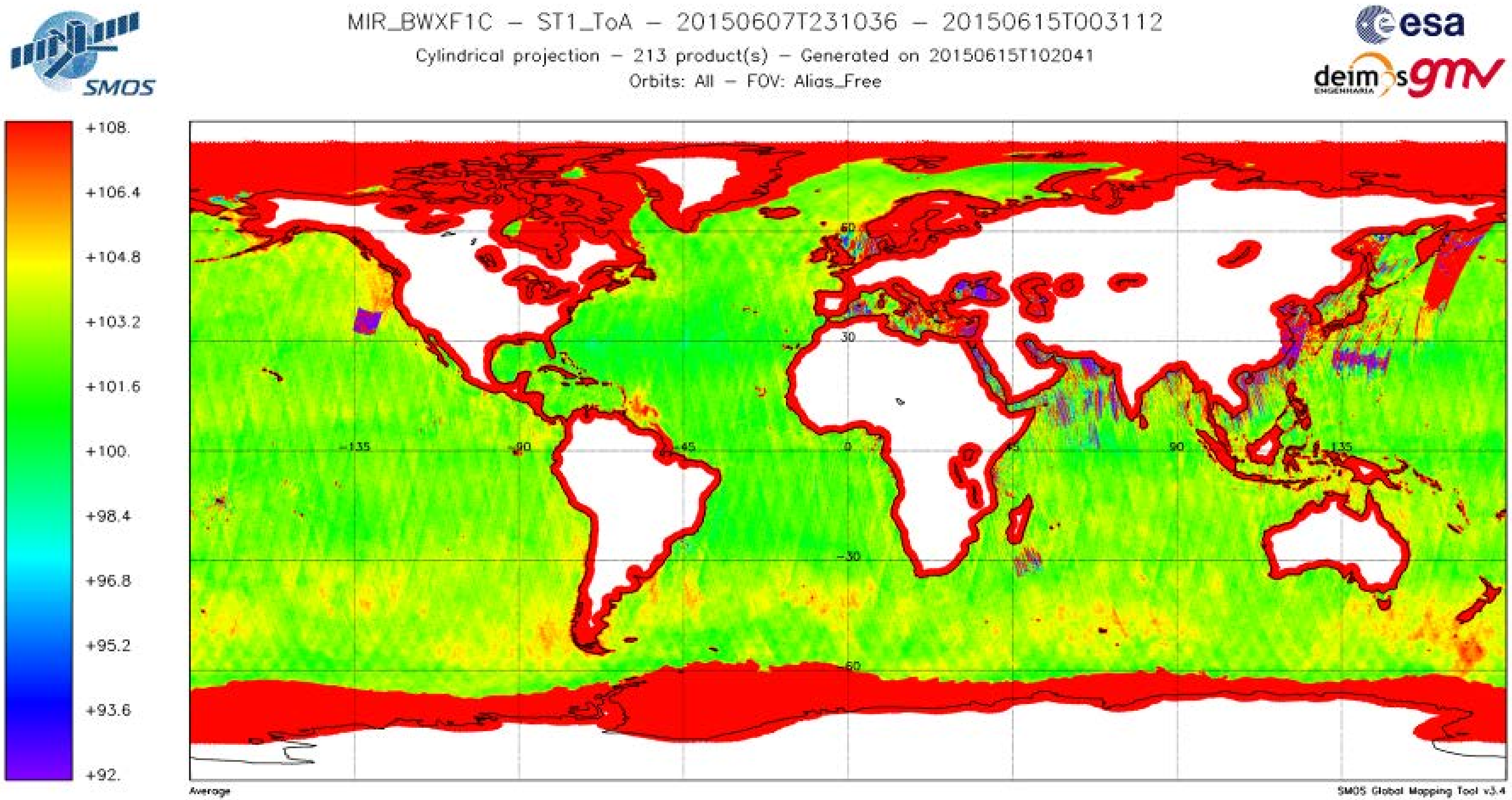

Figure 51 1st Stokes evolution over sea during the reporting period (week 3)

