



Half-Yearly Operations Report

1st half 2026

Version : 1.0

Date : 11/09/2026

Prepared by Météo-France, Ifremer, MET Norway, DMI and KNMI



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Document Change record

Document version	Date	Author	Change description
1.0	11/09/2026	CH	First merge of all inputs

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1. Introduction

1.1. Scope of the document

The present report covers from January to June 2026.

The objective of this document is to provide EUMETSAT and users, in complement with the web site <http://osi-saf.eumetsat.int>, an overview on OSI SAF products availability and quality, main anomalies and events, product usage, users' feedback, and updated available documentation.

- Low and Mid latitude (LML) Centre, under Météo-France responsibility, processes and distributes the SST and Radiative Fluxes products covering LML, North Atlantic Regional (NAR) and Global areas. Ifremer contributes to the products distribution and archiving,
- High Latitude (HL) Centre, under MET Norway responsibility with the co-operation of DMI, processes and distributes the Global Sea Ice products, the High Latitude SST and the High Latitude Radiative Fluxes,
- Wind Centre, under KNMI responsibility, processes and distributes the Wind products.

1.2. Products characteristics

The characteristics of the current products are specified in the Service Specification (SeSp) Document [AD.1] available on <http://osi-saf.eumetsat.int>, the OSI SAF web site.

Three values are usually available for accuracy requirements, for each product:

- The threshold accuracy is the minimum acceptable
- The target (or breakthrough) accuracy is the desired performance level
- The optimal accuracy

In this report, the product performance is compared to the target accuracy. If the values do not meet the target accuracy but are compliant to the threshold accuracy, it is considered useful to distribute the product anyway.

According to OSI-SS-GEN-101 in SeSp [AD.1], operational OSI SAF products accuracy should be better than the value specified as threshold accuracy in the products tables when input satellite data are available with the nominal level of quality (on monthly basis).

1.3. Applicable documents

[AD.1] OSI SAF
Service Specification (SeSp)
SAF/OSI/CDOP3/MF/MGT/PL/003, version 2.08, 03/08/2026

1.4. Reference documents

[RD.1] ASCAT Wind Product User Manual
OSI-102, OSI-102-b, OSI-102-c, OSI-103 (discontinued), OSI-104, OSI-104-b, OSI-104-c
SAF/OSI/CDOP/KNMI/TEC/MA/126

- [RD.2] ScatSat-1 wind Product User Manual
OSI-112-a, OSI-112-b (discontinued)
SAF/OSI/CDOP2/KNMI/TEC/MA/287

- [RD.3] Product User Manual (PUM) for the HY-2 winds
OSI-114-a, OSI-114-b, OSI-115-a, OSI-115-b, OSI-116-a, OSI-116-b
SAF/OSI/CDOP3/KNMI/TEC/MA/392

- [RD.4] ASCAT L2 winds Data Record Product User Manual
OSI-150-a, OSI-150-b
SAF/OSI/CDOP2/KNMI/TEC/MA/238

- [RD.5] Product User Manual (PUM) for the Ku-band wind data records
SeaWinds, Oceansat-2, RapidScat (ISS)
OSI-151-c, OSI-151-d, OSI-153-c, OSI-153-d, OSI-159-a, OSI-159-b
SAF/OSI/CDOP3/KNMI/TEC/MA/414

- [RD.6] ERS L2 winds Data Record Product User Manual
OSI-152
SAF/OSI/CDOP2/KNMI/TEC/MA/279

- [RD.7] Low Earth Orbiter Sea Surface Temperature Product User Manual
OSI-201-b, OSI-202-c, OSI-204-b, OSI-204-c, OSI-208-b
SAF/OSI/CDOP3/MF/TEC/MA/127

- [RD.8] Northern High Latitude L3 Sea and Sea Ice Surface Temperature Product User Manual
OSI-203-a, OSI-203-b
SAF/OSI/CDOP3/met.no/TEC/MA/115

- [RD.9] High Latitudes L2 Sea and Sea Ice Surface Temperature Product User Manual
OSI-205-a, OSI-205-b
SAF/OSI/CDOP3/DMI/TEC/MA/246

- [RD.10] Geostationary Sea Surface Temperature Product User Manual
OSI-206-a, OSI-206-b, OSI-207-c, OSI-IO-SST
SAF/OSI/CDOP3/MF/TEC/MA/181

- [RD.11] MSG/SEVIRI Sea Surface Temperature data record Product User Manual
OSI-250
SAF/OSI/CDOP3/MF/TEC/MA/309

- [RD.12] Product User Manual for Atlantic High Latitudes level 3 Radiative Flux products
OSI-301-c, OSI-302-c
SAF/OSI/CDOP3/MET-Norway/TEC/MA/373

- [RD.13] Geostationary Radiative Flux Product User Manual
OSI-303-a, OSI-304-a, OSI-305-b, OSI-306-b, OSI-IO-DLI, OSI-IO-SSI
SAF/OSI/CDOP3/MF/TEC/MA/182

- [RD.14] Product User Manual for Global Sea Ice Concentration Level 2 and Level 3
OSI-410-a, OSI-401-d, OSI-408-a
OSISAF/DMI/PUM/421

- [RD.15] Global Sea Ice Edge and Type Product User's Manual
OSI-402-d, OSI-403-d
SAF/OSI/CDOP2/MET-Norway/TEC/MA/205
- [RD.16] 50 Ghz Sea Ice Emissivity Product User Manual
OSI-404-b
SAF/OSI/CDOP3/DMI/TEC/MA/191
- [RD.17] Low Resolution Sea Ice Drift Product User's Manual
OSI-405-d
SAF/OSI/CDOP/met.no/TEC/MA/128
- [RD.19] Product User Manual for the Sea Ice Index, version 3.0
OSI SAF SII (OSI-420-a)
OSISAF/MET-Norway/PUM/387
- [RD.20] Global Sea Ice Concentration Climate Data Records Product User Manual
OSI-450-a1, OSI-430-a, OSI-458
SAF/OSI/CDOP3/MET/TEC/MA/288
- [RD.21] Product User's Manual for the Global Sea Ice Drift Climate Data Record v1
OSI-455
SAF/OSI/CDOP3/MET/TEC/MA/418
- [RD.22] Scientific Validation Report (SVR) for the HSCAT/OSCAT winds
OSI-114-c/d, OSI-115-c/d, OSI-116-c/d, OSI-113-a/b
SAF/OSI/CDOP4/KNMI/TEC/RP/434

1.5. Definitions, acronyms and abbreviations

AHL	Atlantic High Latitude
ASCAT	Advanced SCATterometer
AVHRR	Advanced Very High Resolution Radiometer
BUFR	Binary Universal Format Representation
CDOP	Continuous Development and Operations Phase
CMEMS	Copernicus Marine Environment Monitoring Service
CMS	Centre de Météorologie Spatiale (Météo-France)
DLI	Downward Long wave Irradiance
DMI	Danish Meteorological Institute
DMSP	Defense Meteorological Satellite Program
ECMWF	European Centre for Medium range Weather Forecasts
EDC	EUMETSAT Data Centre
EPS	European Polar System
FTP	File Transfer Protocol
GBL	Global oceans
GOES	Geostationary Operational Environmental Satellite
GOES-E	GOES-East, nominal GOES at 75°W
GRIB	GRIdded Binary format

GTS	Global Transmission System
HIRLAM	High Resolution Limited Area Model
HL	High Latitude
HRIT	High Rate Information Transmission
Ifremer	Institut Français de Recherche pour l'Exploitation de la MER
KNMI	Koninklijk Nederlands Meteorologisch Instituut
LEO	Low Earth Orbiter
LML	Low and Mid Latitude
MAP	Merged Atlantic Product
MET	Nominal Meteosat at 0° longitude
MET Norway or MET	Norwegian Meteorological Institute
Metop	METeorological OPerational Satellite
MF	Météo-France
MGR	Meta-GRanule
MSG	Meteosat Second Generation
NAR	Northern Atlantic and Regional
NESDIS	National Environmental Satellite, Data and Information Service
NetCDF	Network Common Data Form
NMS	National Meteorological Service
NOAA	National Oceanic and Atmospheric Administration
NPP	NPOESS Preparatory Project
NPOESS	National Polar-orbiting Operational Environmental Satellite System
NRT	Near Real-Time
NWP	Numerical Weather Prediction
NIC	National Ice Center (USA)
OSI SAF	Ocean and Sea Ice SAF
R&D	Research and Development
RMDCN	Regional Meteorological Data Communication Network
RMS	Root-Mean-Squared
RSD	Robust Standard Deviation
SAF	Satellite Application Facility
SD	Standard Deviation
SEVIRI	Spinning Enhanced Visible and Infra-Red Imager
SSI	Surface Short wave Irradiance
SSM/I	Special Sensor Microwave Imager
SSMIS	Special Sensor Microwave Imager and Sounder
SST/IST	Sea Surface Temperature/ sea Ice Surface Temperature
SST	Sea Surface Temperature
TBC	To Be Confirmed
TBD	To Be Defined
WMO	World Meteorological Organisation

2. OSI SAF products availability and timeliness

As indicated in the Service Specification Document [AD-1], operational OSI SAF products are expected to be available for distribution within the specified time in more than **95%** of the cases where input satellite data are available with the nominal level of quality, on monthly basis.

Section 2.1 shows the measured availability on the OSI SAF FTP servers.

Section 2.2 shows the measured availability via EUMETCast.

The dissemination of the OSI SAF products via EUMETCast implies an additional step, not under the strict OSI SAF responsibility, but general EUMETSAT's one.

The measured availability of the Global **Sea Ice concentration (resp. edge, type)** products corresponds to the situation when a product file is provided within 5 hours, whatever if there are input data or not. The sea ice type is the last product being produced, therefore the most likely to be outside this 5 hour spec.

Please find in section 3 comments on the tables included in section 2.1 and 2.2.

2.1. Availability on FTP servers

Ref.	Product	JAN. 2026	FEB. 2026	MAR. 2026	APR. 2026	MAY 2026	JUN. 2026
OSI-102-b	ASCAT-B 25 km wind	100	100	100	100	100	100
OSI-102-c	ASCAT-C 25 km wind	100	100	100	99.9	100	100
OSI-104-b	ASCAT-B Coastal wind	100	100	100	100	100	100
OSI-104-c	ASCAT-C Coastal wind	100	100	100	99.5	99.6	100
OSI-114-a	HY-2B 25 km wind vectors	89.7	89.9	87.5	96.7	99.1	98.5
OSI-114-b	HY-2B 50 km wind vectors	90.0	89.9	87.5	96.7	99.1	98.5
OSI-115-a	HY-2C 25 km wind vectors	94.3	94.2	97.4	97.6	99.7	99.3
OSI-115-b	HY-2C 50 km wind vectors	94.3	94.2	97.2	97.6	99.7	99.3
OSI-116-a	HY-2D 25 km wind vectors	N/A	N/A	N/A	N/A	N/A	N/A
OSI-116-b	HY-2D 50 km wind vectors	N/A	N/A	N/A	N/A	N/A	N/A
OSI-113-a	Oceansat-3 25 km winds	97.9	96.3	99.5	99.1	97.5	97.5
OSI-113-b	Oceansat-3 50 km winds	97.9	96.3	99.5	99.1	97.4	97.5
OSI-201-b	GBL SST	100	96.4	95.2	100	79.0	91.7
OSI-202-c	NAR SST	100	97.3	96.0	100	79.8	94.2
OSI-203-a	NHL SST/IST (L3)	100	100	100	100	100	100
OSI-203-b	NHL SST/IST (L3)	96.7	100	79.0	91.7	93.5	88.3
OSI-204-b	MGR SST (Metop-B)	100	95.5	95.1	100	78.1	93.6
OSI-204-c	MGR SST (Metop-C)	100	97.5	93.1	98.5	78.3	93.4
OSI-205-a	SST/IST (L2)	100	100	100	100	100	100
OSI-205-b	SST/IST (L2)	100	100	79.8	90.3	92.8	87.3
OSI-206-a	Meteosat 0° SST (MSG)	100	97.8	94.6	100	77.0	93.1
OSI-206-b	Meteosat 0° SST (MTG)	100	97.5	93.2	100	78.4	92.9
OSI-207-c	GOES-East SST	100	97.8	94.9	100	78.0	93.1
OSI-IO-SST	Meteosat Indian Ocean SST	99.7	97.8	94.6	93.5	78.2	93.1
OSI-208-b	IASI SST	99.6	97.7	94.6	100	78.1	93.4
OSI-301-c OSI-302-c	AHL DLI + SSI	100	100	100	100	100	100
OSI-303-a	Meteosat DLI - hourly	100	97.9	94.8	92.1	78.6	93.2
	Meteosat DLI - daily	100	96.4	93.5	93.1	77.4	93.3
OSI-304-a	Meteosat SSI - hourly	100	97.9	94.8	92.1	78.6	93.2
	Meteosat SSI - daily	100	96.4	93.5	93.1	77.4	93.3
OSI-401-d	Global Sea Ice Concentration (SSMIS)	100	100	85.2	100	100	100
OSI-402-d	Global Sea Ice Edge	100	100	100	100	96.8	100
OSI-403-d	Global Sea Ice Type	100	100	100	100	96.8	100
OSI-404-b	Global Sea Ice Emissivity	100	100	91.3	100	100	100
OSI-405-d	Low Res. Sea Ice Drift	100	100	100	96.7	96.8	100
OSI-408-a	Global Sea Ice Concentration (AMSR2)	100	100	100	100	100	100
OSI-410-a	Level 2 PMW sea ice concentration	99.2	97.8	71.6	71.6	73.3	71.4
OSI-438	Global Reproc Sea Ice Conc Updates	100	96.4	100	96.7	100	100

Table 1: Percentage of OSI SAF products available on the OSI SAF FTP servers within the specified time over 1st half 2026.

2.2. Availability via EUMETCast

Ref.	Product	JAN. 2026	FEB. 2026	MAR. 2026	APR. 2026	MAY 2026	JUN. 2026
OSI-102-b	ASCAT-B 25 km wind	99.9	99.9	100	100	100	99.8
OSI-102-c	ASCAT-C 25 km wind	99.9	99.9	100	100	100	99.8
OSI-104-b	ASCAT-B Coastal wind	99.9	99.9	100	99.9	99.9	99.8
OSI-104-c	ASCAT-C Coastal wind	99.9	100	100	99.5	99.6	99.9
OSI-114-a	HY-2B 25 km wind vectors	88.6	88.7	87.5	96.7	99.1	98.5
OSI-114-b	HY-2B 50 km wind vectors	88.9	88.7	87.5	96.7	99.1	98.5
OSI-115-a	HY-2C 25 km wind vectors	94.3	92.5	97.2	97.6	99.7	99.3
OSI-115-b	HY-2C 50 km wind vectors	94.3	92.5	97.2	97.6	99.7	99.0
OSI-116-a	HY-2D 25 km wind vectors	N/A	N/A	N/A	N/A	N/A	N/A
OSI-116-b	HY-2D 50 km wind vectors	N/A	N/A	N/A	N/A	N/A	N/A
OSI-113-a	Oceansat-3 25 km winds	97.5	95.2	99.3	99.1	97.5	97.3
OSI-113-b	Oceansat-3 50 km winds	97.4	95.3	99.3	99.1	97.3	97.3
OSI-201-b	GBL SST	100	100	100	100	100	98.3
OSI-202-c	NAR SST	100	98.2	100	100	100	100
OSI-203-a	NHL SST/IST (L3)	100	100	100	100	96.8	100
OSI-203-b	NHL SST/IST (L3)	96.8	100	79.0	91.7	88.7	88.3
OSI-204-b	MGR SST (Metop-B)	100	97.1	100	99.9	100	99.9
OSI-204-c	MGR SST (Metop-C)	Not distributed on EUMETCast					
OSI-205-a	SST/IST (L2)	100	100	100	100	100	100
OSI-205-b	SST/IST (L2)	99.8	99.8	79.8	90.3	92.8	87.3
OSI-206-a	Meteosat 0° SST (MSG)	100	100	100	100	100	99.9
OSI-206-b	Meteosat 0° SST (MTG)	100	99.7	99.3	99.7	99.7	99.7
OSI-207-c	GOES-East SST	100	99.9	99.7	100	100	99.9
OSI-208-b	IASI SST	99.6	99.9	100	100	100	99.8
OSI-301-c OSI-302-c	AHL DLI + SSI	100	100	100	100	96.8	100
OSI-303-a	Meteosat DLI - hourly	100	100	100	98.7	100	99.7
	Meteosat DLI - daily	100	100	100	100	100	100
OSI-304-a	Meteosat SSI - hourly	100	100	100	98.7	100	99.7
	Meteosat SSI - daily	100	100	100	100	100	100
OSI-401-d	Global Sea Ice Concentration (SSMIS)	100	100	85.2	100	100	100
OSI-402-d	Global Sea Ice Edge	100	100	100	100	96.8	100
OSI-403-d	Global Sea Ice Type	100	100	100	100	96.8	100
OSI-404-b	Global Sea Ice Emissivity	100	100	91.3	100	100	100
OSI-405-d	Low Res. Sea Ice Drift	100	100	100	96.7	96.8	100
OSI-408-a	Global Sea Ice Concentration (AMSR2)	100	100	100	100	100	100
OSI-410-a	Level 2 PMW sea ice concentration	99.2	97.8	71.6	71.6	73.3	71.4

Table 2: Percentage of OSI SAF products delivered via EUMETCast within the specified time over 1st half 2026.

Comment:

Unfortunately, outages and delays sometimes occur in the provision of HY-2B/C/D input data by the Chinese National Satellite Ocean Application Service (NSOAS). This leads to reduced availabilities of the OSI-114, OSI-115, and OSI-116 wind products.

3. Main anomalies, corrective and preventive measures

In case of anomaly (outage, degraded products...), service messages are made available in near-real time to the registered users through the Web site <http://osi-saf.eumetsat.int>.