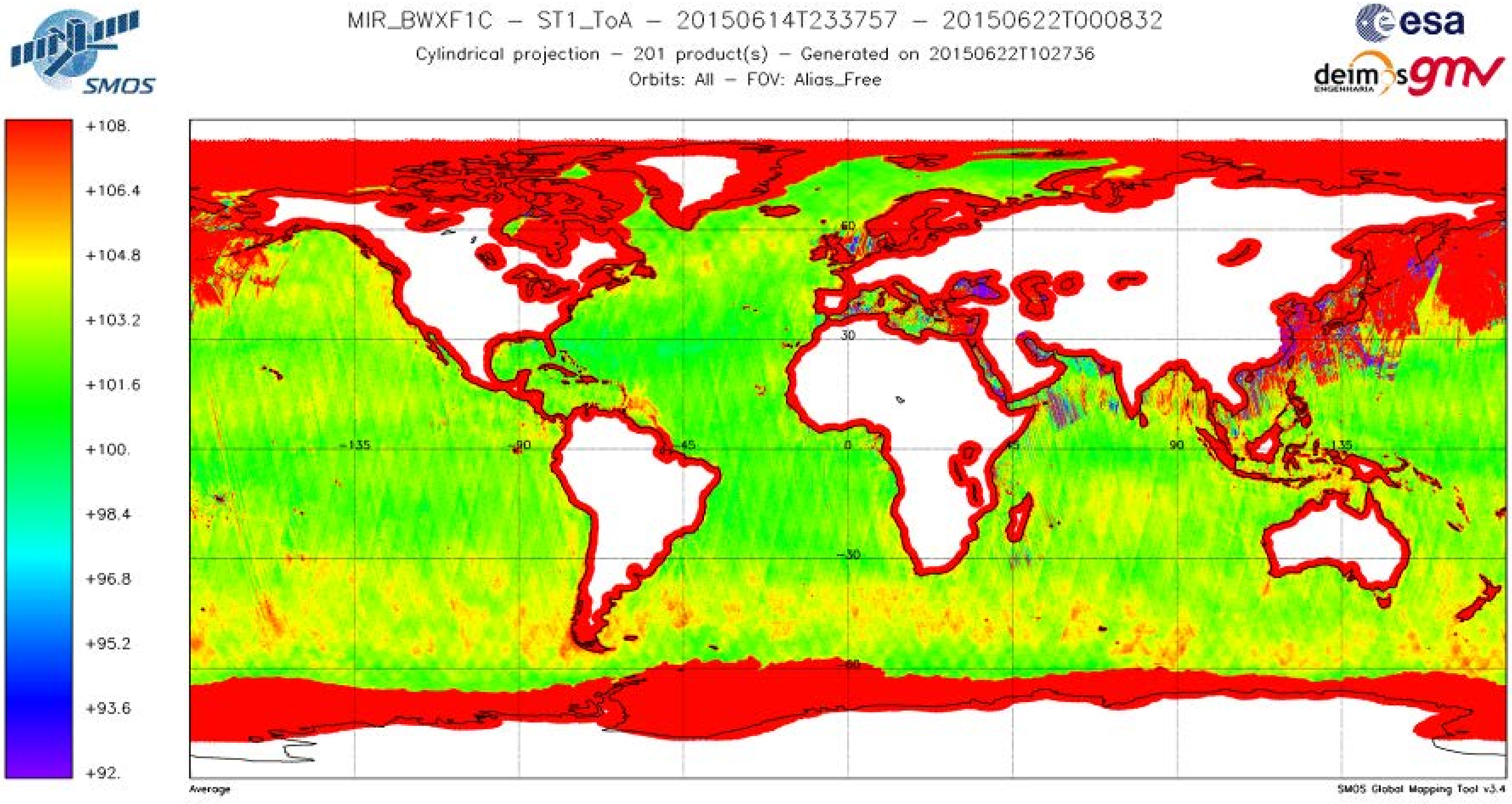

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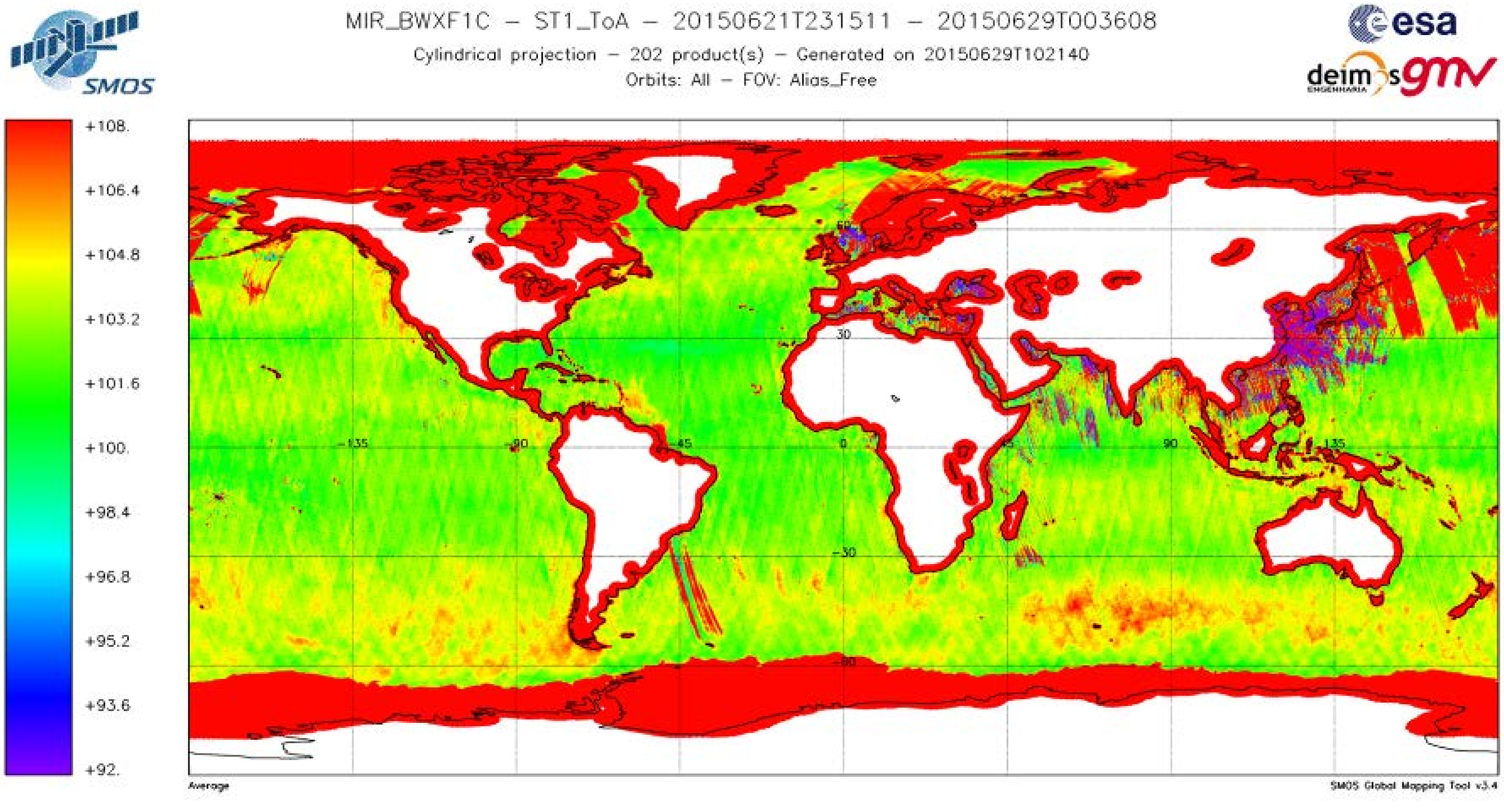
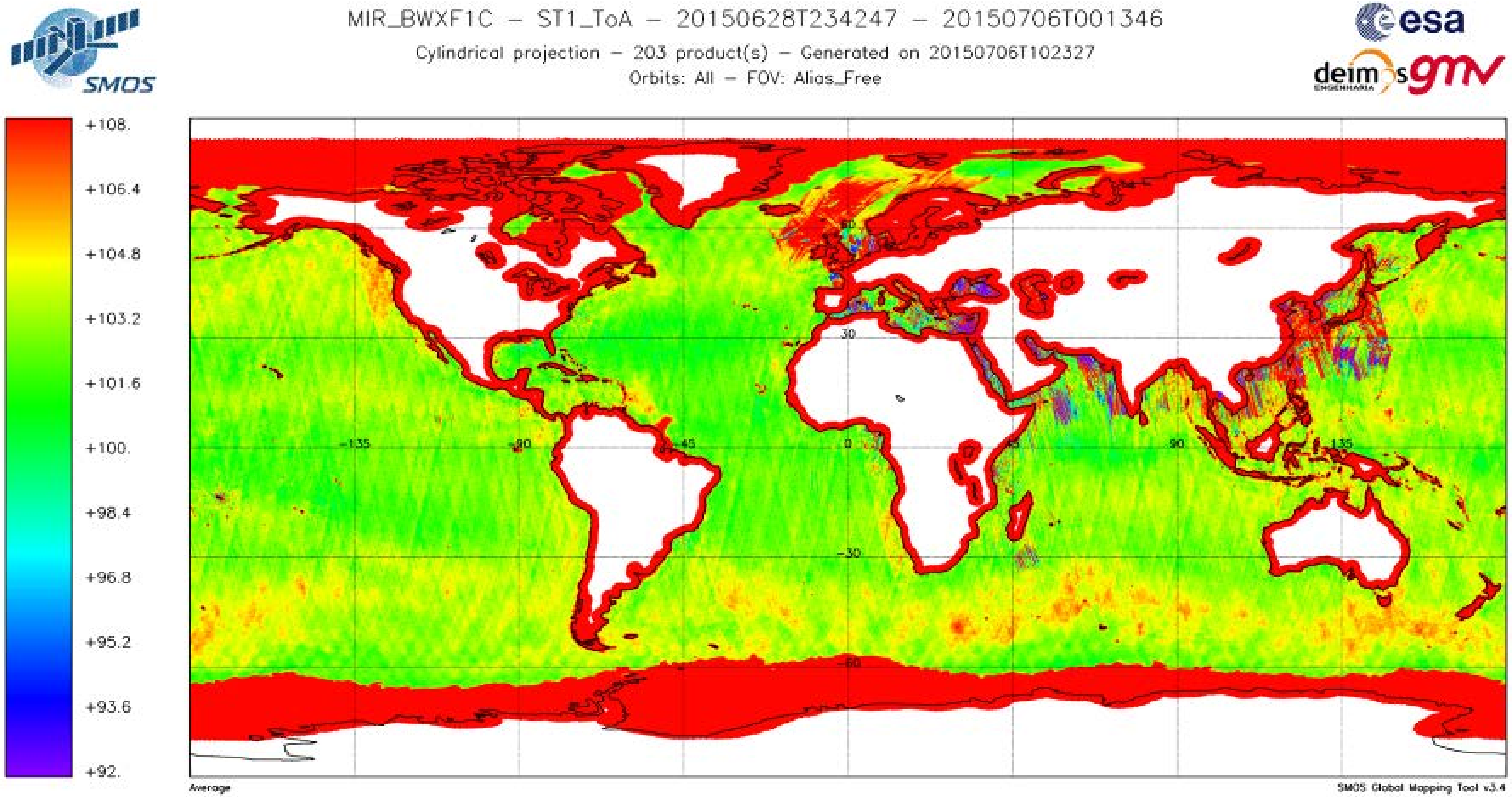
Figure 52 1st Stokes evolution over sea during the reporting period (week 4)



© 2015

Figure 53 1st Stokes evolution over sea during the reporting period (week 5)



© 2015

Figure 54 Real Part of the XY Brightness temperature evolution over sea during the reporting period (week 1)

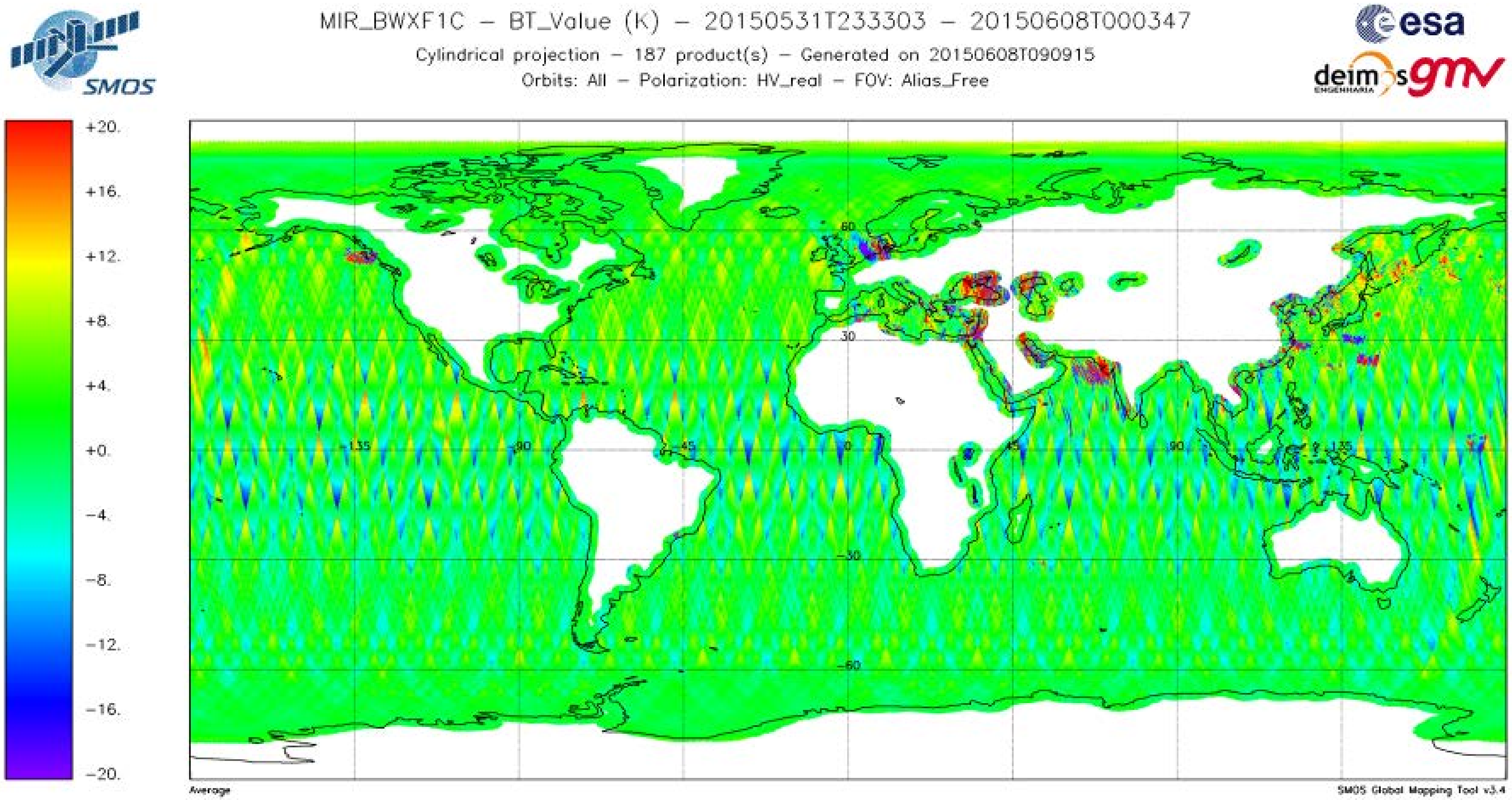


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Figure 55 Real Part of the XY Brightness temperature evolution over sea during the reporting period (week 2)

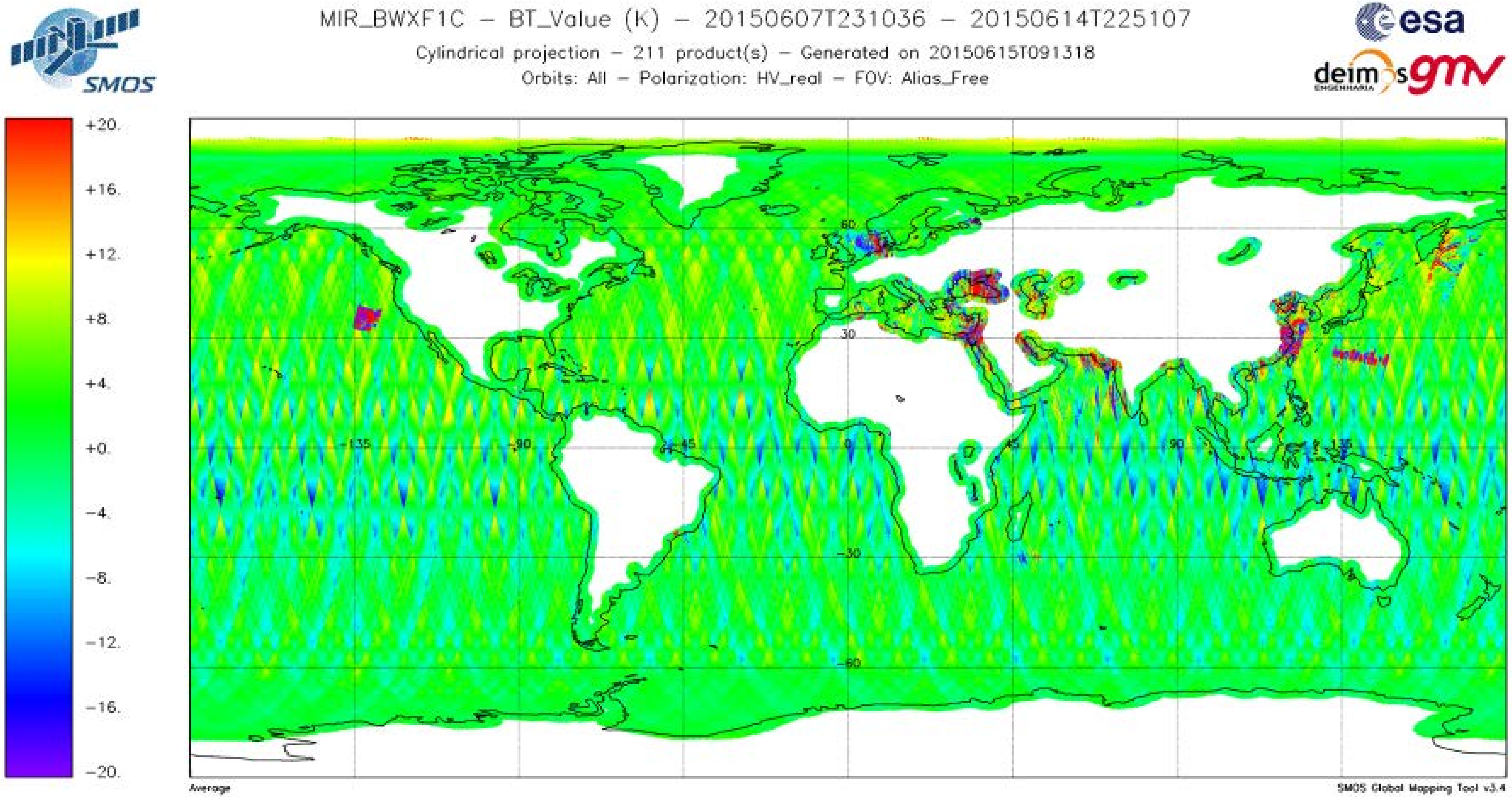

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Figure 56 Real Part of the XY Brightness temperature evolution over sea during the reporting period (week 3)

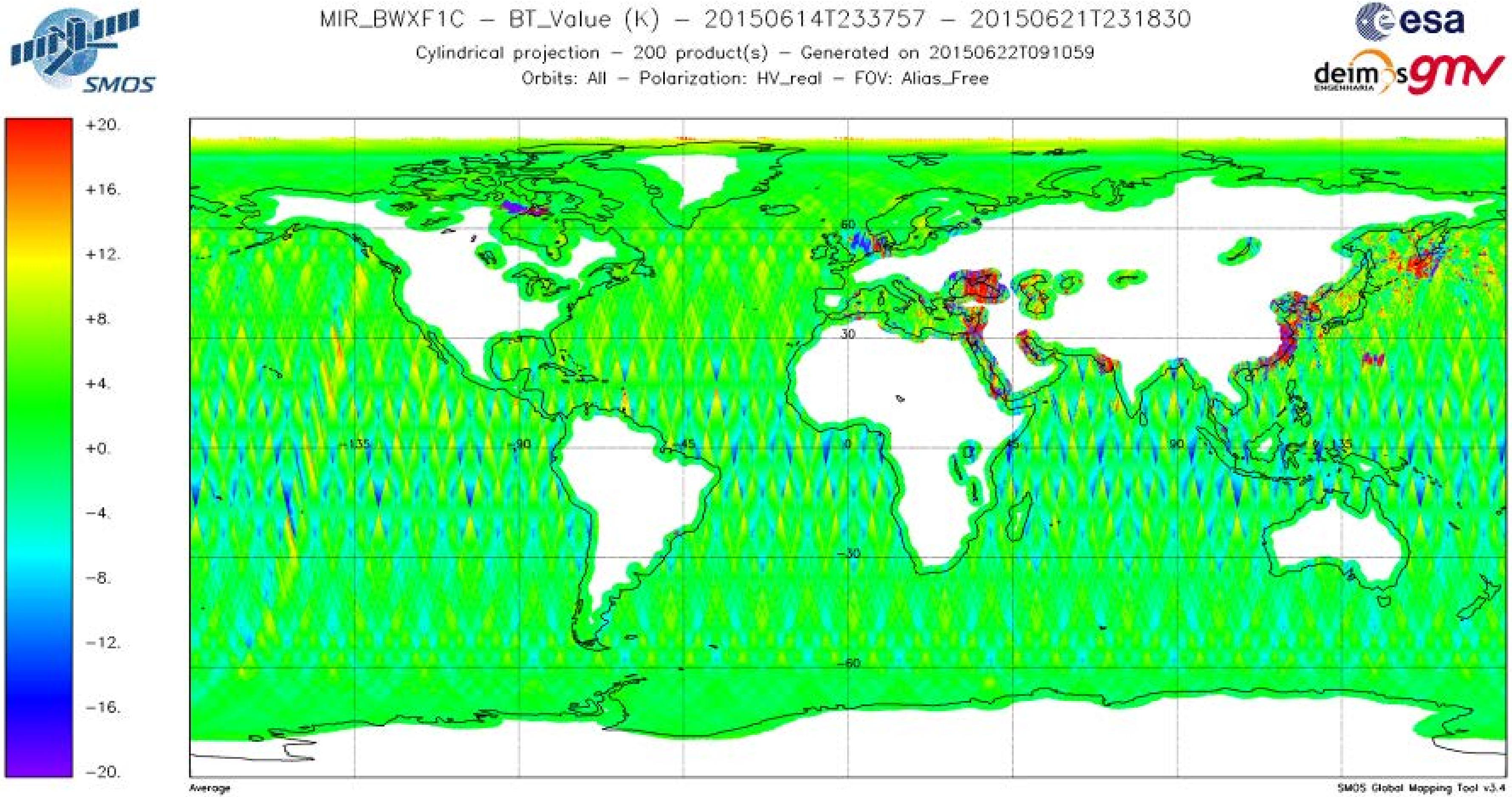

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Figure 57 Real Part of the XY Brightness temperature evolution over sea during the reporting period (week 4)