3.1. At Wind subsystem (KNMI)

Date	Impacted products or services	Anomaly	Corrective and preventive measures
3-11-2024	OSI-116	The HY-2D winds are unavailable since 3 November 2024 due to a satellite anomaly. <i>As a result of this, neither timeliness/usage statistics nor quality information for HY-2D are available for December 2024 onwards. The HY-2D products now have the status 'suspended'</i>	Users have been informed
3-1	OSI-114	The HY-2B products did not contain any wind data between 2 January 11:00 and 3 January 9:00 UTC sensing time due to an instrument anomaly.	Users have been informed
12-1	OSI-114	The HY-2B wind speeds have been too high between 3 and 12 January by approximately 0.1 m/s, due to a change in the instrument hardware configuration. This was compensated on 12 January. PenWP version is 4_0_08.	Users have been informed
21-1	OSI-114	The HY-2B winds have been unavailable or delayed between 16 and 21 January due to a ground segment anomaly.	Users have been informed
11-2	OSI-114, OSI-115	The HY-2B and HY-2C winds have been unavailable or delayed between 8 and 11 February due to a ground segment anomaly.	Users have been informed
3-4	OSI-114, OSI-115	The HY-2B and HY-2C winds have been unavailable or delayed between 29 March and 3 April due to a ground segment anomaly.	Users have been informed
14-4	OSI-113	The Oceansat-3 winds have been unavailable on 13 and 14 April due to spacecraft maintenance.	Users have been informed
20-4	OSI-104-b	The ASCAT-B 12.5 km winds have been unavailable on 20 April between 8:00 and 12:30 UTC sensing time due to a ground segment anomaly.	Users have been informed

3.2. At Low and Mid-Latitudes subsystem (Météo-France and Ifremer)

Date	Impacted products or services	Anomaly	Corrective and preventive measures
24 Feb	SST-Metop OSI-201-202-204	Product interruption due to a corrupt file	Users were informed and file deleted
10-12 Mar	All data	Outage ftp Ifremer	Users were informed
25 Mar	OSI-206-b	Degraded due to sun specular reflection	Fix in IMPF 1.8
26 Mar	OSI-206-b	Product interruption due to a empty file	File deleted
04 Apr	OSI-201-b	Missing on EUMETCast	
24 Apr	SST-DLI-SSI	Outage Meteosat-10 Nil 0900UTC	Switch on Meteosat-11
28 Apr	SST-DLI-SSI	Switch on Meteosat-10 Nil 0900UTC	Users were informed
05-11 May	All data	Upgrade Ifremer infrastructure	Users were informed
06-11 Jun	All data	Some outage Ifremer	Users were informed

3.3. At High Latitudes subsystem (MET Norway and DMI)

Date	Impacted products or services	Anomaly	Corrective and preventive measures
All the period	OSI-410-a, OSI-401-d, OSI-404-b	The provision of SSMIS is generally unstable from the providers side. This is reflected in the low percentage of products delivered within timeliness.	Users has been made aware that products based on SSMIS is delivered on a best effort basis.
09-16 March	OSI-205-b and OSI-203-b	Products were missing due to missing NPP data from NOAA.	Users were informed
28 April-01 May	OSI-205-b and OSI-203-b	Products were missing due to missing NPP data from NOAA.	Users were informed
27-April	OS-408-a, OSI-410-a, OSI-401-d, OSI-404-b	No products were delivered from 24 to 27 April due to an internal error at DMI.	Users were informed. The error was corrected and actions were to made to prevent a similar incident at another time.
9-11 May	OSI-205-b and OSI-203-b	Production failed due to internal problem with the cloud mask product.	Missing products were reprocessed
1-4 June	OSI-205-b and OSI-203-b	Products were missing due to missing NPP data from NOAA.	Users were informed

4. Main events and modifications, maintenance activities

In case of event or modification, corresponding service messages are made available in near-real time to the registered users through the Web site <http://osi-saf.eumetsat.int>.

4.1. At Wind subsystem (KNMI)

Date	Impacted products or services	Events and modifications, maintenance activities
18-6	OSI-102-b, OSI-104-b	Update of the ASCAT-B level 1b calibrations, to correct small across-swath calibration variations that have been present in the data since July 2024.

4.2. At Low and Mid-Latitudes subsystem (Météo-France and Ifremer)

Date	Impacted products or services	Events and modifications, maintenance activities
01 July	Geostationary satellite	New climatology used. See https://osi-saf.eumetsat.int/community/list-of-service-messages/new-climatology-used-geostationary-satellite-sst-processing

4.3. At High Latitudes subsystem (MET Norway and DMI)

Date	Impacted products or services	Events and modifications, maintenance activities
4 May	OSI-438	Operational release of OSI-438 (demonstrational product until this date). Now included in the FTP available table and Download statistics.
4 May	OSI-420-a	Operational release of the OSI-420-a (available as demonstrational product until this date). Now available in Download statistics.

4.4. Release of software and new data records & ICDR

NA

5. OSI SAF products quality

5.1. Global Wind quality

This section reports on the quality assessment of all OSI SAF operational NRT wind products:

- OSI-102-b [Metop-B ASCAT 25 km Winds](#)
- OSI-102-c [Metop-C ASCAT 25 km Winds](#)
- OSI-104-b [Metop-B ASCAT coastal Winds](#)
- OSI-104-c [Metop-C ASCAT coastal Winds](#)
- OSI-113-a [Oceansat-3 25 km wind vectors](#)
- OSI-113-b [Oceansat-3 50 km wind vectors](#)
- OSI-114-c [HY-2B 25 km wind vectors](#)
- OSI-114-d [HY-2B 50 km wind vectors](#)
- OSI-115-c [HY-2C 25 km wind vectors](#)
- OSI-115-d [HY-2C 50 km wind vectors](#)
- OSI-116-c [HY-2D 25 km wind vectors](#)
- OSI-116-d [HY-2D 50 km wind vectors](#)

The wind products are required to have an accuracy of better than 2.0 m/s in wind component standard deviation with a mean difference of less than 0.5 m/s in wind speed.

The scatterometer winds are monitored against forecast winds of the ECMWF global model. Forecasts of +3 to +15 hours are used and the model winds are interpolated with respect to time and location. The monitoring of relevant quality parameters as a function of time yields a sensitive method of detecting deviations of normal operation. However, one must be careful to regard the difference with reference background NWP model winds as the 'true' accuracy of the product, since both the NWP model winds and the scatterometer winds contain errors. Deviations in product quality usually appear as a step in one or more of the plots. See section 5.4.1 for the monthly averages.

The scatterometer winds are also compared to in situ equivalent neutral wind data from moored buoys, monthly averages are shown in section 5.1.2.

Seasonal weather variations imply differences in mean atmospheric stability, differences in dynamics, and differences in the distribution of wind speeds. These differences cause variations in the spatial representativeness errors associated with scatterometer wind quality assessment and in the difference statistics. Such effects cause seasonal oscillations that appear mainly in the wind speed mean differences plots against both model winds and buoy winds. For more background information we refer to: Hans Hersbach (2010) *Comparison of C-band scatterometer CMOD5.N equivalent neutral winds with ECMWF*, J. Atmos. Oceanic Technol., 27, 721–736.

We have studied the scatterometer wind speed mean differences against buoy winds for the tropics and the Northern Hemisphere mid latitudes separately. It appears that the mean differences in the tropics are fairly constant throughout the year, whereas the wind speed mean differences in the NH are higher in the winter than in the summer. Hence the seasonal cycles are mainly caused by weather variations in the mid latitudes.

5.1.1. Comparison with ECMWF model wind data

The figures below show the monthly results of July 2024 to June 2026.

It is clear from the plots in this section, that the products do meet the accuracy requirements from the Service Specification Document [AD-1] (mean difference less than 0.5 m/s and wind component standard deviation accuracy better than 2 m/s) in most cases when they are compared to ECMWF model winds. Note that local smaller scale wind variations, which are resolved by the scatterometer but not by the model, contribute to the standard deviations. The scatterometer errors are therefore smaller than what is shown in the plots as we know from triple collocation analysis. The plots in this section contain errors both from the model winds and from the scatterometer winds. triple collocation is a way to compute the scatterometer errors independently. In the product scientific validation reports we provide triple collocation analyses, see e.g. [RD.22], section 4 (Table 3). There the error in the wind components is less than 0.8 m/s.

The OSI SAF winds are routinely compared to Met Office NWP model data in the NWP SAF project. Monthly statistics of the products are available as e.g. 2D histograms and map plots, see <https://nwp-saf.eumetsat.int/site/monitoring/winds-quality-evaluation/scatterometer-mon/>.

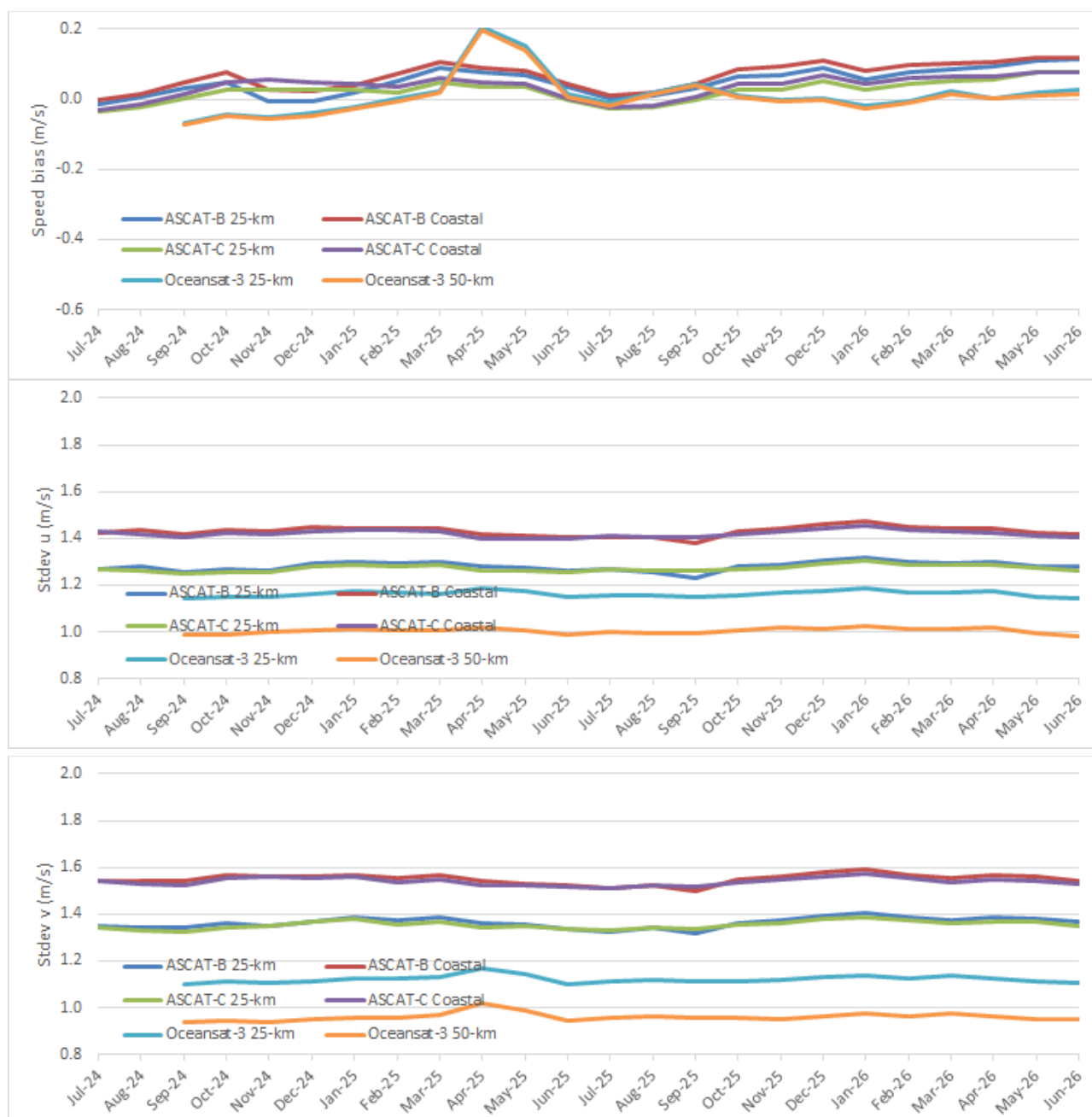


Figure 1: Comparison of ASCAT and Oceansat-3 scatterometer winds against ECMWF NWP forecast winds (monthly averages). For each product, the wind speed mean difference (scatterometer minus ECMWF, top), wind u component standard deviation (middle) and wind v component standard deviation (bottom) are shown.

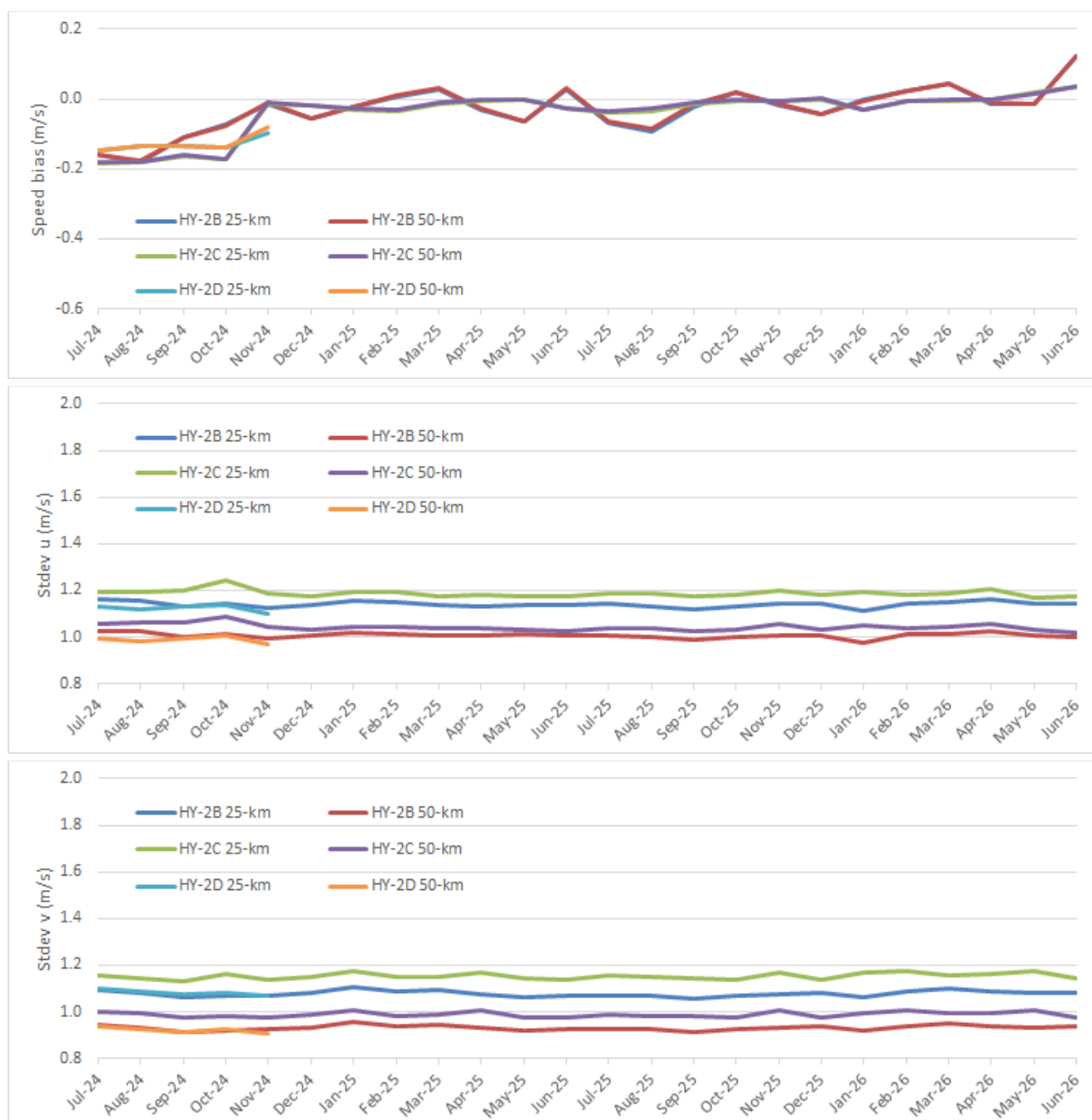


Figure 2: Comparison of HY-2B, HY-2C and HY-2D scatterometer winds against ECMWF NWP forecast winds (monthly averages). For each product, the wind speed mean difference (scatterometer minus ECMWF, top), wind u component standard deviation (middle) and wind v component standard deviation (bottom) are shown.

5.1.2. Comparison with buoys

We compare the scatterometer winds with wind data from moored buoys on a monthly basis. The buoy data of approximately 150 buoys spread over the oceans (most of them in the tropical oceans and near Europe and North America) are retrieved from the ECMWF MARS archive and collocated with scatterometer winds. The buoy winds are converted to 10-m neutral winds using the LKB model, see Liu, W.T., K.B. Katsaros, and J.A. Businger, *Bulk parameterization of air-sea exchanges of heat and water vapor including the molecular constraints in the interface*, J. Atmos. Sci., vol. 36, 1979.

The figure below shows the monthly results of July 2024 to June 2026.

Note that the statistics as shown for the different ASCAT products are not from a common set of buoy measurements. So the number of scat/buoy collocations differs per product, in some cases we do have an ASCAT coastal wind but no 12.5 km or 25 km wind due to (small) differences in quality control. Also the number of available buoys changes over time as is shown in the bottom plot. This sampling issue gives rise to different mean difference and standard deviation scores in the plots below.