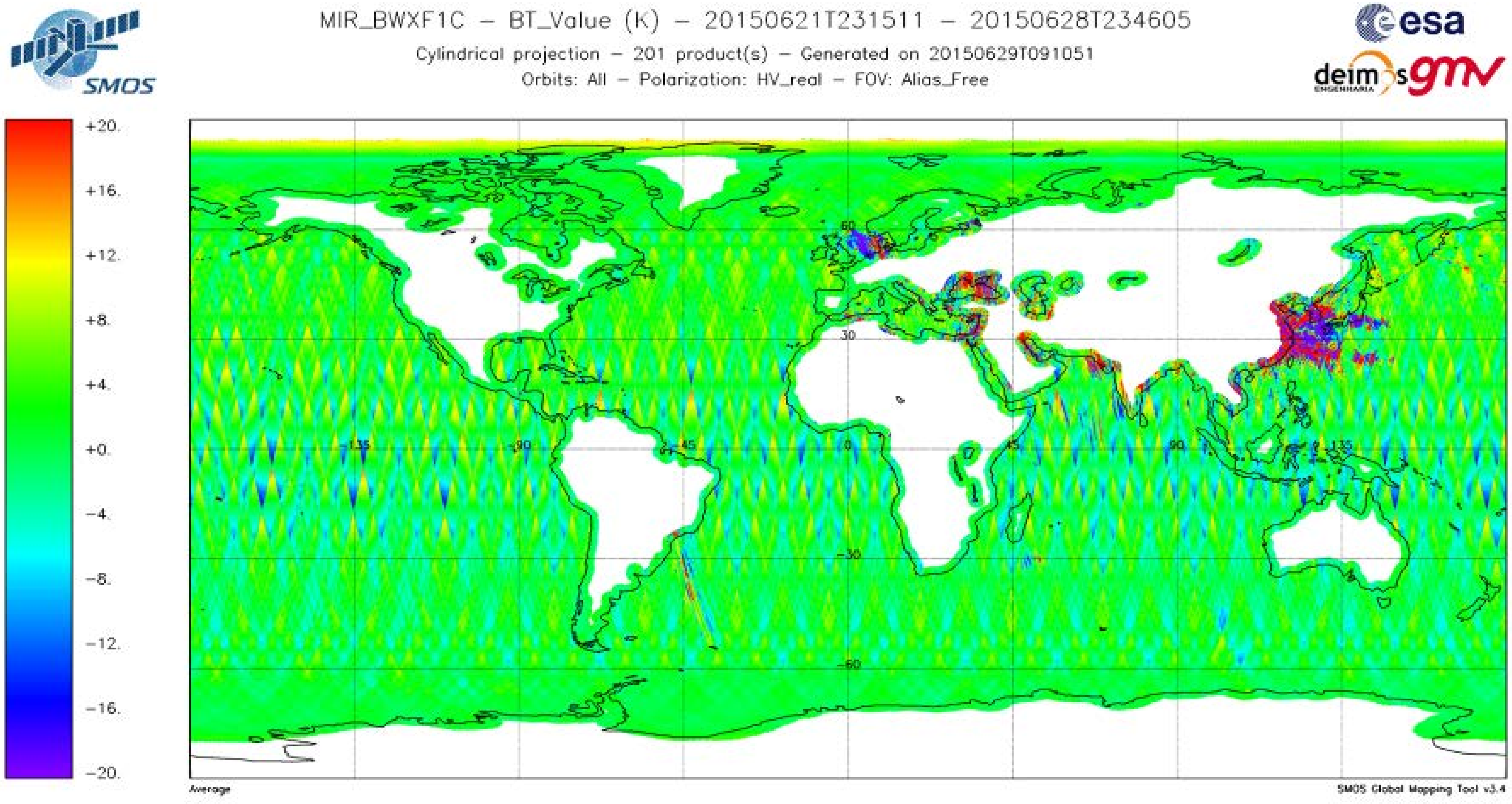

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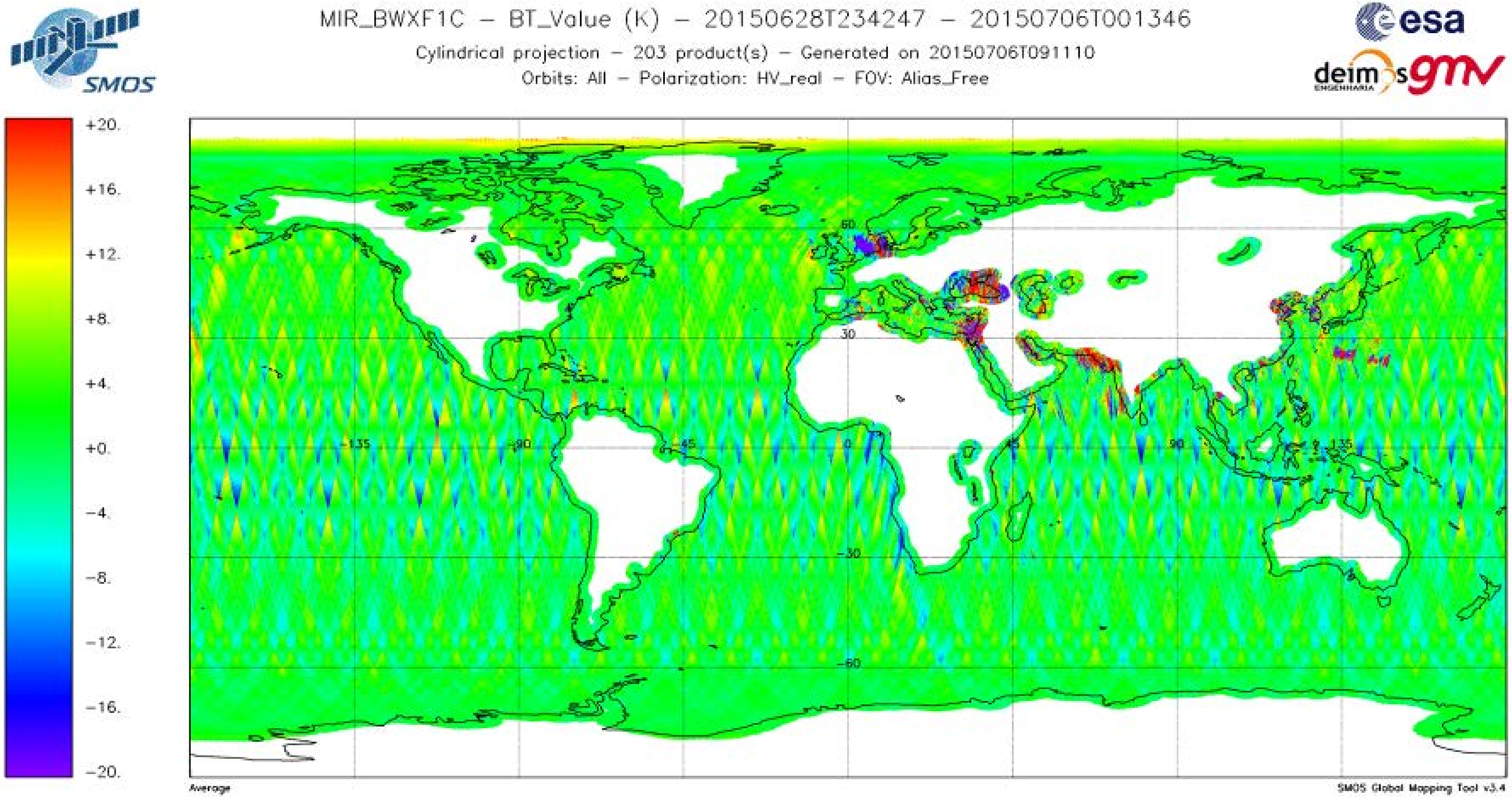
Figure 58 Real Part of the XY Brightness temperature evolution over sea during the reporting period (week 5)



© 2015

Figure 59 Imaginary Part of the XY Brightness temperature evolution over sea during the reporting period (week 1)

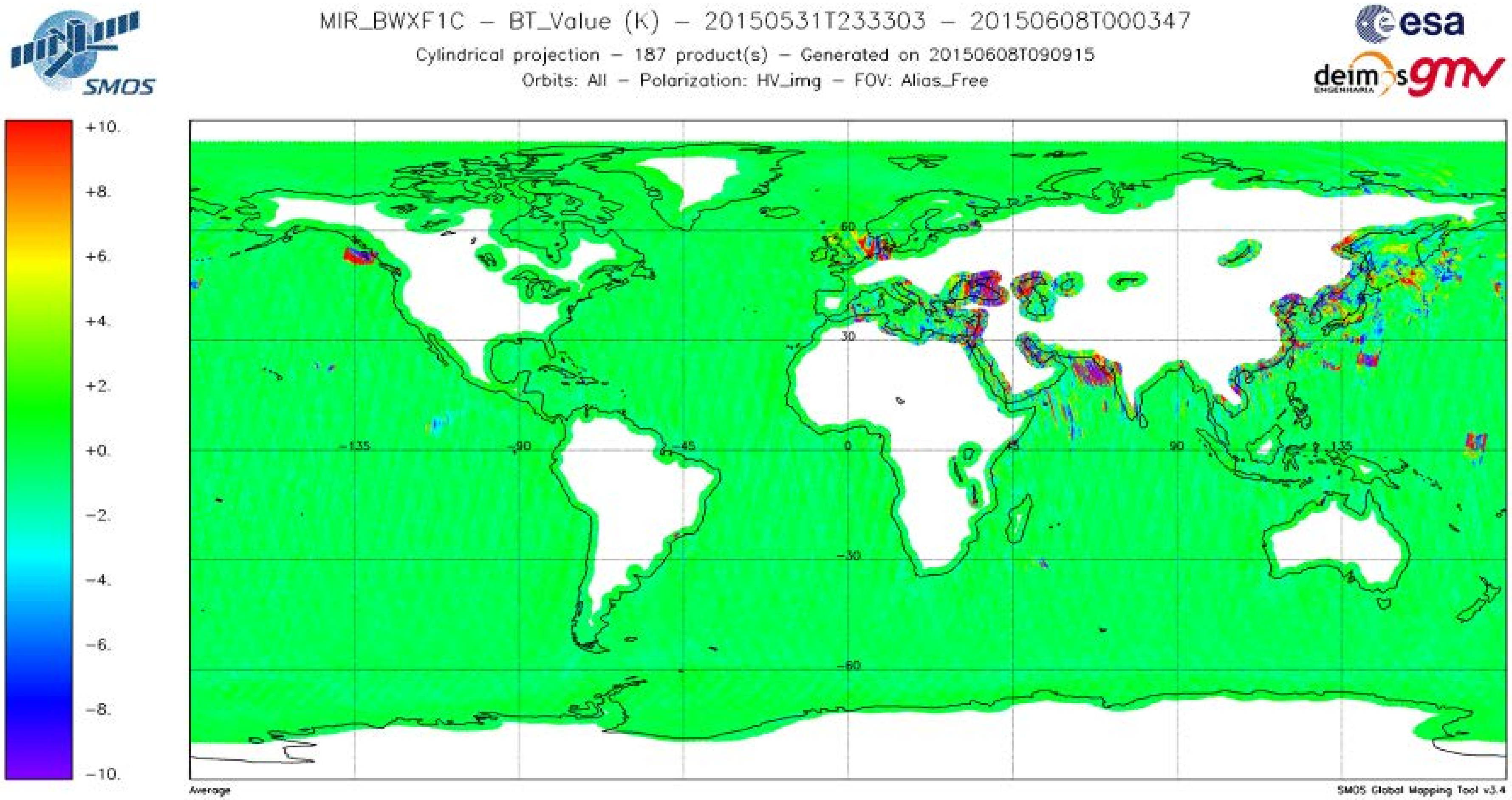


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Figure 60 Imaginary Part of the XY Brightness temperature evolution over sea during the reporting period (week 2)

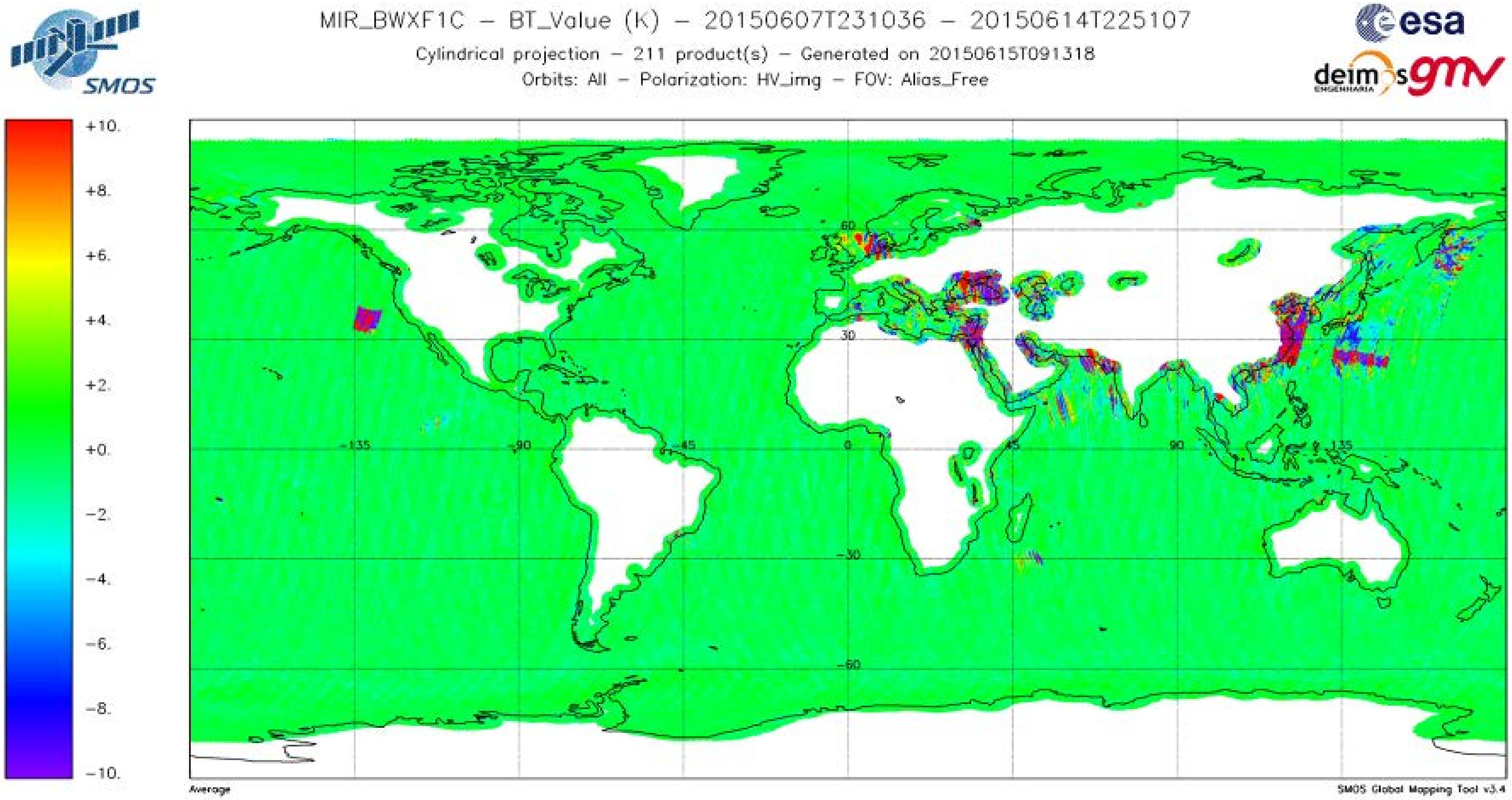

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Figure 61 Imaginary Part of the XY Brightness temperature evolution over sea during the reporting period (week 3)

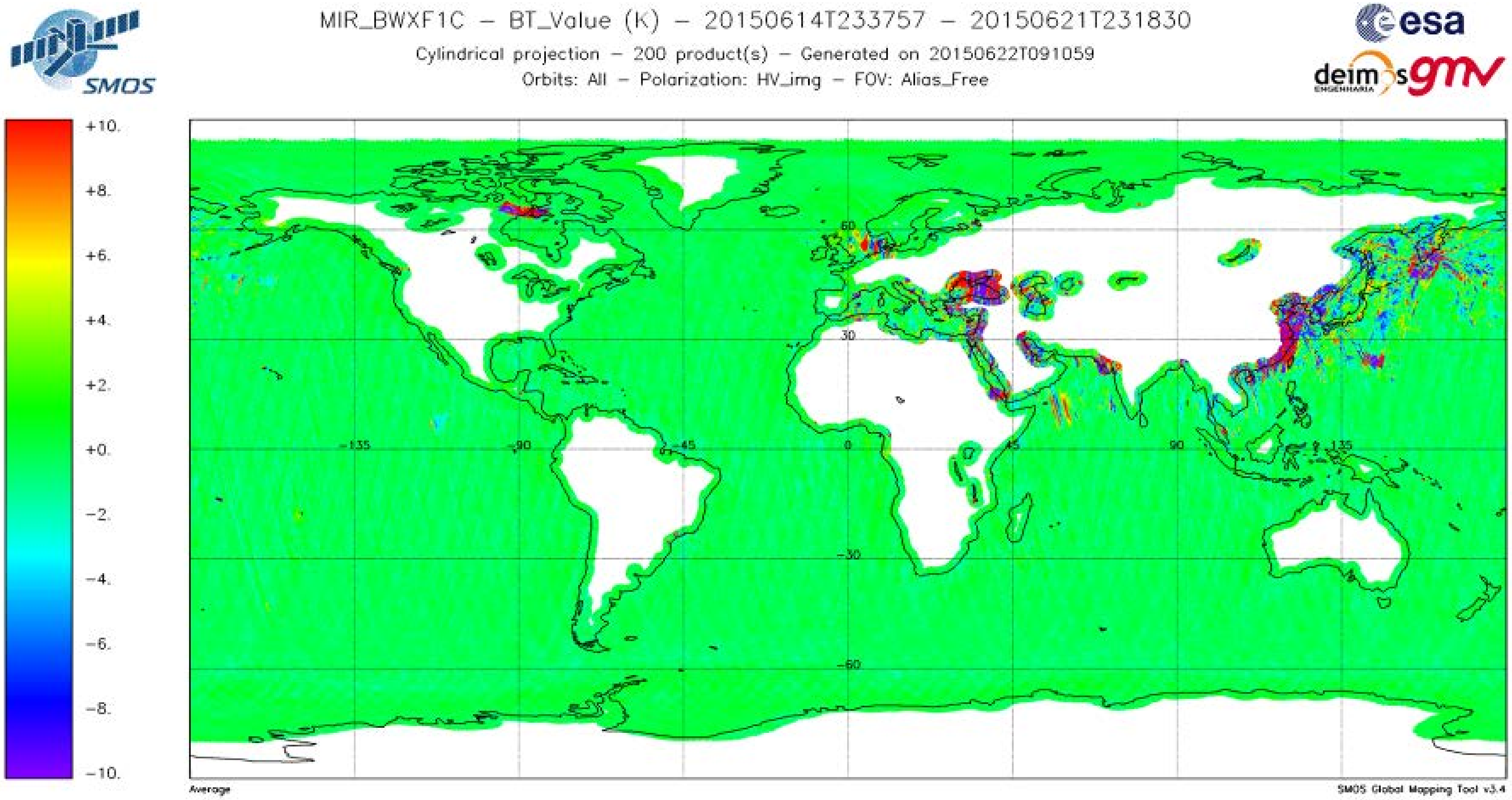

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Figure 62 Imaginary Part of the XY Brightness temperature evolution over sea during the reporting period (week 4)

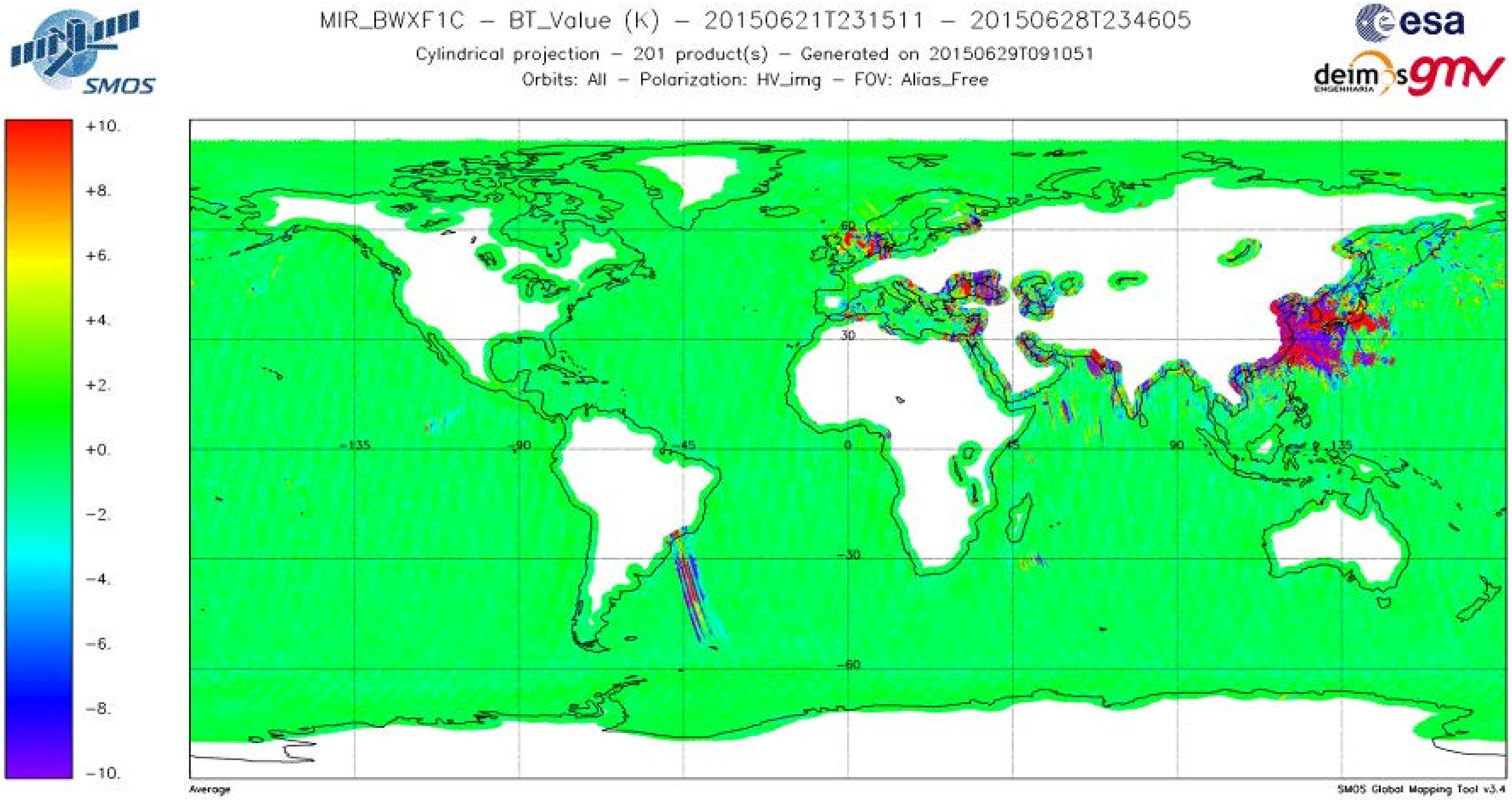

Figure 62 Imaginary Part of the XY Brightness temperature evolution over sea during the reporting period (week 5)