It is clear from the plots in this section, that the products do meet the accuracy requirements from the Service Specification Document [AD-1] (mean difference less than 0.5 m/s and wind component standard deviation accuracy better than 2 m/s) when they are compared to buoy winds.

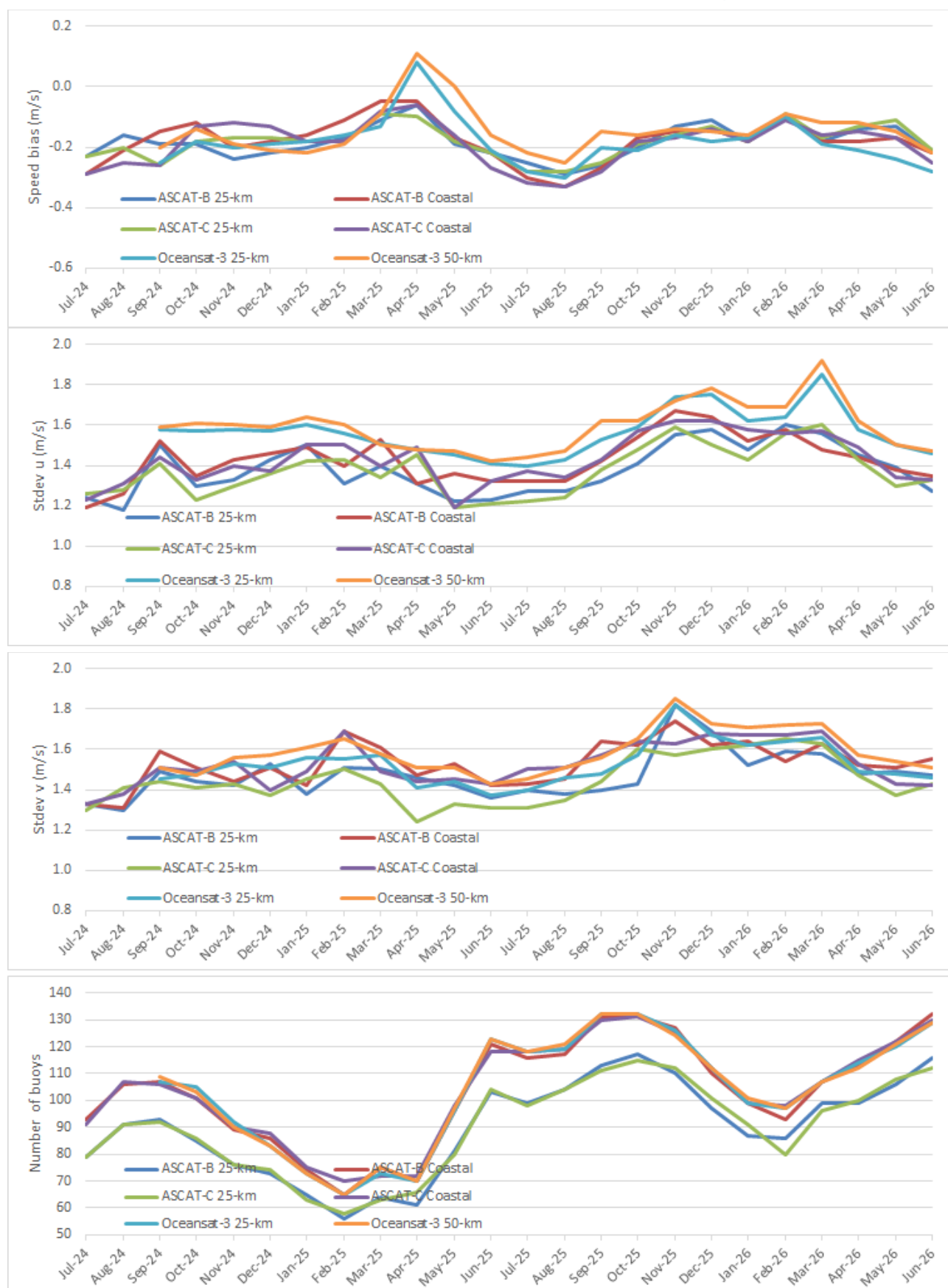


Figure 3: Comparison of ASCAT and Oceansat-3 scatterometer winds against buoy winds (monthly averages). For each product, the wind speed mean difference (scatterometer minus buoy, top), wind u component standard deviation (2nd plot) and wind v component standard deviation (3rd plot) are shown. Also the number of buoys available for the comparisons is shown (bottom).

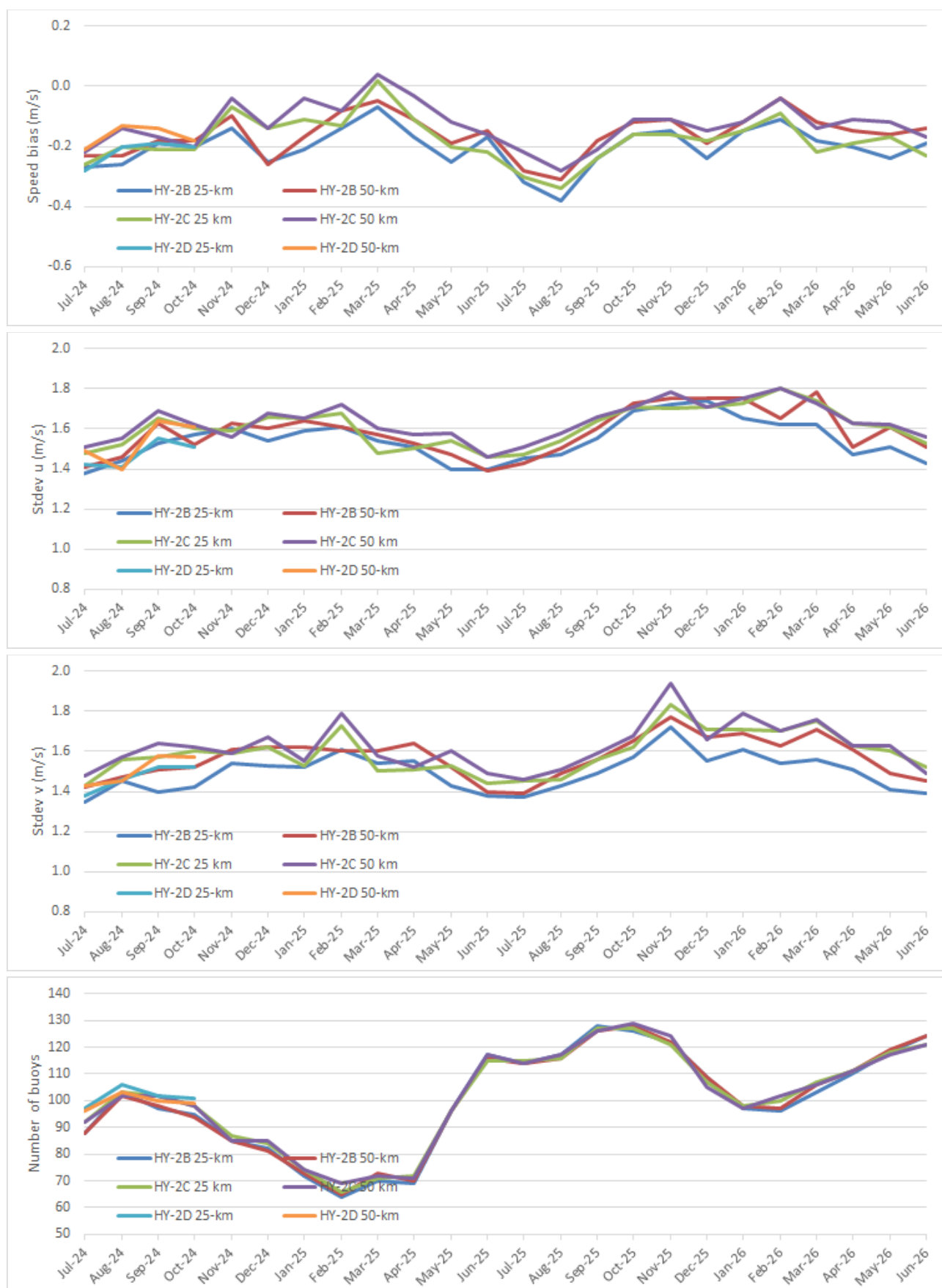


Figure 4: Comparison of HY-2B, HY-2C and HY-2D scatterometer winds against buoy winds (monthly averages). For each product, the wind speed mean difference (scatterometer minus buoy, top), wind u component standard deviation (2nd plot) and wind v component standard deviation (3rd plot) are shown. Also the number of buoys available for the comparisons is shown (bottom).

5.2. Sea Surface Temperature quality

The comparison between SST products and Match up data bases (MDB) gathering in situ (buoy) measurements is performed on a routine basis for each satellite.

SST values are required to have the following target accuracy when compared to night time and daytime buoy measurements (see Service Specification Document [AD-1]):

	Monthly mean difference (mean difference req. in following tables) in the following ranges	Monthly standard deviation (SD req. in following tables) less than
Global low earth orbit products (GBL, NAR, MGR and IASI SST)	± 0.5 K	0.8 K
High latitudes low earth orbit products (SST in HL SST/IST products)	± 0.7 K	1.0 K
Geostationary products (Meteosat and GOES-East SST)	± 0.5 K	1.0 K

According to GHRSSST-PP project, for IR derived products, the normalized Proximity Confidence Value scale shows 6 values: 0: unprocessed, 1: cloudy, 2: bad, 3: suspect, 4: acceptable, 5: excellent. A quality level is provided at pixel level. Those values are good predictors of the errors. It is recommended not to use the confidence value 2 for quantitative use. Usable data are those with confidence values 3, 4 and 5.

In the following maps, there are at least 5 matchups (satellite and in situ measurements) per box. Sometimes there are not enough collocation due to the lack of input data or because of the cloud cover. Monthly maps of number of matchups in each box are available on the web site.

The number of cases might not be consistent in monthly and half-yearly statistics. There are two reasons responsible for this:

- the monthly statistics are run using the drifting buoy blacklist available for that month, whereas the map is produced at the end of the 6 month period using a more up to date black list.
- The blacklist is periodically update and therefore small differences are expected in the number of points - to produce a map we set up a threshold to the minimum number of records necessary for each 5x5° box.

Robust statistics

In the following, for the LML SST products (OSI-206-a, OSI-206-b, OSI-207-c, OSI-IO-SST, OSI-202-c, OSI-201-b, OSI-204-b, OSI-204-c), robust statistics (median and Robust Standard Deviation) are computed. The RSD is defined by Merchant and Harris (1999) :

$$RSD = \frac{75^{th} \text{ percentile of } \Delta SST - 25^{th} \text{ percentile of } \Delta SST}{1,348} \quad \text{with} \quad \Delta SST = SST_{sat} - SST_{insitu}$$

Median and RSD are a little more stable than the mean and SD, and the RSD is lower than the SD (this is valid for a Gaussian or nearly Gaussian distribution).

Please note that the following figures show the map of median SST and the following tables show mean, SD, median and RSD.

For the validation of the Ice Surface Temperature (IST), which is a part of the SST/IST High Latitude products, there are some significant limitations. The only conventional in situ observations are drifting buoys that are placed on the sea ice and automatic weather stations on the Northern Hemisphere. These stations only observe air temperature or the temperature of the snow when they are covered by snow. So they do not directly measure the skin surface temperature that the satellite products estimate. A proper validation is therefore not possible on a routine basis. Still, comparison results are presented in this report, but the results must be read with this in mind. Occasionally, some in situ skin temperature data are available, and will be reported here. No in situ data are available for the Southern hemisphere and hence the IST for SH cannot be validated.

5.2.1. Meteosat Second Generation SST (OSI-206-a) quality

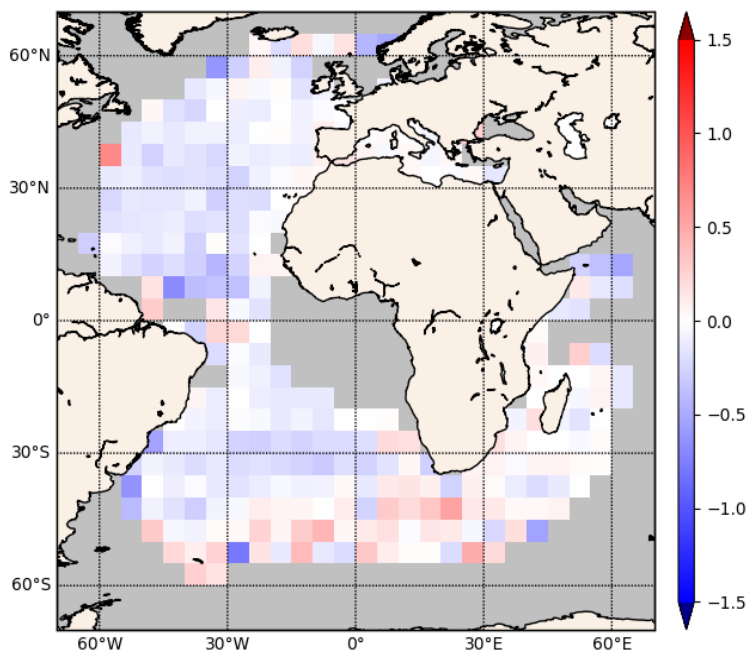
The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period. Monthly maps are available on <https://osi-saf.eumetsat.int/low-and-mid-latitudes-processing-center/charts-display?product=SST>.

The operational SST retrieval from Meteosat and GOES-East updated chain validation report v1.1 (<https://osi-saf.eumetsat.int/documentation-lmi>) gives further details about the regional bias observed.

Figure 5: Meteosat night-time SST median difference with respect to buoys measurements for quality level 3,4,5

METEOSAT10 SST_{sat} - SST_{insitu} median 2026-01-01 0002 2026-06-30 2349 zso 110-180

median -0.12 RSD 0.42 99043 cases

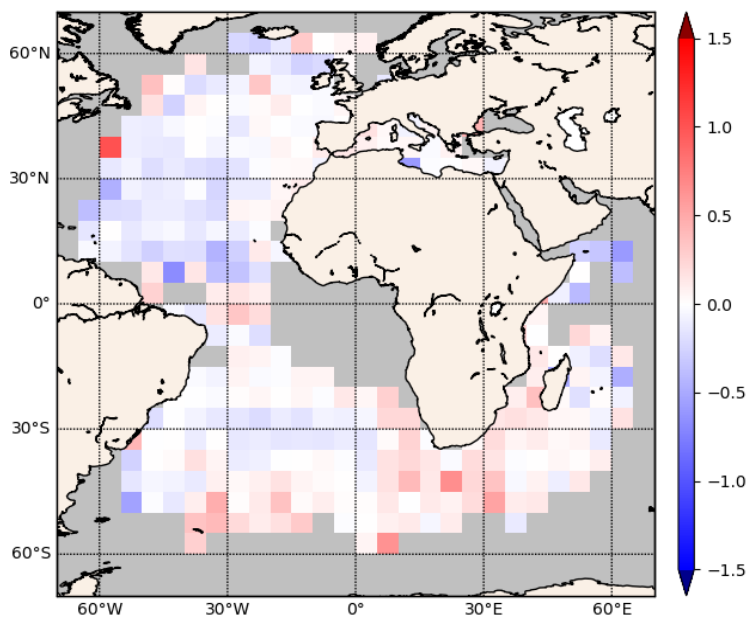


ql 3-5 |T_{sat}-T_{insitu}|<30min |SST_{insitu}-SST_{cl}|<5K blacklist_20251222_20260630.txt 5<=N_{box}

Figure 6: Meteosat day-time SST median difference with respect to buoys measurements for quality level 3,4,5

METEOSAT10 SST_{sat} - SST_{insitu} median 2026-01-01 0303 2026-06-30 2155 zso 0-90

median -0.06 RSD 0.39 141592 cases



ql 3-5 |T_{sat}-T_{insitu}|<30min |SST_{insitu}-SST_{cl}|<5K blacklist_20251222_20260630.txt 5<=N_{box}

The following table provides the Meteosat-derived SST quality results over the reporting period.

Meteosat <u>night-time</u> SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 1 K)	Median in K	RSD in K
JAN. 2026	17378	-0.21	0.48	-0.19	0.45
FEB. 2026	17319	-0.16	0.44	-0.13	0.41
MAR. 2026	19162	-0.16	0.47	-0.13	0.42
APR. 2026	15175	-0.11	0.44	-0.09	0.39
MAY 2026	17093	-0.13	0.46	-0.10	0.40
JUN. 2026	12916	-0.11	0.48	-0.06	0.42
Meteosat <u>day-time</u> SST quality results over 1st half 2026					
JAN. 2026	27676	-0.12	0.45	-0.11	0.40
FEB. 2026	25371	-0.08	0.42	-0.06	0.37
MAR. 2026	23632	-0.05	0.41	-0.03	0.36
APR. 2026	21045	-0.05	0.42	-0.03	0.36
MAY 2026	23840	-0.10	0.45	-0.06	0.38
JUN. 2026	20028	-0.10	0.49	-0.04	0.42
567 unique buoys were selected for this quality assessment.					

Table 3: Meteosat SST quality results over 1st half 2026, for 3, 4, 5 quality indexes.

Comments:

Overall statistics are good and within the requirement.

5.2.2. Meteosat Third Generation SST (OSI-206-b) quality

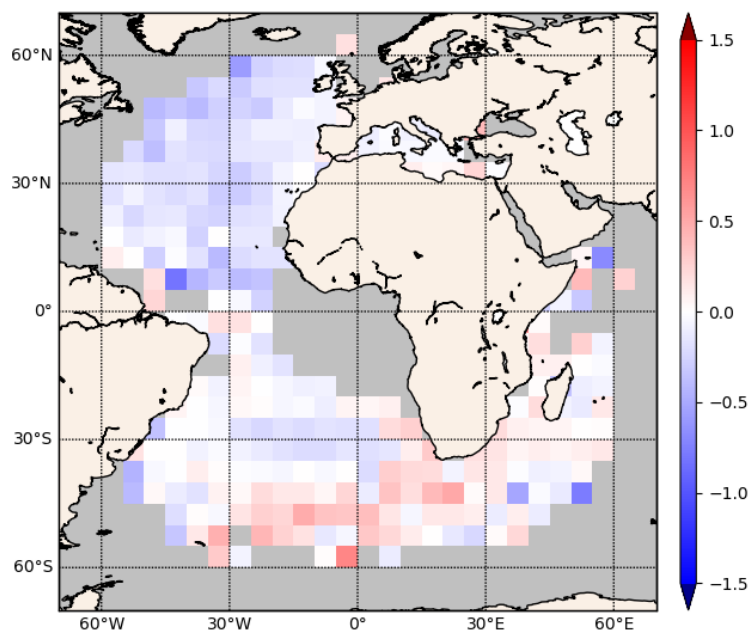
This MTG day-1 product is distributed to users since the 07/08/2025. It has a pre-operational status, due to the limited (3-months) validation period. Whilst this new product benefit from the higher temporal and spatial resolution of MTG, the output files have the same temporal and spatial sampling as the MSG products.

The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period. Monthly maps are available on <https://osi-saf.eumetsat.int/low-and-mid-latitudes-processing-center/charts-display?product=SST>.

Figure 7: Meteosat-12 (MTG-I1) night-time SST median difference with respect to buoys measurements for quality level 3,4,5

METEOSAT12 SST_{sat} - SST_{insitu} median 2026-01-01 0001 2026-06-30 2355 zso 110-180

median -0.08 RSD 0.42 117380 cases

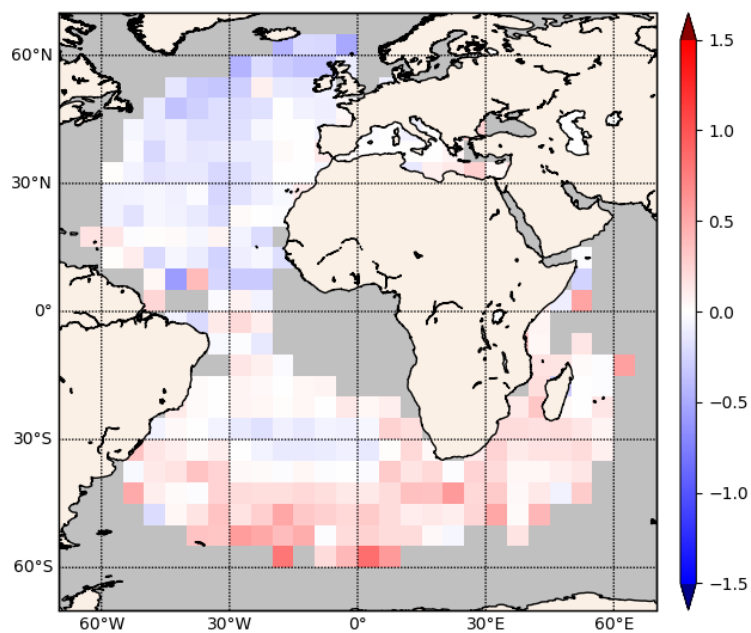


ql 3-5 |T_{sat}-T_{insitu}|<30min |SST_{insitu}-SST_{ch}|<5K blacklist_20251222_20260630.txt 5<=N_{box}

Figure 8: Meteosat-12 (MTG-I1) day-time SST median difference with respect to buoys measurements for quality level 3,4,5

METEOSAT12 SST_{sat} - SST_{insitu} median 2026-01-01 0202 2026-06-30 2158 zso 0-90

median -0.02 RSD 0.36 163327 cases



ql 3-5 |T_{sat}-T_{insitu}|<30min |SST_{insitu}-SST_{ch}|<5K blacklist_20251222_20260630.txt 5<=N_{box}

The following table provides the Meteosat-12-derived SST quality results over the reporting period.

Meteosat-12 <u>night-time</u> SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 1 K)	Median in K	RSD in K
JAN. 2026	19602	-0.19	0.47	-0.16	0.42
FEB. 2026	19897	-0.13	0.46	-0.09	0.42
MAR. 2026	21179	-0.14	0.50	-0.11	0.42
APR. 2026	20791	-0.08	0.46	-0.04	0.40
MAY 2026	20756	-0.11	0.47	-0.07	0.41
JUN. 2026	15155	-0.09	0.48	-0.03	0.42
Meteosat-12 <u>day-time</u> SST quality results over 1st half 2026					
JAN. 2026	32220	-0.08	0.42	-0.07	0.36
FEB. 2026	29260	-0.03	0.41	-0.01	0.36
MAR. 2026	26309	-0.04	0.41	-0.02	0.36
APR. 2026	26982	-0.02	0.40	0.01	0.35
MAY 2026	26989	-0.07	0.42	-0.04	0.36
JUN. 2026	21567	-0.03	0.43	0.00	0.37
540 unique buoys were selected for this quality assessment.					

Table 4: Meteosat-12 (MTG-I1) SST quality results over 1st half 2026, for 3, 4, 5 quality indexes.

Comments:

Overall statistics are good and within the requirement.

5.2.3. GOES-East SST (OSI-207-c) quality

The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period. Monthly maps are available on <https://osi-saf.eumetsat.int/low-and-mid-latitudes-processing-center/charts-display?product=SST>.

The operational SST retrieval from MSG/SEVIRI and GOES-East updated chain validation report v1.1 (<https://osi-saf.eumetsat.int/documentation-lml>) gives further details about the regional bias observed.

Figure 9: GOES-East night-time SST median difference with respect to buoys measurements for quality level 3,4,5

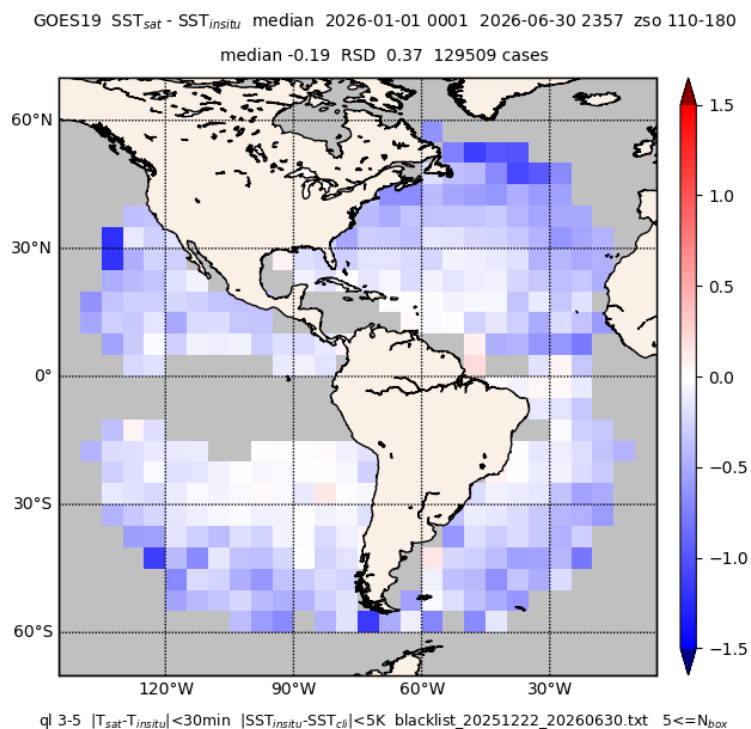
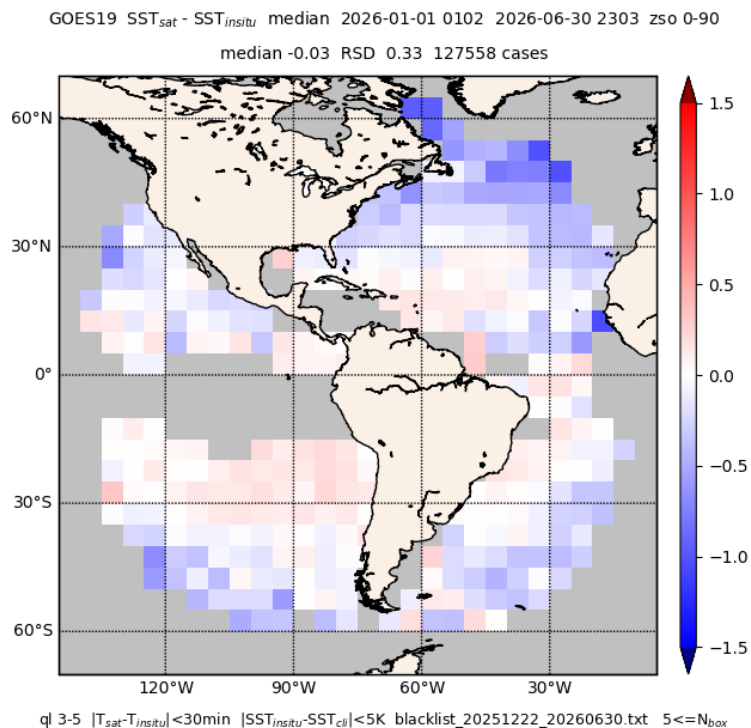


Figure 10: GOES-East day-time SST median difference with respect to buoys measurements for quality level 3,4,5



The following table provides the GOES-E-derived SST quality results over the reporting period.

GOES-East <u>night-time</u> SST quality results 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 1 K)	Median in K	RSD in K
JAN. 2026	21897	-0.24	0.40	-0.18	0.36
FEB. 2026	23185	-0.24	0.40	-0.18	0.35
MAR. 2026	27703	-0.25	0.43	-0.19	0.35
APR. 2026	22593	-0.26	0.45	-0.19	0.38
MAY 2026	18087	-0.28	0.43	-0.22	0.40
JUN. 2026	16044	-0.26	0.45	-0.19	0.41
GOES-East <u>day-time</u> SST quality results 1st half 2026					
JAN. 2026	23352	-0.05	0.34	-0.01	0.30
FEB. 2026	22914	-0.02	0.32	0.01	0.28
MAR. 2026	25049	-0.04	0.34	-0.01	0.30
APR. 2026	20694	-0.10	0.40	-0.05	0.34
MAY 2026	18781	-0.16	0.39	-0.12	0.37
JUN. 2026	16768	-0.16	0.43	-0.10	0.37
640 unique buoys were selected for this quality assessment.					

Table 5: GOES-East SST quality results over 1st half 2026, for 3, 4, 5 quality indexes

Comments:

Overall statistics are good and within the requirement.

5.2.4. Meteosat Indian Ocean SST (OSI-IO-SST) quality

On the 23 June 2022, Meteosat-9, in position 45.5° East, replaced Meteosat-8 (in position 41.5° East since 2016) for the Indian Ocean Data Coverage (IODC). Sea Surface Temperature is processed as a demonstration product since 2016.

The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period.

Figure 11: Meteosat Indian Ocean night-time SST median difference with respect to buoys measurements for quality level 3,4,5

METEOSAT09 SST_{sat} - SST_{insitu} median 2026-01-01 0003 2026-06-30 2349 zso 110-180

median -0.07 RSD 0.41 58659 cases

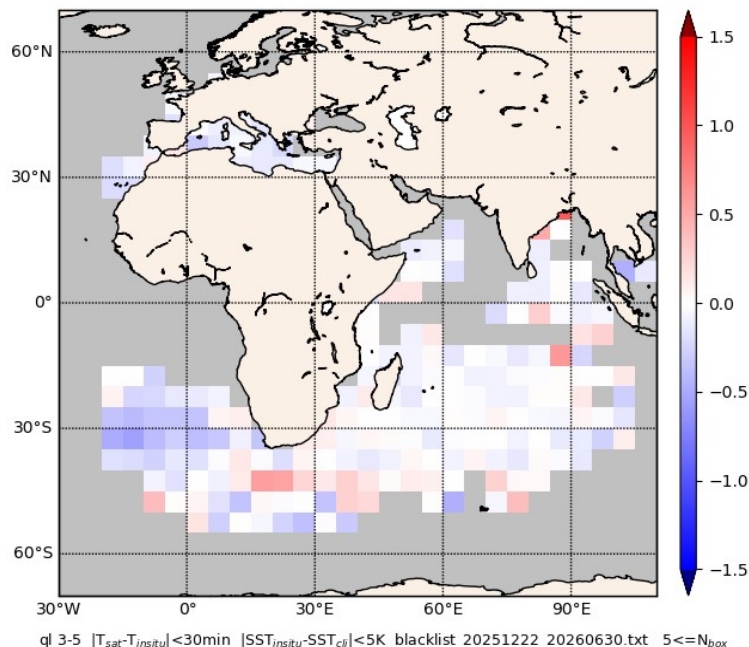
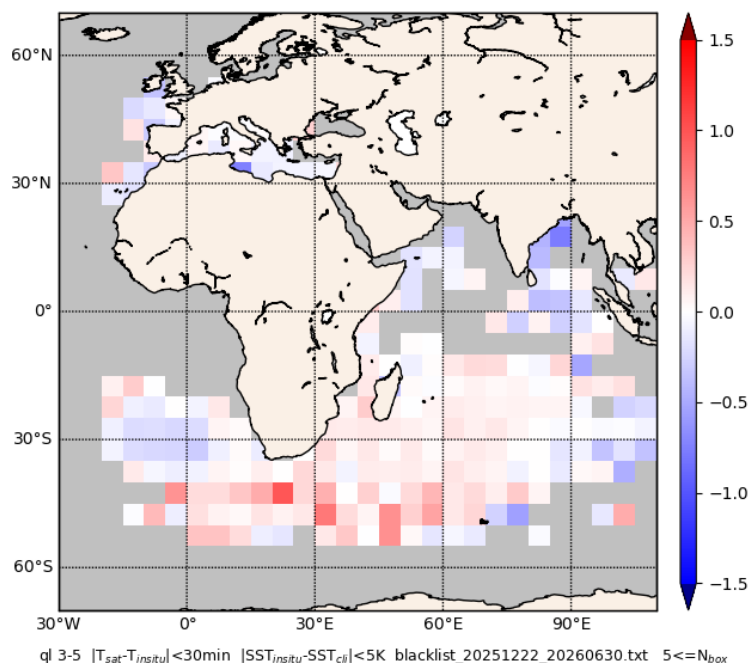


Figure 12: Meteosat Indian Ocean day-time SST median difference with respect to buoys measurements for quality level 3,4,5

METEOSAT09 SST_{sat} - SST_{insitu} median 2026-01-01 0203 2026-06-30 1755 zso 0-90

median 0.01 RSD 0.37 77258 cases



The following table provides the Meteosat Indian Ocean-derived SST quality results over the reporting period.

Meteosat Indian Ocean <u>night-time</u> SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 1 K)	Median in K	RSD in K
JAN. 2026	7198	-0.11	0.46	-0.09	0.42
FEB. 2026	9940	-0.12	0.42	-0.09	0.39
MAR. 2026	12005	-0.13	0.46	-0.10	0.42
APR. 2026	10255	-0.11	0.45	-0.09	0.41
MAY 2026	10540	-0.09	0.47	-0.06	0.40
JUN. 2026	8721	-0.03	0.47	0.00	0.39
Meteosat Indian Ocean <u>day-time</u> SST quality results over 1st half 2026					
JAN. 2026	16799	0.06	0.53	0.06	0.43
FEB. 2026	16268	-0.08	0.41	-0.05	0.36
MAR. 2026	14393	-0.06	0.43	-0.03	0.37
APR. 2026	11399	-0.04	0.43	-0.02	0.37
MAY 2026	9664	0.03	0.44	0.05	0.34
JUN. 2026	8735	0.08	0.42	0.09	0.33
344 unique buoys were selected for this quality assessment.					

Table 6: Meteosat Indian Ocean SST quality results over 1st half 2026, for 3, 4, 5 quality indexes.

Comments:
Overall statistics are good and within the requirement.

5.2.5. NAR SST (OSI-202-c) quality

The operational NAR SST is processed with AVHRR and VIIRS data, separately. Currently Metop-B and NOAA-20 are used.

The comparison between NAR SST products and Match up data bases (MDB) gathering in situ (buoy) measurements is performed on a routine basis for each operational Metop and NOAA-20 satellite. It is considered that if the accuracy requirements are met for both AVHRR and VIIRS separately, the accuracy requirements for OSI-202-c are fully met.

5.2.5.1. NOAA-20 NAR SST quality

The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period. Monthly maps are available on <https://osi-saf.eumetsat.int/low-and-mid-latitudes-processing-center/charts-display?product=SST>.