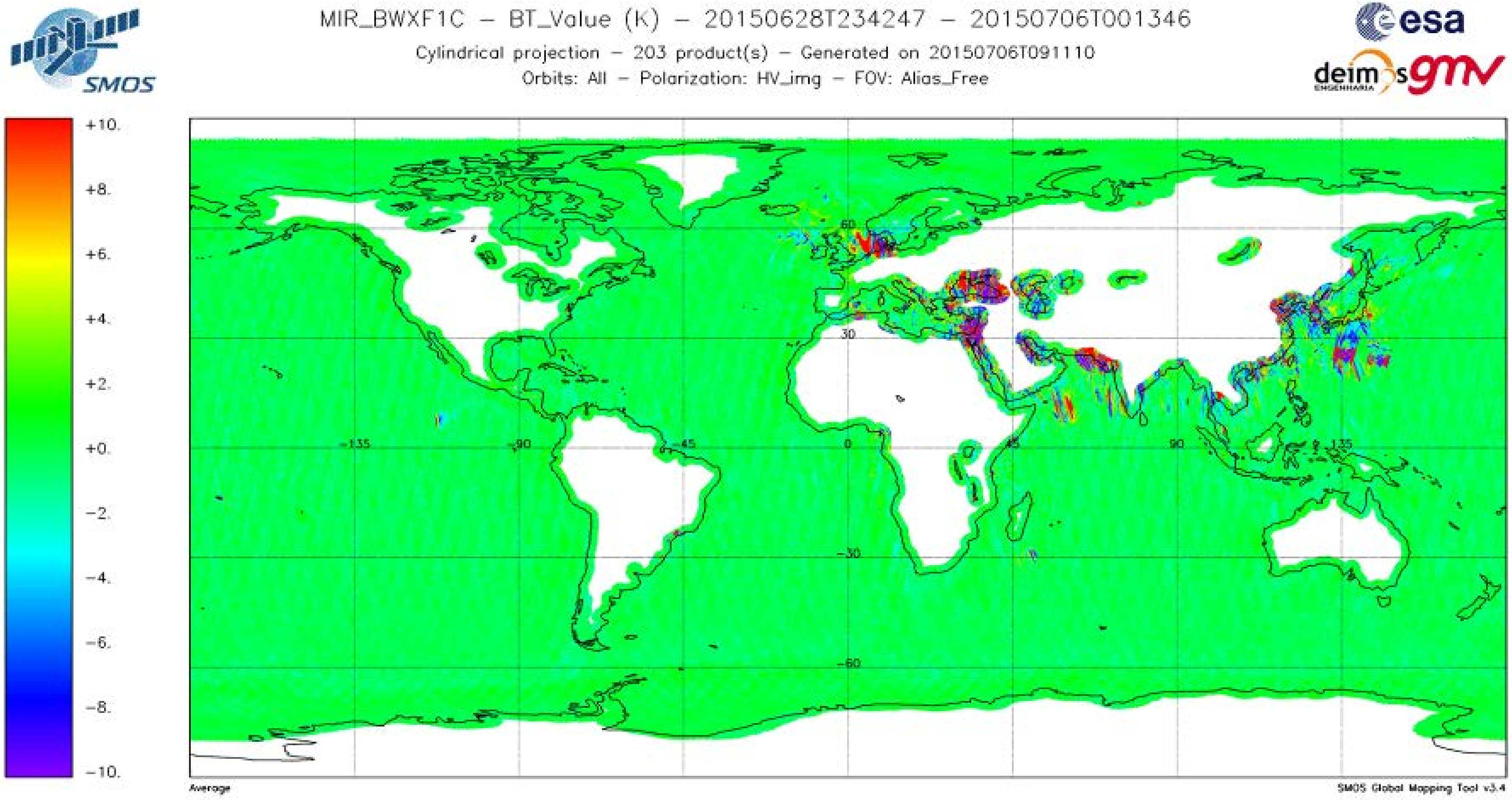

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Figure 64 Soil moisture evolution during the reporting period (week 1)

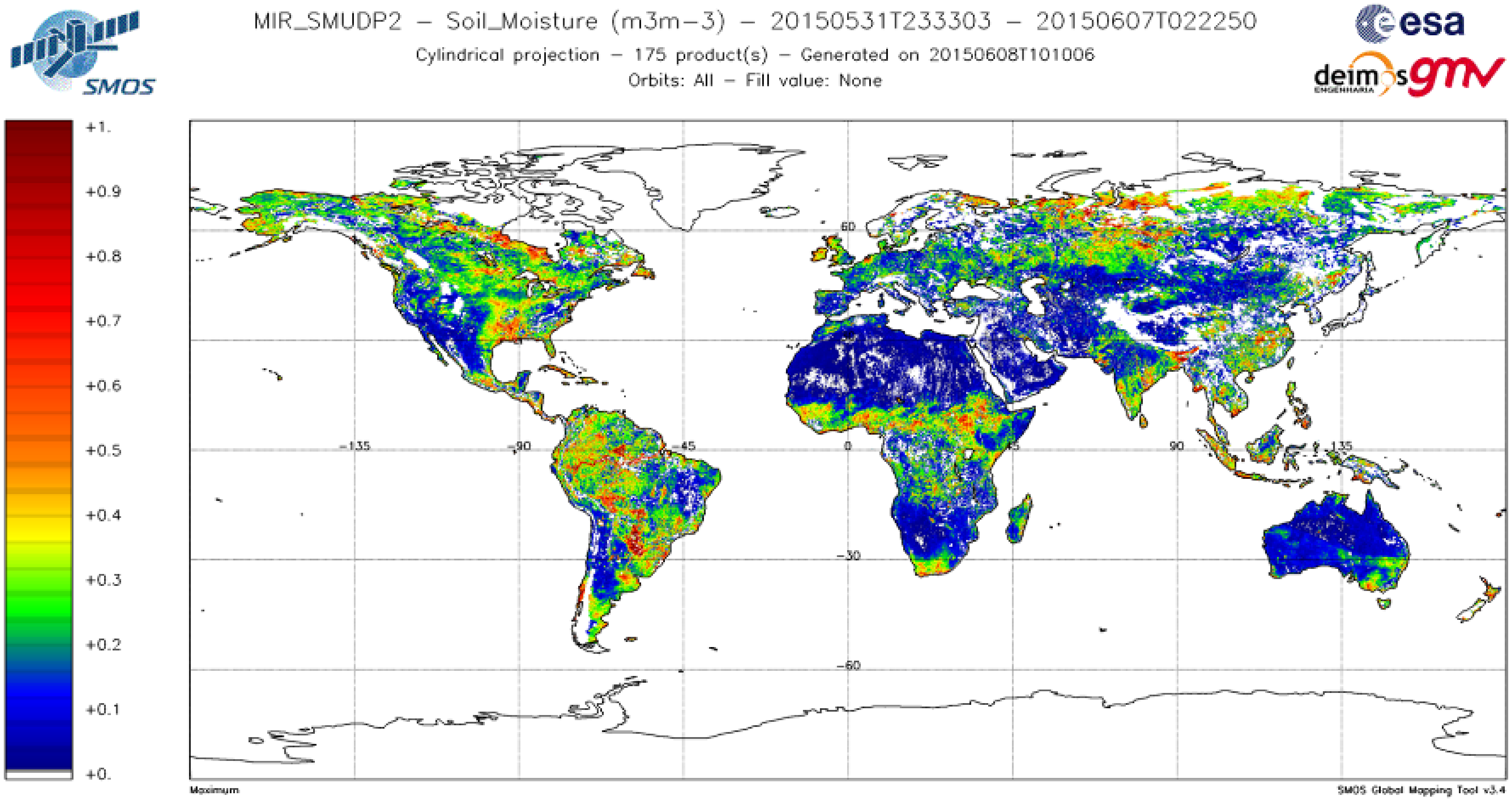

Figure 65 Soil moisture evolution during the reporting period (week 2)