Figure 13: NOAA-20 NAR night-time SST median difference with respect to buoys measurements for quality level 3,4,5

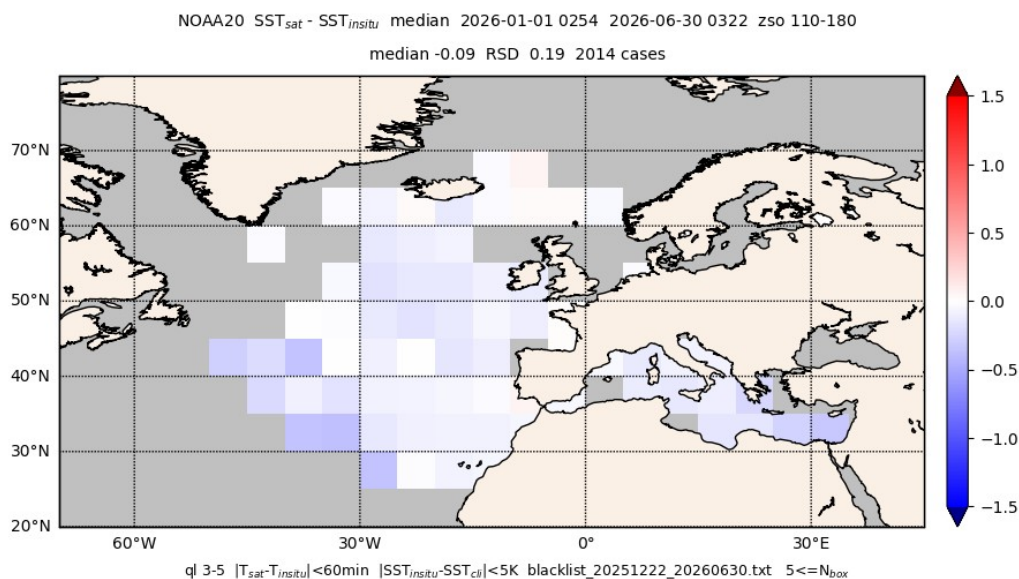
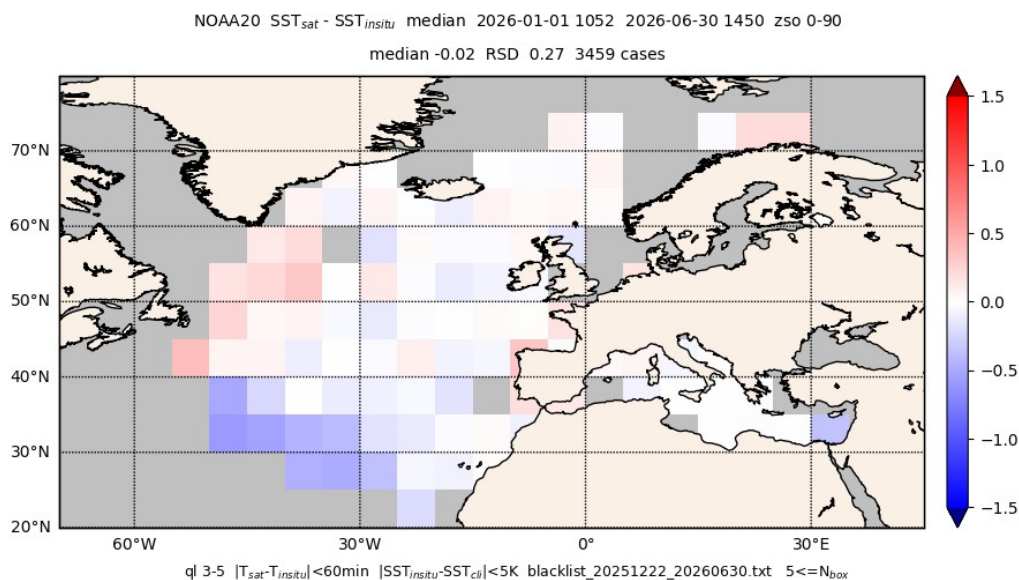


Figure 14: NOAA-20 NAR day-time SST median difference with respect to buoys measurements for quality level 3,4,5



The following table provides the NOAA-20-derived SST quality results over the reporting period.

NOAA-20 NAR <u>night-time</u> SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 0.8 K)	Median in K	RSD in K
JAN. 2026	354	-0.08	0.24	-0.06	0.16
FEB. 2026	450	-0.11	0.23	-0.08	0.16
MAR. 2026	405	-0.15	0.26	-0.12	0.22
APR. 2026	340	-0.13	0.24	-0.10	0.20
MAY 2026	223	-0.14	0.24	-0.10	0.17
JUN. 2026	242	-0.15	0.30	-0.11	0.21
NOAA-20 NAR <u>day-time</u> SST quality results over 1st half 2026					
JAN. 2026	345	-0.07	0.33	-0.02	0.27
FEB. 2026	533	-0.03	0.34	0.01	0.22
MAR. 2026	579	-0.10	0.37	-0.05	0.26
APR. 2026	616	-0.06	0.37	-0.03	0.26
MAY 2026	729	-0.02	0.43	-0.01	0.27
JUN. 2026	657	-0.11	0.48	-0.05	0.34
226 unique buoys were selected for this quality assessment.					

Table 7: Quality results for NOAA-20 NAR SST over 1st half 2026, for 3, 4, 5 quality indexes

Comments:

Overall statistics are good and within the requirement.

5.2.5.2. Metop NAR SST quality

The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period. Monthly maps are available on <https://osi-saf.eumetsat.int/low-and-mid-latitudes-processing-center/charts-display?product=SST>.

Figure 15: Metop-B NAR night-time SST median difference with respect to buoys measurements for quality level 3,4,5

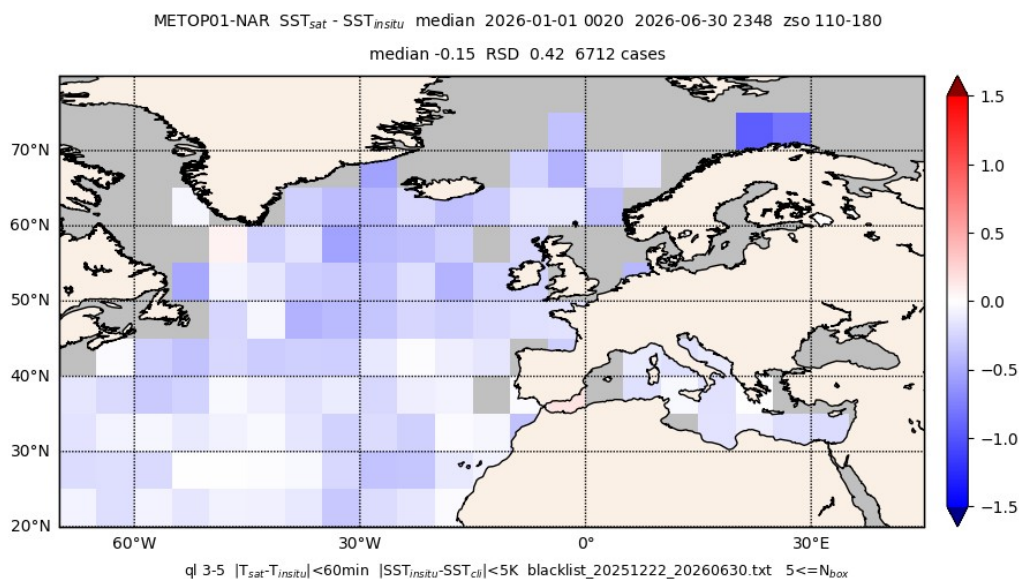
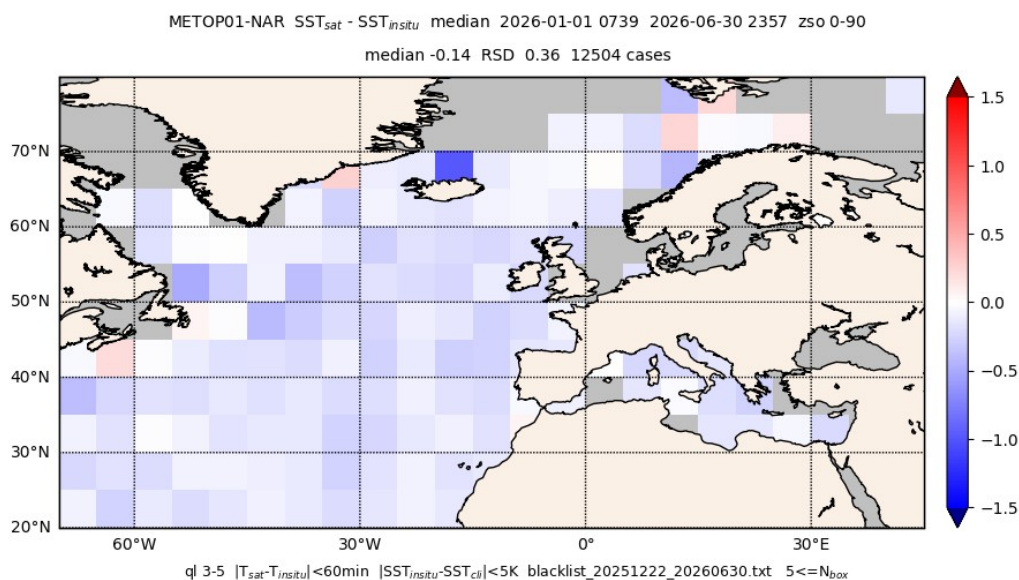


Figure 16: Metop-B NAR day-time SST median difference with respect to buoys measurements for quality level 3,4,5



The following table provides Metop-B-derived SST quality results over the reporting period.

Metop-B NAR night-time SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 0.8 K)	Median in K	RSD in K
JAN. 2026	1575	-0.18	0.52	-0.13	0.42
FEB. 2026	1404	-0.20	0.47	-0.11	0.37
MAR. 2026	1536	-0.22	0.54	-0.12	0.42
APR. 2026	995	-0.30	0.46	-0.26	0.43
MAY 2026	745	-0.26	0.52	-0.17	0.48
JUN. 2026	457	-0.25	0.54	-0.16	0.48
Metop-B NAR day-time SST quality results over 1st half 2026					
JAN. 2026	1634	-0.16	0.43	-0.11	0.37
FEB. 2026	1572	-0.16	0.38	-0.14	0.31
MAR. 2026	2067	-0.20	0.51	-0.14	0.35
APR. 2026	2197	-0.19	0.46	-0.14	0.35
MAY 2026	2495	-0.22	0.51	-0.16	0.37
JUN. 2026	2539	-0.20	0.52	-0.14	0.39
1441 unique buoys were selected for this quality assessment.					

Table 8: Quality results for Metop-B NAR SST over 1st half 2026, for 3, 4, 5 quality indexes

Comments:

Overall statistics are good and within the requirement.

5.2.6. GBL SST (OSI-201-b) and MGR SST (OSI-204-b) quality

The OSI SAF SST products on global coverage (GBL SST and MGR SST) are based on Metop/AVHRR data, currently Metop-B.

The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period. Monthly maps are available on <https://osi-saf.eumetsat.int/low-and-mid-latitudes-processing-center/charts-display?product=SST>.

The Metop/AVHRR SST validation report, available on <http://osi-saf.eumetsat.int>, gives further details about the regional bias observed and their origin.

Figure 17: Metop-B night-time SST median difference with respect to buoys measurements for quality level 3,4,5

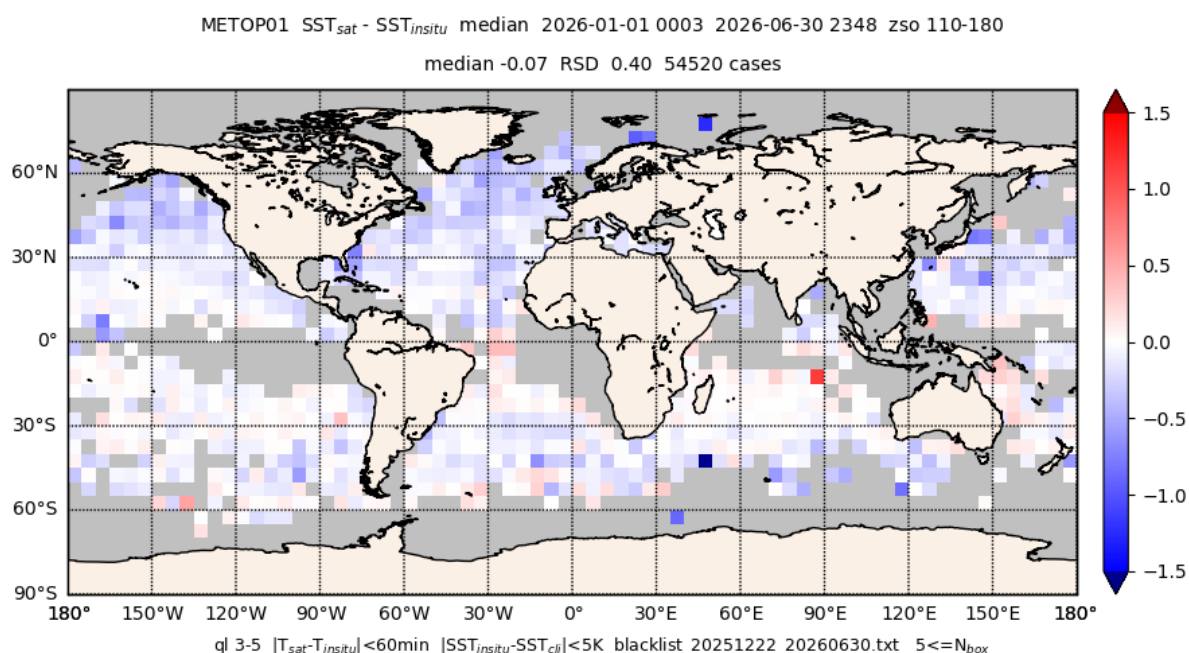
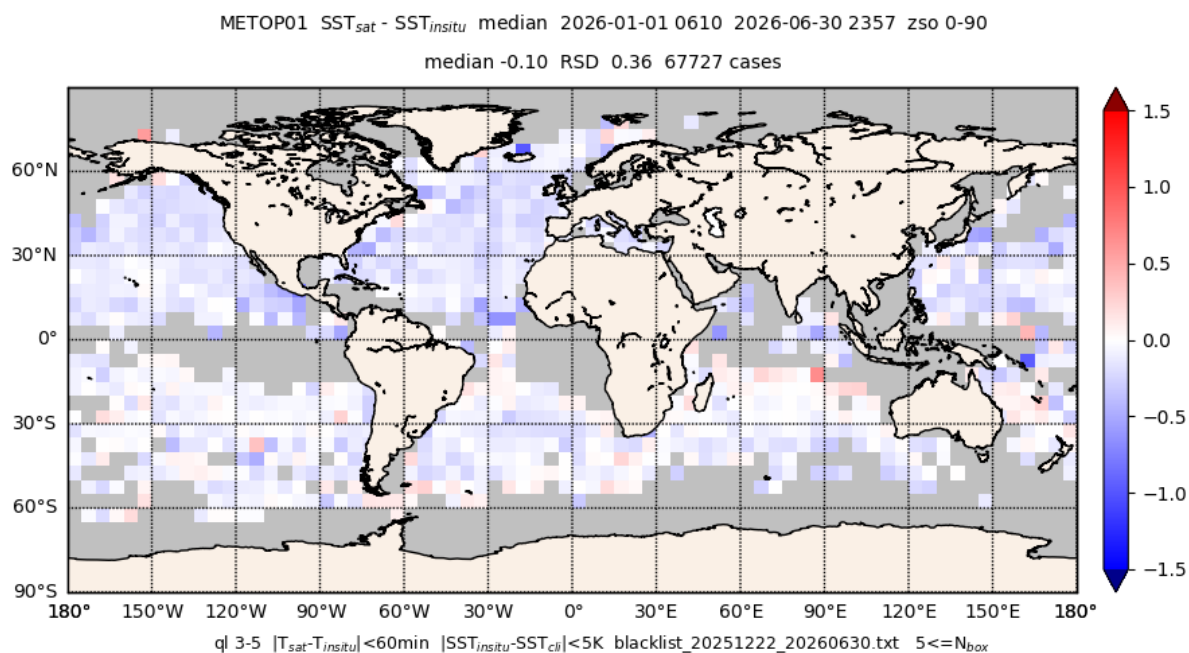


Figure 18: Metop-B day-time SST median difference with respect to buoys measurements for quality level 3,4,5



The following table provides the Metop-derived SST quality results over the reporting period.

Global Metop-B <u>night-time</u> SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 0.8 K)	Median in K	RSD in K
JAN. 2026	9333	-0.17	0.50	-0.07	0.38
FEB. 2026	9512	-0.17	0.49	-0.06	0.36
MAR. 2026	10930	-0.20	0.56	-0.07	0.39
APR. 2026	9523	-0.20	0.55	-0.08	0.42
MAY 2026	8227	-0.16	0.55	-0.06	0.44
JUN. 2026	6995	-0.14	0.52	-0.03	0.43
Global Metop-B <u>day-time</u> SST quality results over 1st half 2026					
JAN. 2026	11265	-0.16	0.44	-0.11	0.35
FEB. 2026	10789	-0.16	0.42	-0.11	0.33
MAR. 2026	12185	-0.16	0.45	-0.11	0.35
APR. 2026	11696	-0.15	0.45	-0.10	0.36
MAY 2026	11275	-0.15	0.49	-0.09	0.36
JUN. 2026	10517	-0.14	0.52	-0.07	0.39
1441 unique buoys were selected for this quality assessment.					

Table 9: Quality results for global METOP SST over 1st half 2026, for 3,4,5 quality indexes

Comments:

Overall statistics are good and within the requirement.

In Figure 17, two buoy data points in the Indian Ocean appear suspicious. They are being monitored in case of significant drift.

5.2.7. MGR SST (OSI-204-c) quality

Following the request of the UK MET Office (for OSTIA in CMEMS) to have the SST from 2 Metops, the Full resolution Metop Sea Surface Temperature metagranules are also processed with Metop-C/AVHRR.

The following maps indicate the median night-time and day-time SST median difference with respect to buoys measurements for quality level 3,4,5 over the reporting period. Monthly maps are available on <https://osi-saf.eumetsat.int/low-and-mid-latitudes-processing-center/charts-display?product=SST>.

The Metop/AVHRR SST validation report, available on <http://osi-saf.eumetsat.int>, gives further details about the regional bias observed and their origin.

Figure 19: Metop-C night-time SST median difference with respect to buoys measurements for quality level 3,4,5

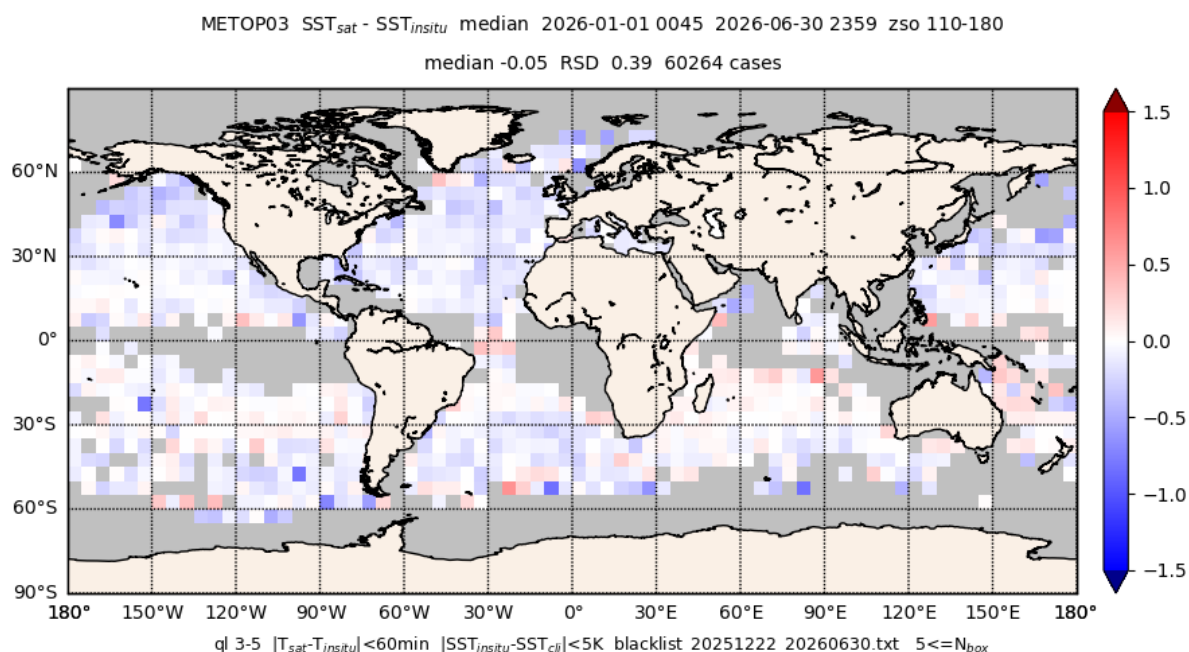
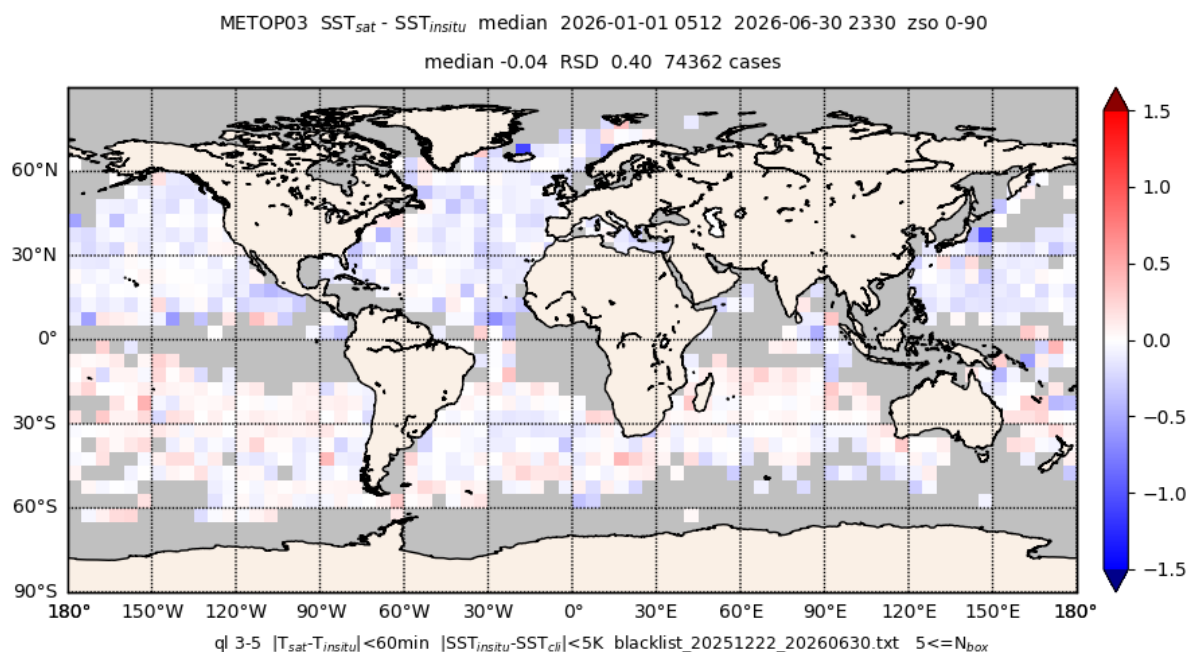


Figure 20: Metop-C day-time SST median difference with respect to buoys measurements for quality level 3,4,5



The following table provides the Metop-derived SST quality results over the reporting period.

Global Metop-C <u>night-time</u> SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req.: ± 0.5 K)	SD in K (req.: 0.8 K)	Median in K	RSD in K
JAN. 2026	10385	-0.19	0.55	-0.07	0.38
FEB. 2026	10613	-0.19	0.53	-0.06	0.36
MAR. 2026	11581	-0.20	0.63	-0.05	0.39
APR. 2026	10300	-0.19	0.58	-0.06	0.39
MAY 2026	9318	-0.18	0.57	-0.04	0.41
JUN. 2026	8067	-0.16	0.55	-0.03	0.37
Global Metop-C <u>day-time</u> SST quality results over 1st half 2026					
JAN. 2026	12553	-0.04	0.48	0.00	0.40
FEB. 2026	12148	-0.06	0.46	-0.01	0.38
MAR. 2026	13145	-0.07	0.48	-0.03	0.40
APR. 2026	12819	-0.12	0.51	-0.06	0.41
MAY 2026	12463	-0.13	0.53	-0.07	0.42
JUN. 2026	11234	-0.11	0.56	-0.05	0.44
1435 unique buoys were selected for this quality assessment.					

Table 10: Quality results for global Metop-C SST over 1st half 2026, for 3,4,5 quality indexes

Comments:

Overall statistics are good and within the requirement.

5.2.8. High Latitude SST/IST (OSI-203-a, OSI-203-b, OSI-205-a, OSI-205-b) quality

The OSI-203 and OSI-205 series are high latitude SST and global ice surface temperature (IST) and marginal ice zone surface temperature products.

Conventional measures as Standard Deviation of mean differences (SD) and mean differences are calculated for monthly averages for day-time and night-time. Data with quality levels 3, 4 and 5 are used for both the SST and IST validation. Daytime is defined for data with sun-zenith angles smaller than 80 degrees and night-time data is defined for sun-zenith angles greater than 110 degrees. For the OSI-205 products, the in-situ observations and the centre of the level-2 pixel must be within 3 km of each other and observation times must be within 15 minutes of the satellite crossing time. For the OSI-203 products the in-situ observation must be within the 5 km level-3 pixel and within the 12 hour period that the product covers.

Buoy data used for the SST validation is from the Copernicus Marine Environment Monitoring Service (In Situ TAC).

The IST accuracy requirements are split into two parts in the Product Requirement Document: Namely, surface temperatures from IR radiometers, or similar high quality surface temperature observations, and air temperatures from drifting buoys or other platforms. The primary reason for splitting IST performance requirements into skin and air temperature requirements is a well documented physical difference between air and skin temperatures (Nielsen-Englyst et al., 2019 (<https://tc.copernicus.org/articles/13/1005/2019/>)). Secondly, buoy temperatures are often associated with higher uncertainty due to unknown snow conditions around the buoy (discussed in the product ATBDs). In accordance with the OSISAF Product Requirement Document (PRD) the OSI-203 and OSI-205 IST target requirements against air temperature observations are: SD < 3 K and bias < 3.5 K; against surface temperature observations: SD < 2 K and bias < 1.5 K.

The air temperature requirements are applied to buoy reference data, including air temperatures from Ice Mass Balance Buoys (IMB), and air temperatures from land based weather stations, like the PROMICE stations on the Greenland Ice Sheet. The surface temperature requirements are applied for radiometric skin temperature measurements and surface temperature references from IMBs, when such data are available and to calculated surface temperature reference measurements for PROMICE stations. The PROMICE surface temperatures are calculated from Incoming and outgoing long wave radiation measurements at the PROMICE stations (<https://essd.copernicus.org/preprints/essd-2021-80/essd-2021-80.pdf>). These reference surface temperatures are considered of high quality.

Data from a new ice-buoy is introduced in this HYR report (first-half 2026). That is data from the Copernicus/EUMETSAT ocean and ice buoy development project, TRUSTED, which purpose is the develop ocean and ice platforms to collect Fiducial reference measurements. In the TRUSTED project, a prototype ice buoy has been tested and deployed on fast ice in NW Greenland, during winter 2026. The TRUSTED Ice Buoy (the *TIB*), measure temperatures from 16 thermistors separated by 3 cm from the snow/ice interface (Thermistor no1) to 0.48 meters above (thermistor no16) the ice surface (through snow, if any). In this test, the air temperature is represented by thermistor no-16 and the surface temperature is represented by the coldest measurement from the 16 thermistors, at any given time. More information here <https://www.eumetsat.int/TRUSTED> .

5.2.8.1. Level 2 HL SST/IST based on Metop/AVHRR (OSI-205-a)

The Level 2 HL SST/IST (OSI-205-a) is derived from polar satellites data, currently from Metop-B. The following tables and figures provide the OSI-205-a SST quality results over the reporting period.

The following tables and figures provide, in order, the results for the SST, sea IST and inland IST, respectively.

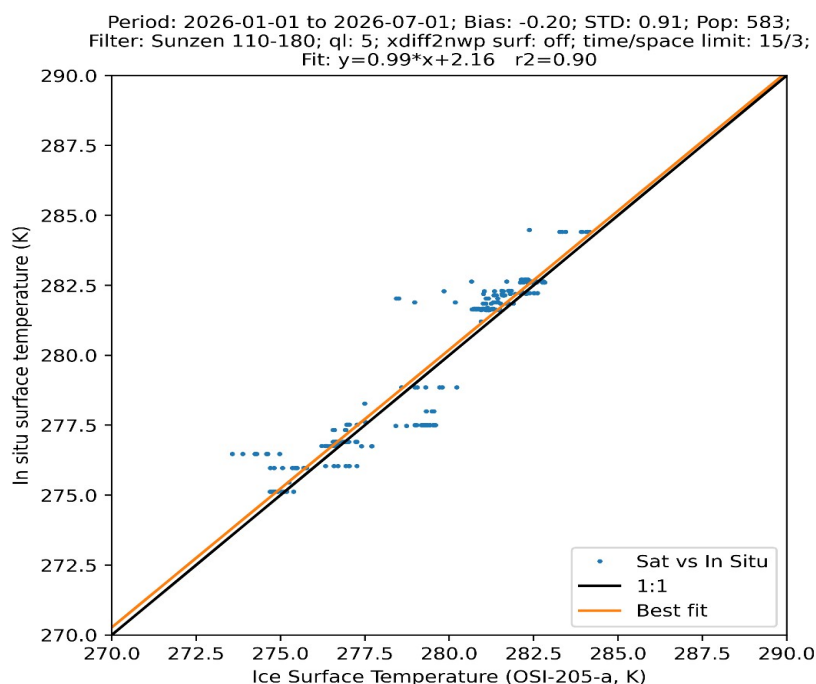


Figure 21: 1st half 2026 OSI-205-a SST mean difference and bias with respect to conventional buoys measurements from the Copernicus In Situ DB. Only night-time data for the northern hemisphere are shown.

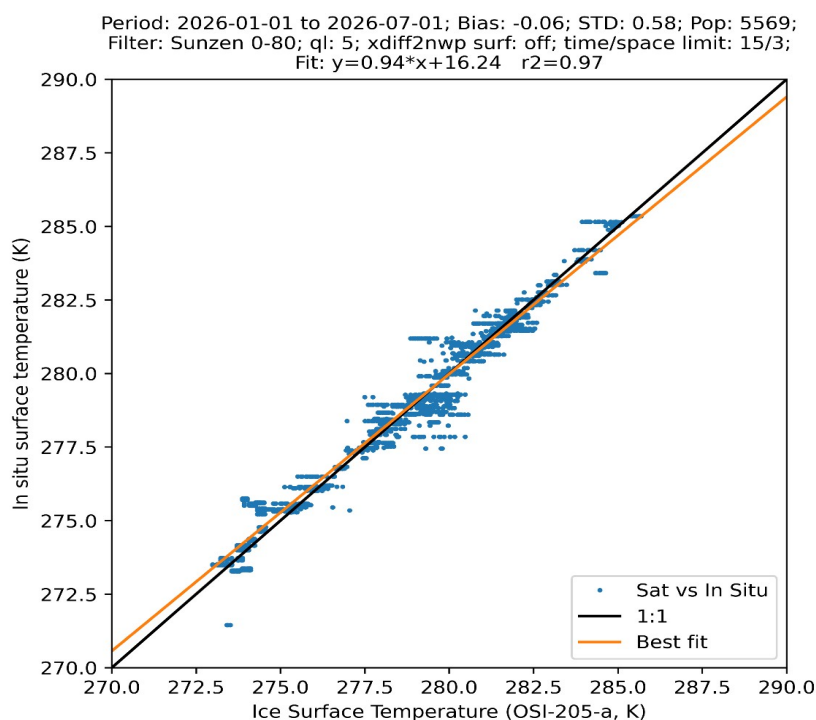


Figure 22: 1st half 2026 OSI-205-a SST mean difference and bias with respect to conventional buoys measurements from the Copernicus In Situ DB. Only daytime data for the northern hemisphere are shown.

As for the SST validation, table 11 below contains a list of buoys that were disqualified from the validation data because they were supposedly stranded on a coastline or located in ice.

Buoy ID	Location	Buoy ID	Location
2903998	Coast of Greenland near Qaanaaq	4902660	Coast of BC (Canada)
4902663	Coast of BC (Canada)	6402739	coast of Novaja Zemlja
7801677	Coast of South Georgia and South Sandwich Islands	7810239	Coast of Argentina
7900964	Davis sea		

Table 11: List of buoys disqualified from the satellite SST quality assessment

Map of sst buoys used for validation

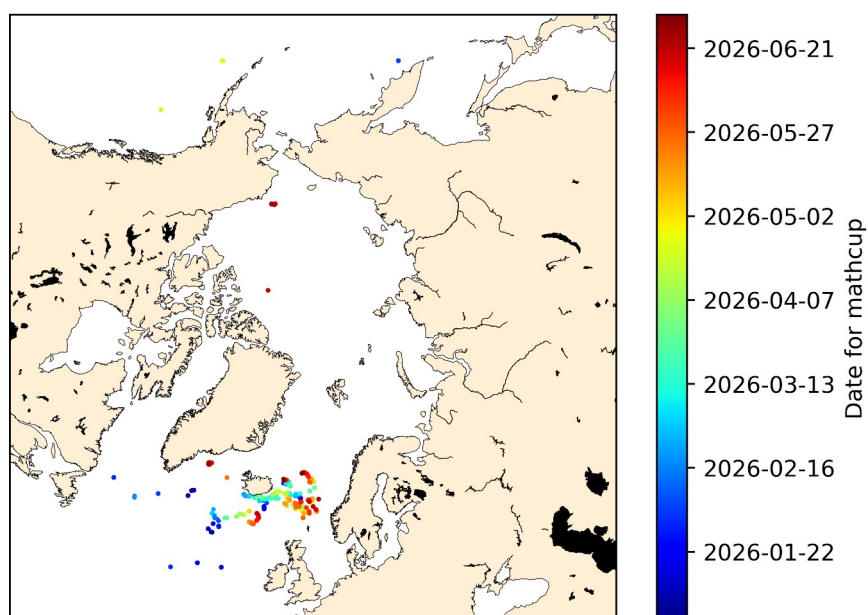


Figure 23: Map of the position of the conventional buoys from the Copernicus In Situ DB at the time of matchup for the Northern Hemisphere.

OSI-205-a AVHRR SST quality results over JUL. 2025 to JUN. 2026, night-time, NH					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	0.00	NA	NA	NA	NA
AUG. 2025	0.00	NA	NA	NA	NA
SEP. 2025	20.00	-0.09	87.71	0.14	86.27
OCT. 2025	62.00	-0.64	8.85	0.67	32.58
NOV. 2025	70.00	0.52	25.61	1.18	-17.98
DEC. 2025	0.00	-	-	-	-
2nd half 2025	293.00	-0.04	94.74	0.82	18.39
JAN. 2026	352.00	-0.05	92.86	1.08	-8.00
FEB. 2026	103.00	-0.24	65.71	0.50	50.00
MAR. 2026	128.00	-0.60	14.29	0.38	62.00
APR. 2026	0.00	NA	NA	NA	NA
MAY 2026	0.00	NA	NA	NA	NA
JUN. 2026	0.00	NA	NA	NA	NA
1st half 2026	583.00	-0.20	71.43	0.91	9.00
OSI-205-a AVHRR SST quality results over JUL. 2025 to JUN. 2026, day-time, NH					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	1043.00	-0.50	28.06	2.32	-131.65
AUG. 2025	623.00	0.23	67.80	1.11	-11.14
SEP. 2025	752.00	-0.19	73.47	0.79	21.41
OCT. 2025	144.00	0.26	62.50	0.56	44.37
NOV. 2025	39.00	0.45	35.86	0.63	36.95
DEC. 2025	0.00	-	-	-	-
2nd half 2025	2601.00	-0.18	74.23	1.66	-65.76
JAN. 2026	18.00	0.04	94.29	0.16	84.00
FEB. 2026	177.00	-0.14	80.00	0.35	65.00
MAR. 2026	1020.00	-0.08	88.57	0.37	63.00
APR. 2026	920.00	0.11	84.29	0.52	48.00
MAY 2026	1068.00	0.14	80.00	0.41	59.00
JUN. 2026	2366.00	-0.20	71.43	0.70	30.00
1st half 2026	5569.00	-0.06	91.43	0.58	42.00
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (SD / SD \text{ req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the target requirement.					