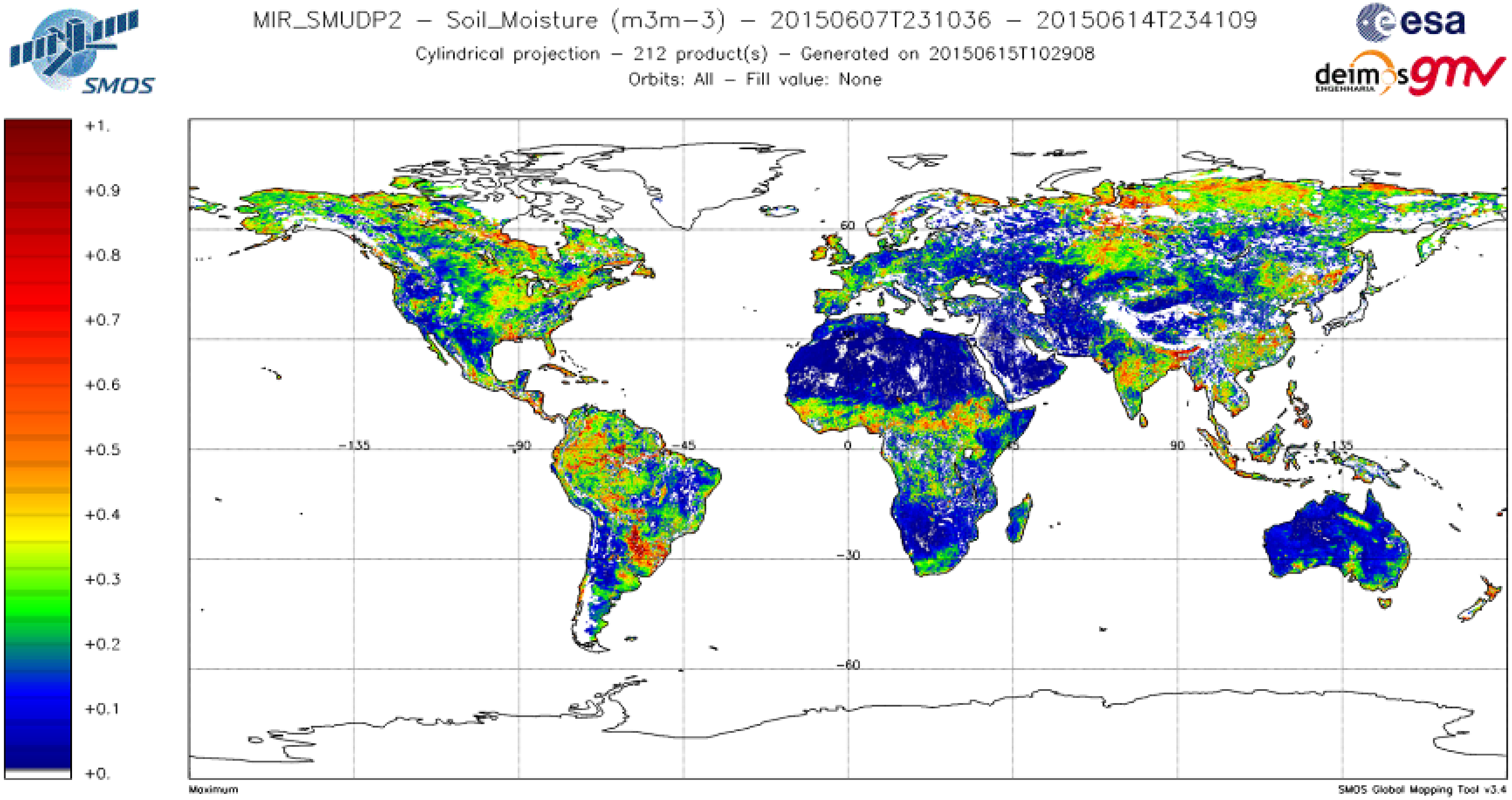

Figure 66 Soil moisture evolution during the reporting period (week 3)

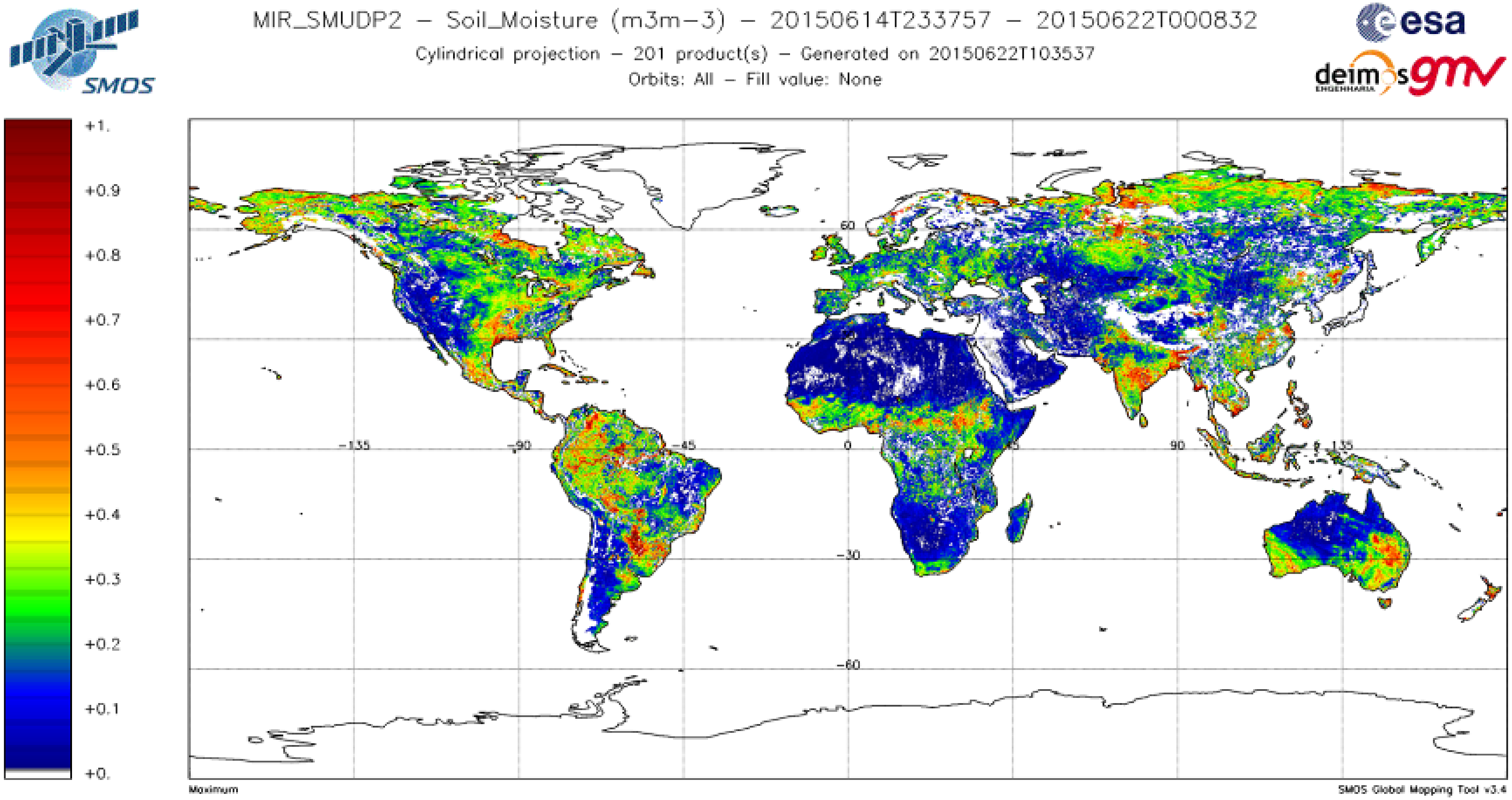

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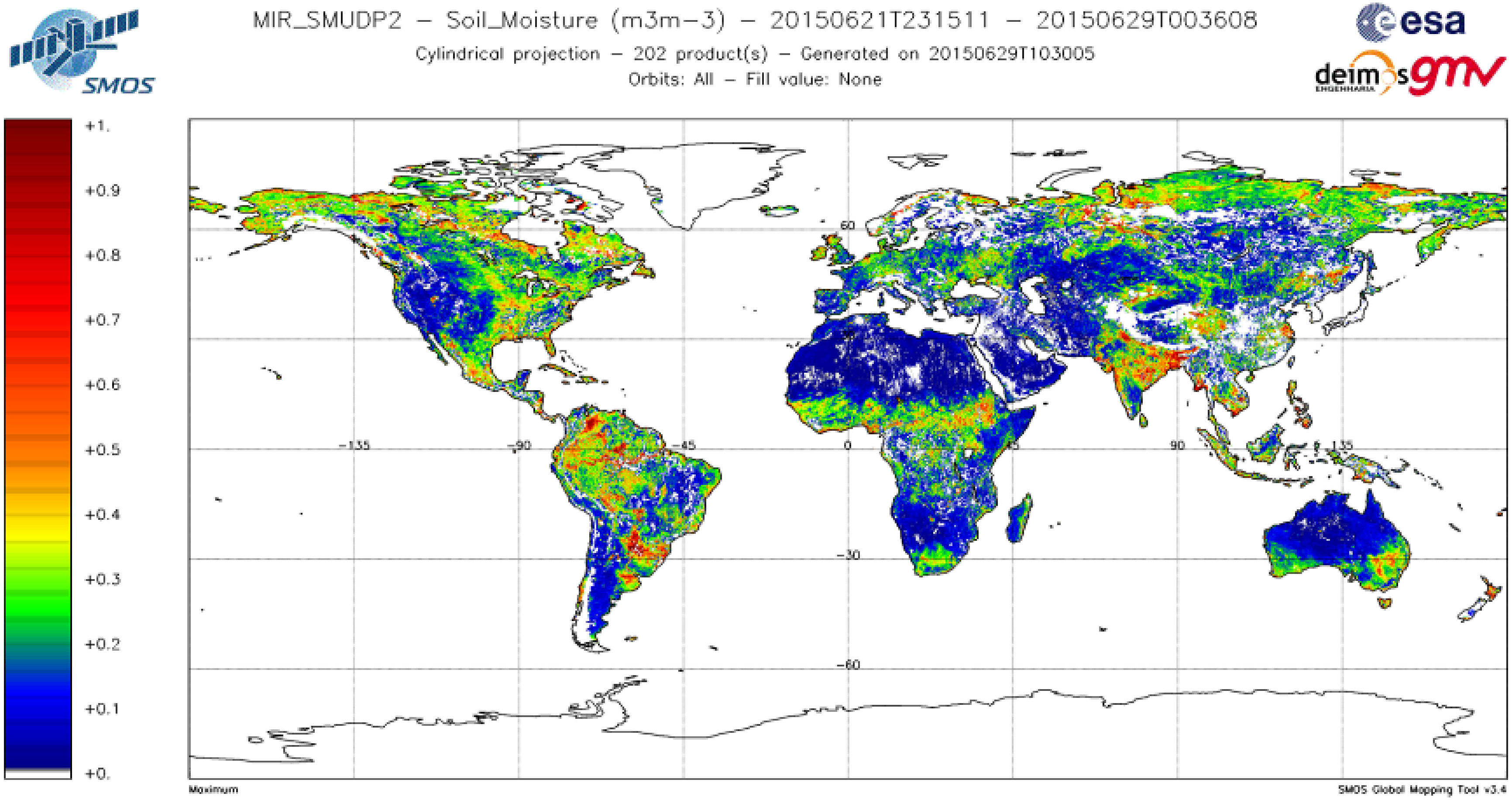
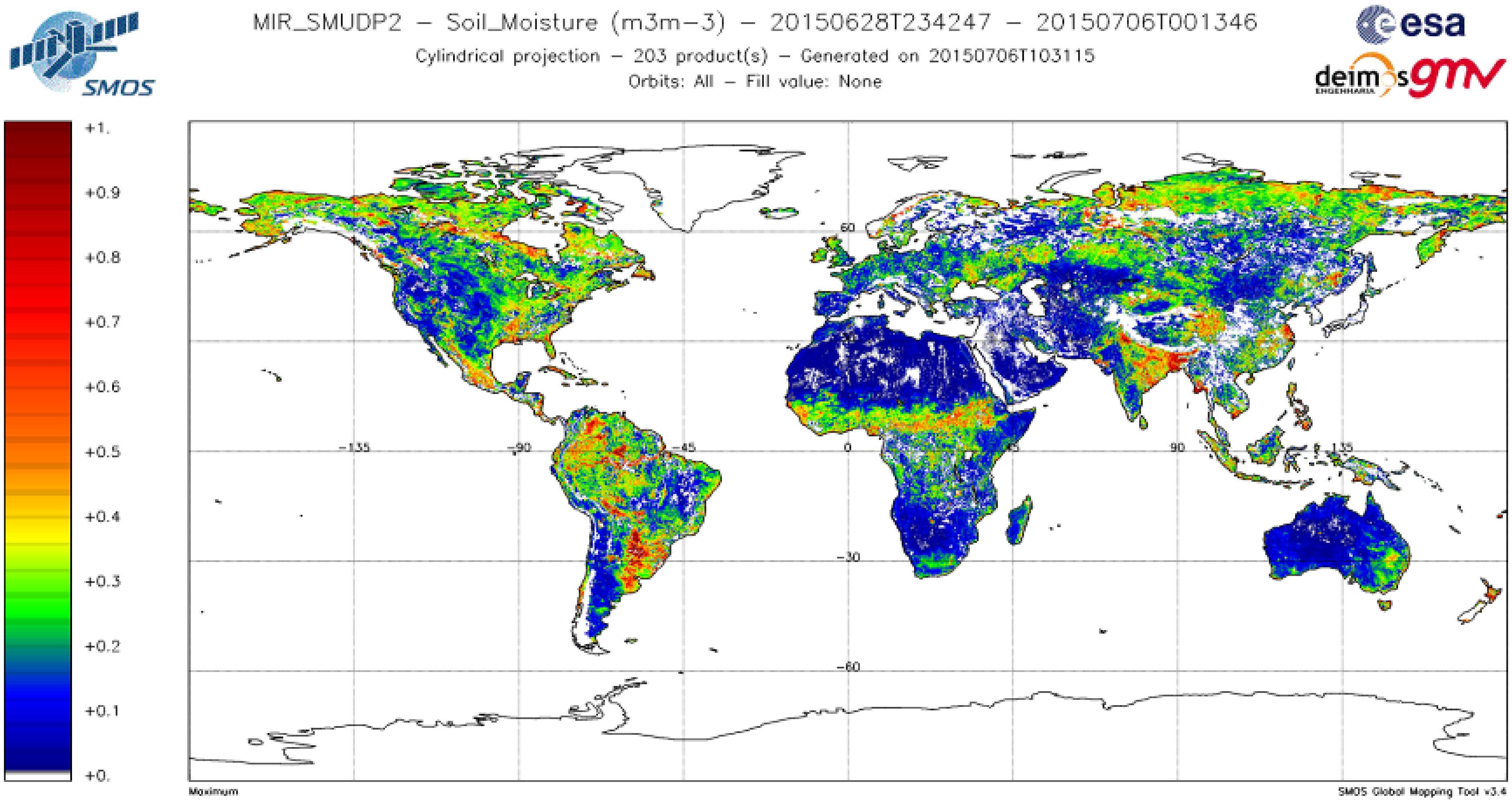
Figure 67 Soil moisture evolution during the reporting period (week 4)