Table 12: Quality results for OSI-205-a AVHRR SST against Copernicus in situ DB buoys, for the Northern Hemisphere, over JUL. 2025 to JUN. 2026, for quality level 5 by night and by day

Comments:

Due to technical issues it was not possible to perform validation with a temporal constraint of 150 minutes between satellite and reference times, as was done previous. Instead the more narrow 15 minute constraint was chosen. Also, a non working nwp-filter altered previous validation values. Now the maximum solar angle for daytime is lowered by 10 angle degrees, to maximum 80 degrees, to minimise undetected clouds during daytime. For future validations these conditions will be investigated.

All requirements are met for the northern hemisphere SST for daytime throughout the half year period. While only the SD of January for night time is surpassing the requirements.

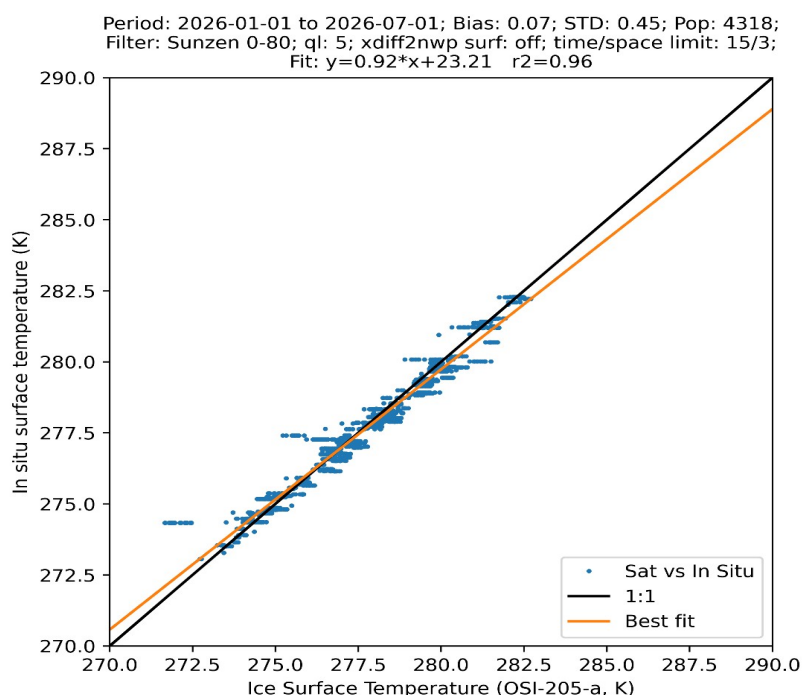


Figure 24: 1st half 2026 OSI-205-a SST mean difference and bias with respect to conventional buoys measurements from the Copernicus In Situ DB. Only night-time data for the southern hemisphere are shown.

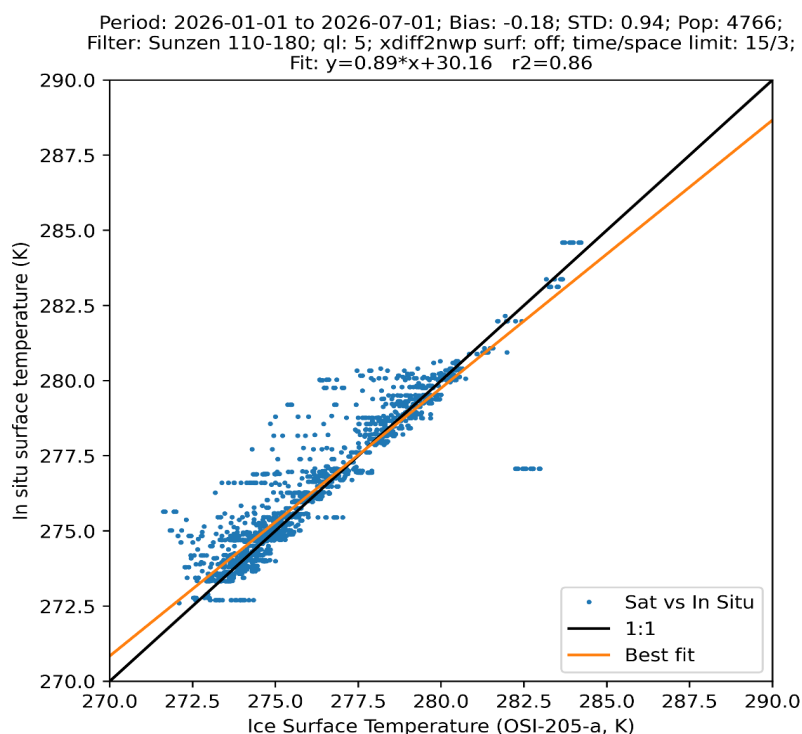


Figure 25: 1st half 2026 OSI-205-a SST mean difference and bias with respect to conventional buoys measurements from the Copernicus In Situ DB. Only daytime data for the southern hemisphere are shown.

Map of sst buoys used for validation

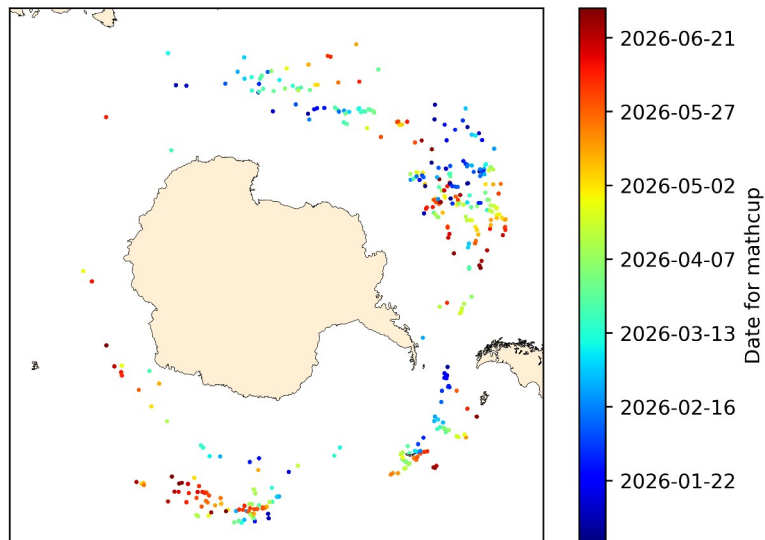


Figure 26: Map of the position of the conventional buoys from the Copernicus In Situ DB at the time of matchup for the Southern Hemisphere

OSI-205-a AVHRR SST quality results over JUL. 2025 to JUN. 2026, night-time, SH					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	668.00	-0.57	18.09	0.80	19.70
AUG. 2025	344.00	-0.26	63.38	0.57	43.12
SEP. 2025	560.00	-0.10	85.91	0.46	54.21
OCT. 2025	126.00	-0.49	29.46	0.72	27.56
NOV. 2025	0.00	NA	NA	NA	NA
DEC. 2025	0.00	NA	NA	NA	NA
2nd half 2025	1698.00	-0.35	50.47	0.69	31.37
JAN. 2026	0.00	NA	NA	NA	NA
FEB. 2026	190.00	-0.01	98.57	0.38	62.00
MAR. 2026	674.00	0.25	64.29	1.59	-59.00
APR. 2026	1116.00	-0.43	38.57	0.90	10.00
MAY 2026	1488.00	-0.14	80.00	0.70	30.00
JUN. 2026	1298.00	-0.24	65.71	0.68	32.00
1st half 2026	4766.00	-0.18	74.29	0.94	6.00
OSI-205-a AVHRR SST quality results over JUL. 2025 to JUN. 2026, day-time, SH					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	0.00	NA	NA	NA	NA
AUG. 2025	19.00	-0.40	43.38	0.14	86.31
SEP. 2025	256.00	-0.16	77.49	0.32	68.10
OCT. 2025	108.00	0.04	94.55	0.45	54.72
NOV. 2025	427.00	-0.12	83.10	0.29	71.19
DEC. 2025	0.00	NA	NA	NA	NA
2nd half 2025	1197.00	-0.06	91.72	0.33	66.84
JAN. 2026	1636.00	0.13	81.43	0.32	68.00
FEB. 2026	1038.00	0.10	85.71	0.37	63.00
MAR. 2026	990.00	-0.06	91.43	0.63	37.00
APR. 2026	634.00	0.10	85.71	0.49	51.00
MAY 2026	20.00	0.37	47.14	0.13	87.00
JUN. 2026	0.00	NA	NA	NA	NA
1st half 2026	4318.00	0.07	90.00	0.45	55.00
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 13: Quality results for OSI-205-a AVHRR SST, for the Southern Hemisphere, over JUL. 2025 to JUN. 2026, for quality level 5,4,3 by night and by day

Comments:

Due to technical issues it was not possible to perform validation with a temporal constraint of 150 minutes between satellite and reference times, as was done previous. Instead the more narrow 15 minute constraint was chosen. Also, a non working nwp-filter altered previous validation values. Now the maximum solar angle for daytime is lowered by 10 angle degrees, to maximum 80 degrees, to minimise non detected clouds during daylight. For future validations these conditions will be investigated.

All requirements are met for the southern hemisphere SST for both day and night-time throughout the last year, with a single exception for nighttime of March 2026.

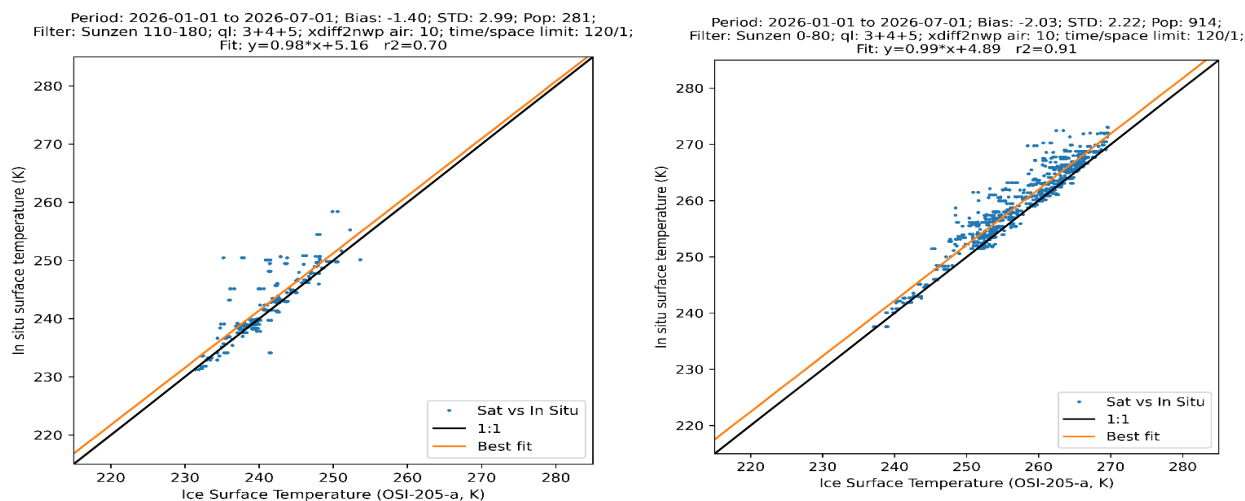


Figure 27: 1st half 2026 OSI-205-a monthly mean IST mean difference and bias with respect to conventional buoys measurements from the SIMB3 buoys (air temperature). Data with quality level 3, 4, 5 are shown. The graph on the left shows night-time data, while the plot on the right only shows day-time observations.

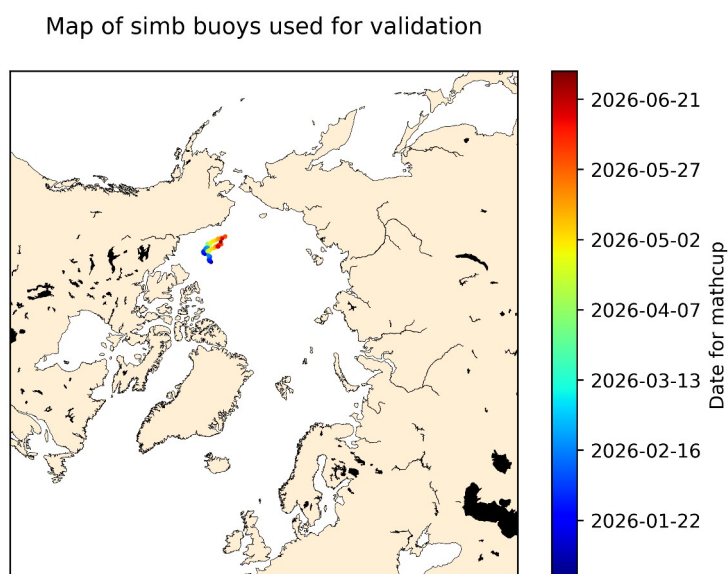


Figure 28: Map of the position of the SIMB3 buoys at the time of matchup for the northern hemisphere.

OSI-205-a IST quality results over 1st half 2026, night-time, air temperature, SIMB3					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JAN. 2026	225,00	-1,58	54,84	3,18	-6,16
FEB. 2026	56,00	-0,67	80,75	1,82	39,41
MAR. 2026	0,00	NA	NA	NA	NA
APR. 2026	0,00	NA	NA	NA	NA
MAY 2026	0,00	NA	NA	NA	NA
JUN. 2026	0,00	NA	NA	NA	NA
OSI-205-a IST quality results over 1st half 2026, day-time, air temperature, SIMB3					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JAN. 2026	0.00	NA	NA	NA	NA
FEB. 2026	0.00	NA	NA	NA	NA
MAR. 2026	141.00	-1.67	52.40	1.78	40.68
APR. 2026	328.00	-2.13	39.22	2.35	21.66
MAY 2026	399.00	-1.97	43.69	2.21	26.17
JUN. 2026	46.00	-3.06	12.55	2.21	26.29
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 14: Quality results for OSI-205-a Metop AVHRR IST against SIMB3 for the Northern Hemisphere, over 1st half 2026, for quality levels 3, 4 and 5, by night and by day.

Comments:

For day-time, all requirements are met, while the requirement for SD for January night time is surpassed. The filters has been changed slightly to ensure temporal overlaps and avoid oversampling spatially. This has been implemented since fewer SIMB3 buoys were found compared to earlier years. This has not been investigated further because the focus has been to implement and add the below validation using two prototypes of the TIB buoy. In line with the SST validation the daytime has been shortened by 10 solar angle degrees, to maximum 80 degrees to minimise undetected clouds during twilight.

OSI-205-a IST quality results over 1st half 2026, night-time, air temperature, TIB					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JAN. 2026	26.00	-0.08	97.66	1.61	46.42
FEB. 2026	10.00	-4.00	-14.43	2.80	6.82
MAR. 2026	0.00	NA	NA	NA	NA
APR. 2026	0.00	NA	NA	NA	NA
MAY 2026	0.00	NA	NA	NA	NA
JUN. 2026	0.00	NA	NA	NA	NA
OSI-205-a IST quality results over 1st half 2026, day-time, air temperature, TIB					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JAN. 2026	0.00	NA	NA	NA	NA
FEB. 2026	0.00	NA	NA	NA	NA
MAR. 2026	376.00	-3.30	5.72	1.63	45.83
APR. 2026	236.00	-4.19	-19.84	1.56	47.84
MAY 2026	0.00	NA	NA	NA	NA
JUN. 2026	0.00	NA	NA	NA	NA
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (SD / SD \text{ req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Tableau 15: Quality results for OSI-205-a Metop AVHRR IST against TIB for the Northern Hemisphere, over 1st half 2026, for quality levels 3, 4 and 5, by night and by day.

Comments:

Two TIB's were deployed on the sea ice near Qaanaaq, the air temperature is the temperature of temperature sensor no. 16, at 0.5 m above the snow/ice interface. The validation show that all requirement are met, the low number of cases is partially due to an incomplete dataset, spanning only from mid/end of January to mid/end of April. In line with the SST validation the daytime is now defined for solar angles between 0 and 80 degrees.

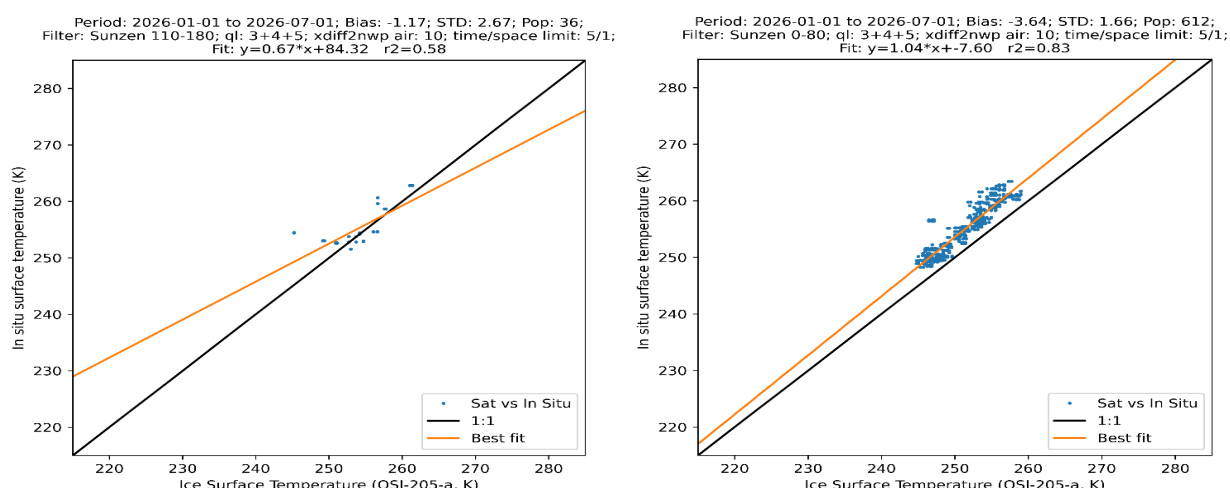


Figure 29: 1st half 2026 OSI-205-a monthly mean IST mean difference and bias with respect to measurements from the TIB buoys (air temperature). Data with quality level 3, 4, 5 are shown. The graph on the left shows night-time data, while the plot on the right only shows day-time observations.