© 2015

Figure 67 Soil moisture evolution during the reporting period (week 5)



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7. ADF CONFIGURATION AT THE END OF THE REPORTING PERIOD

ADF File Type	Operational ADF Version (DPGS Baseline)	Updated
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AUX_APDNRT	SM_OPER_AUX_APDNRT_20050101T000000_20500101T000000_207_001_6.EEF	No
AUX_APDS__	SM_OPER_AUX_APDS___20050101T000000_20500101T000000_300_004_3.EEF	No
AUX_ATMOS_	SM_OPER_AUX_ATMOS__20050101T000000_20500101T000000_001_010_3.EEF	No
AUX_BFP___	SM_OPER_AUX_BFP____20050101T000000_20500101T000000_340_004_3.EEF	No
AUX_BNDLST	SM_OPER_AUX_BNDLST_20050101T000000_20500101T000000_300_001_3	No
AUX_BSCAT_	SM_OPER_AUX_BSCAT__20050101T000000_20500101T000000_300_003_3	No
AUX_BULL_B	SM_OPER_AUX_BULL_B_20150402T000000_20500101T000000_120_002_3	Yes
AUX_BWGHT_	SM_OPER_AUX_BWGHT__20050101T000000_20500101T000000_340_006_3.EEF	No
AUX_CNFFAR	SM_OPER_AUX_CNFFAR_20050101T000000_20500101T000000_100_002_3.EEF	No
AUX_CNFL0P	SM_OPER_AUX_CNFL0P_20050101T000000_20500101T000000_001_005_3.EEF	No
AUX_CNFL1P	SM_OPER_AUX_CNFL1P_20110206T010100_20500101T000000_620_051_3.EEF	No
AUX_CNFNRT	SM_OPER_AUX_CNFNRT_20050101T000000_20500101T000000_620_010_3.EEF	No
AUX_CNFOSD	SM_OPER_AUX_CNFOSD_20050101T000000_20500101T000000_001_024_3.EEF	No
AUX_CNFOSF	SM_OPER_AUX_CNFOSF_20050101T000000_20500101T000000_001_026_3.EEF	No
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AUX_DTBCUR	SM_OPER_AUX_DTBCUR__20120504T203936_20500101T000000_624_001_1Initialization file for the deployment of the L2OS V62x processor.	No
AUX_ECOLAI	SM_OPER_AUX_ECOLAI_20050101T000000_20500101T000000_305_006_3	No
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AUX_MOONT_	SM_OPER_AUX_MOONT__20050101T000000_20500101T000000_300_002_3	No

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AUX_NIR___	SM_OPER_AUX_NIR____20050101T000000_20500101T000000_500_010_3.EEF	No
AUX_NRTMSK	SM_OPER_AUX_NRTMSK_20050101T000000_20500101T000000_207_001_6	No
AUX_OTT1D_	SM_OPER_AUX_OTT1D__20120504T203936_20500101T000000_624_001_1 Initialization file for the deployment of the L2OS V62x processor. Since level 2 OS processor V62x the new file is generated on routine basis by the level 2 post processor	No
AUX_OTT1F_	SM_OPER_AUX_OTT1F__20120504T203936_20500101T000000_624_001_1 Initialization file for the deployment of the L2OS V62x processor. Since level 2 OS processor V62x the new file is generated on routine basis by the level 2 post processor	No
AUX_OTT2D_	SM_OPER_AUX_OTT2D__20120504T203936_20500101T000000_624_001_1 Initialization file for the deployment of the L2OS V62x processor. Since level 2 OS processor V62x the new file is generated on routine basis by the level 2 post processor	No
AUX_OTT2F_	SM_OPER_AUX_OTT2F__20120504T203936_20500101T000000_624_001_1 Initialization file for the deployment of the L2OS V62x processor. Since level 2 OS processor V62x the new file is generated on routine basis by the level 2 post processor	No
AUX_OTT3D_	SM_OPER_AUX_OTT3D__20120504T203936_20500101T000000_624_001_1 Initialization file for the deployment of the L2OS V62x processor. Since level 2 OS processor V62x the new file is generated on routine basis by the level 2 post processor	No
AUX_OTT3F_	SM_OPER_AUX_OTT3F__20120504T203936_20500101T000000_624_001_1 Initialization file for the deployment of the L2OS V62x processor. Since level 2 OS processor V62x the new file is generated on routine basis by the level 2 post processor	No
AUX_PATT__	SM_OPER_AUX_PATT___20050101T000000_20500101T000000_320_003_3	No
AUX_PLM___	SM_OPER_AUX_PLM____20050101T000000_20500101T000000_600_008_3.EEF	No
AUX_PMS___	SM_OPER_AUX_PMS____20050101T000000_20500101T000000_600_011_3.EEF	No
AUX_RFI___	SM_OPER_AUX_RFI____20050101T000000_20500101T000000_300_003_3	No
AUX_RFILST	Since level 1 processor version V62x the file is generated by CATDS on monthly basis	No
AUX_RGHNS1	SM_OPER_AUX_RGHNS1_20050101T000000_20500101T000000_001_015_3	No
AUX_RGHNS2	SM_OPER_AUX_RGHNS2_20050101T000000_20500101T000000_001_013_3	No
AUX_RGHNS3	SM_OPER_AUX_RGHNS3_20050101T000000_20500101T000000_001_015_3.EEF	No
AUX_SGLINT	SM_OPER_AUX_SGLINT_20050101T000000_20500101T000000_001_011_3	No
AUX_SOIL_P	File discontinued since level 2 SM processor V62x SM_OPER_AUX_SOIL_P_20050101T000000_20500101T000000_001_002_3	No
AUX_SPAR__	SM_OPER_AUX_SPAR___20110112T091500_20500101T000000_340_012_3.EEF SM_OPER_AUX_SPAR___20100111T120700_20110112T091500_340_011_3.EEF SM_OPER_AUX_SPAR___20050101T000000_20100111T120700_340_010_3.EEF	No
AUX_SSS___	SM_OPER_AUX_SSS____20050101T000000_20500101T000000_001_013_3	No
AUX_SUNT__	SM_OPER_AUX_SUNT___20050101T000000_20500101T000000_300_002_3	No
AUX_WEF___	SM_OPER_AUX_WEF____20050101T000000_20500101T000000_001_003_3	No
MPL_ORBSCT	SM_OPER_MPL_ORBSCT_20091102T031142_20500101T000000_360_001_1	No

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APPENDIX A. CONFIGURATION DOCUMENT LIST

The list of internal documents used for the generation of this report is:

- Unavailability.xls
- Details_Calibrations.xls
- SMOS-CEC-VEG-IPF-REP-0609_v1.75_SMOS_Auxiliary_Data_File_List.pdf

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