OSI-205-a IST quality results over 1st half 2026, night-time, surface temperature, TIB					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JAN. 2026	24.00	0.54	84.52	1.20	59.99
FEB. 2026	10.00	-3.96	-13.23	2.73	9.14
MAR. 2026	0.00	NA	NA	NA	NA
APR. 2026	0.00	NA	NA	NA	NA
MAY 2026	0.00	NA	NA	NA	NA
JUN. 2026	0.00	NA	NA	NA	NA
OSI-205-a IST quality results over 1st half 2026, day-time, surface temperature, TIB					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JAN. 2026	0.00	NA	NA	NA	NA
FEB. 2026	0.00	NA	NA	NA	NA
MAR. 2026	368.00	-1.12	67.96	1.53	49.03
APR. 2026	236.00	-0.80	77.19	0.93	69.16
MAY 2026	0.00	NA	NA	NA	NA
JUN. 2026	0.00	NA	NA	NA	NA
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Tableau 16: Quality results for OSI-205-a Metop AVHRR IST against TIB measurements for the Northern Hemisphere, over 1st half 2026, for quality levels 3, 4 and 5, by night and by day.

Comments:

The surface temperature is the coldest temperature of the 16 TIB thermistors. The validation show all requirements are met. In line with the SST validation the daytime is now defined for solar angles between 0 and 80 degrees.

Location of TRUSTED buoys used for validation

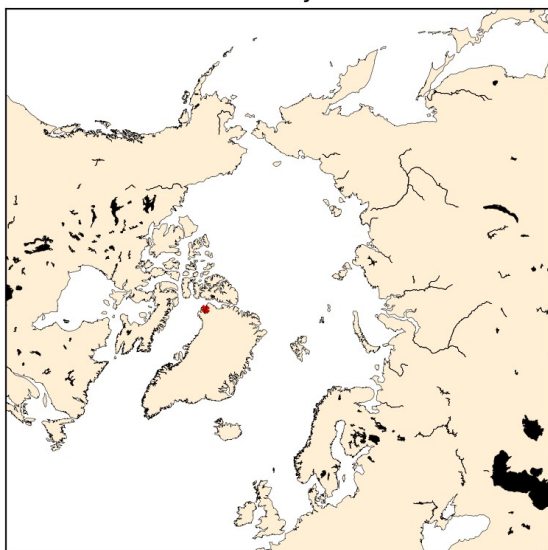


Figure 30: Map of the position of the location of the two TIB buoys.

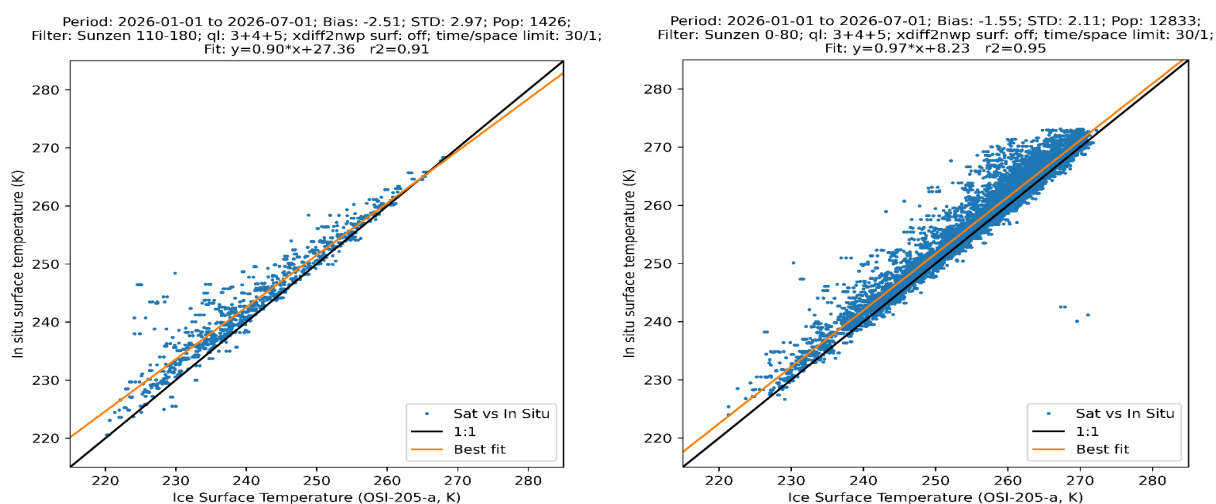


Figure 31: IST PROMICE surface: 1st half 2026 OSI-205-a monthly mean IST with respect to surface temperature measurements from PROMICE. The graph on the left shows night-time data with quality flags 5, 4 & 3, while the plot on the right only shows day-time observations

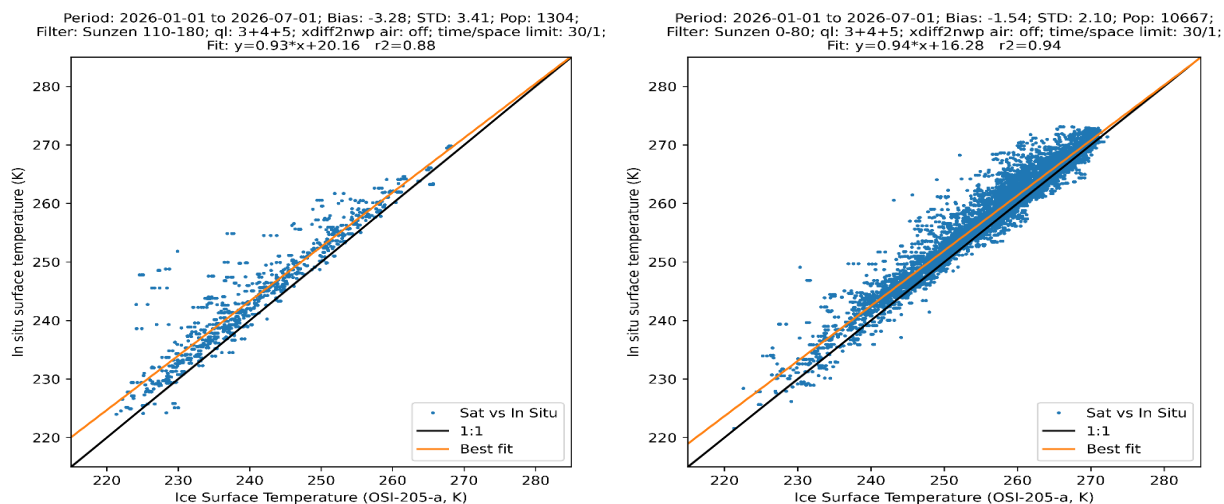


Figure 32: IST PROMICE air: 1st half 2026 OSI-205-a monthly mean IST with respect to air measurements from PROMICE. The graph on the left shows night-time data with quality flags 5, 4 & 3, while the plot on the right only shows day-time observations

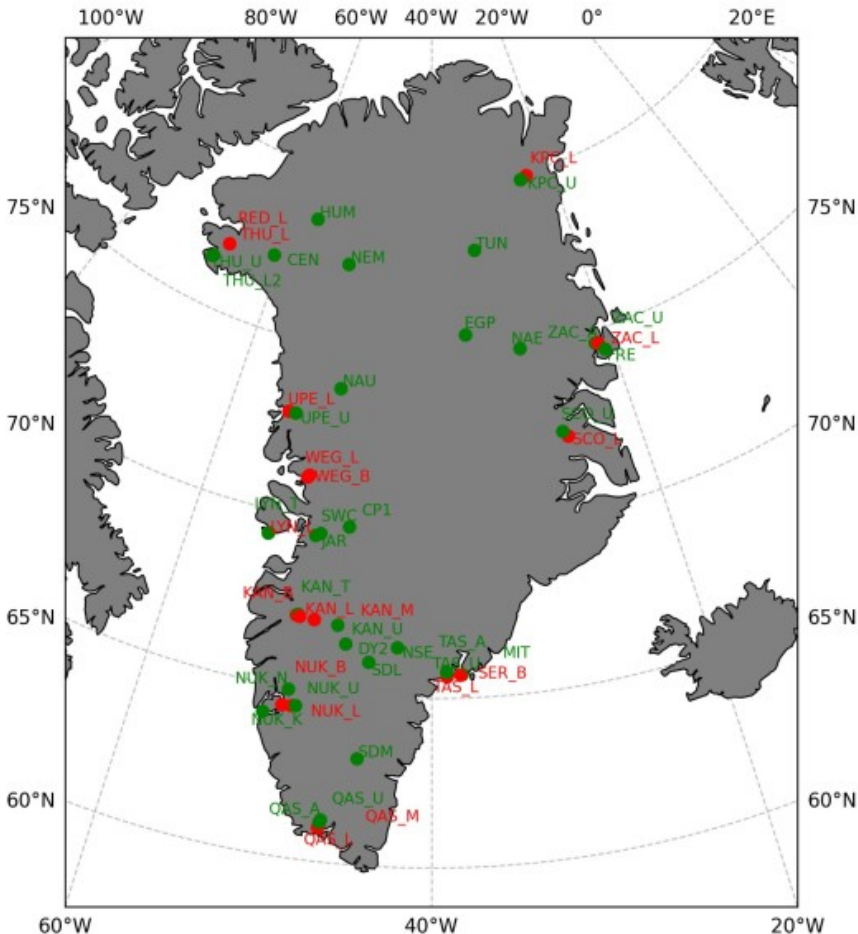


Figure 33: Map of Greenland with all PROMICE and GCN-NET automatic weather stations. The stations in red are not used. Of the green stations the following have been used for the validation: 'cen', 'cp1', 'dy2', 'egp', 'fre', 'hum', 'jar', 'kan_u', 'kpc_u', 'mit', 'nae', 'nau', 'nem', 'nse', 'nuk_u', 'qas_u', 'sco_u', 'sdl', 'sdm', 'swc', 'thu_u' and 'tun' (_u indicates it is an upper station).

OSI-205-a IST quality results over 1st half 2026, night-time, air temperature, PROMICE					
Month	Number of cases	Mean diff. in K (target: ± 3.5 K)	Mean diff. margin (*)	SD in K (target: 3.0 K)	SD margin (**)
JAN. 2026	1051.00	-2.41	31.22	2.69	10.36
FEB. 2026	349.00	-2.94	16.09	3.68	-22.81
MAR. 2026	10.00	-1.68	51.86	2.33	22.19
APR. 2026	0.00	NA	NA	NA	NA
MAY 2026	0.00	NA	NA	NA	NA
JUN. 2026	0.00	NA	NA	NA	NA
OSI-205-a IST quality results over 1st half 2026, day-time, air temperature, PROMICE					
Month	Number of cases	Mean diff. in K (target: ± 3.5 K)	Mean diff. margin (*)	SD in K (target: 3.0 K)	SD margin (**)
JAN. 2026	0.00	NA	NA	NA	NA
FEB. 2026	161.00	-2.93	16.38	3.59	-19.64
MAR. 2026	1257.00	-2.04	41.69	2.01	33.01
APR. 2026	3386.00	-1.70	51.55	1.99	33.62
MAY 2026	4443.00	-1.30	62.73	1.80	39.84
JUN. 2026	3586.00	-1.49	57.38	2.42	19.41
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. target}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD target}))$					
100 refers then to a perfect product, 0 to a quality just as targeted. without margin.					
A negative result indicates that the product quality does not fulfil the target requirement.					

Table 17: Quality results for OSI-205-a Metop AVHRR IST over 1st half 2026, for quality levels 3, 4 and 5, by night and by day. Compared to PROMICE measured surface temperature

Comments:

The validation against PROMICE surface temperature has been changed slightly with respect to spatial and temporal filters to ensure the overlap between satellite and in situ measurement to be present but not duplicated. The validation show that all requirements are met except the SD during night time in February and during daytime in January. In line with the SST validation the daytime is now defined for solar angles between 0 and 80 degrees.

OSI-205-a IST quality results over 1st half 2026, night-time, air temperature, PROMICE					
Month	Number of cases	Mean diff. in K (target: ± 3.5 K)	Mean diff. margin (*)	SD in K (target: 3.0 K)	SD margin (**)
JAN. 2026	966.00	-3.25	7.16	3.15	-4.90
FEB. 2026	313.00	-3.41	2.45	4.11	-36.91
MAR. 2026	10.00	-1.43	59.20	2.99	0.19
APR. 2026	0.00	NA	NA	NA	NA
MAY 2026	0.00	NA	NA	NA	NA
JUN. 2026	0.00	NA	NA	NA	NA
OSI-205-a IST quality results over 1st half 2026, day-time, air temperature, PROMICE					
Month	Number of cases	Mean diff. in K (target: ± 3.5 K)	Mean diff. margin (*)	SD in K (target: 3.0 K)	SD margin (**)
JAN. 2026	0.00	NA	NA	NA	NA
FEB. 2026	151.00	-3.03	13.56	3.54	-18.09
MAR. 2026	888.00	-2.27	35.20	2.59	13.52
APR. 2026	2333.00	-1.75	49.86	2.22	25.92
MAY 2026	3960.00	-1.27	63.78	1.89	36.85
JUN. 2026	3335.00	-1.46	58.24	1.92	36.01
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. target}))$					
(**) SD margin = $100 * (1 - (SD / SD \text{ target}))$					
100 refers then to a perfect product, 0 to a quality just as targeted. without margin.					
A negative result indicates that the product quality does not fulfil the target requirement.					

Comments:

The validation against PROMICE surface temperature has been changed slightly in regards to spatial and temporal filters to ensure the overlap between satellite and in situ measurement to be present but not duplicated. The validation show that all requirements are met except the SD during night time in January and February and during daytime in January. If similar results is found in future validations this will be investigated further. In line with the SST validation the daytime is now defined for solar angles between 0 and 80 degrees.

5.2.8.2. Level 2 NHL SST/IST based on NPP/VIRRS (OSI-205-b)

The Level 2 Northern High Latitude Sea and Ice Surface Temperature (NHL SST/IST, OSI-205-b) is based on VIIRS data from SNPP.

The following tables provides the OSI-205-b SST and IST quality results.

OSI-205-b NHL VIIRS SST quality results over JUL. 2025 to JUN. 2026, night-time					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	380	-0.28	59.9	1.02	-1.7
AUG. 2025	657	-0.21	70	1.02	-1.9
SEP. 2025	1050	-0.39	43.9	0.97	3.2
OCT. 2025	1119	-0.62	10.9	1.04	-3.8
NOV. 2025	954	-0.52	25.3	0.98	1.7
DEC. 2025	1121	-0.52	26	1	-0.3
JAN. 2026	971	-0.39	43.7	0.95	5.2
FEB. 2026	613	-0.5	29.1	1.01	-1.3
MAR. 2026	468	-0.52	25.7	0.9	10.2
APR. 2026	623	-0.46	33.7	0.92	7.8
MAY 2026	433	-0.46	34.4	0.83	16.6
JUN. 2026	197	-0.46	34.5	0.86	14.3
OSI-205-b NHL VIIRS SST quality results over JUL. 2025 to JUN. 2026, day-time					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	1445	-0.12	83	0.9	9.8
AUG. 2025	1678	-0.02	96.6	0.91	8.7
SEP. 2025	1375	-0.31	55.5	0.82	18.1
OCT. 2025	841	-0.37	46.7	0.87	13.2
NOV. 2025	471	-0.47	33.5	0.81	18.9
DEC. 2025	338	-0.5	28.5	0.75	25.2
JAN. 2026	454	-0.46	33.7	0.85	15.2
FEB. 2026	509	-0.45	35.4	0.79	21.3
MAR. 2026	568	-0.54	23.1	0.71	29
APR. 2026	920	-0.35	50	0.73	27.3
MAY 2026	1051	-0.3	56.6	0.73	27.4
JUN. 2026	911	-0.37	47.7	0.7	29.8
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 18: Quality results for OSI-205-b NHL NPP VIIRS SST, over Northern Atlantic and Arctic Ocean, over JUL. 2025 to JUN. 2026, for 3,4,5 quality indexes, by night and by day. Comparison with drifting buoys.

OSI-205-b NHL VIIRS IST quality results over JUL. 2025 to JUN. 2026, night-time					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JUL. 2025	5	-3.06	12.5	1.94	35.2
AUG. 2025	36	-2.22	36.7	1.39	53.7
SEP. 2025	253	-2.6	25.8	1.61	46.2
OCT. 2025	361	-2.31	34	1.88	37.4
NOV. 2025	360	-2.72	22.4	1.99	33.8
DEC. 2025	322	-2.38	32	2.11	29.6
JAN. 2026	622	-3.01	13.9	2.17	27.8
FEB. 2026	571	-2.9	17.1	2.5	16.8
MAR. 2026	297	-2.18	37.7	2.8	6.7
APR. 2026	168	-2.64	24.6	1.91	36.2
MAY 2026	30	-2.86	18.3	1.84	38.7
JUN. 2026	14	-3.05	12.8	2.37	21.1
OSI-205-b NHL VIIRS IST quality results over JUL. 2025 to JUN. 2026, day-time					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JUL. 2025	200	-1.8	48.6	1.99	33.7
AUG. 2025	291	-2.06	41.3	1.74	41.9
SEP. 2025	413	-2.33	33.3	1.5	50.1
OCT. 2025	190	-1.91	45.5	1.74	42
NOV. 2025	44	-2.62	25.3	1.82	39.2
DEC. 2025	15	-2.15	38.6	2.06	31.2
JAN. 2026	47	-2.27	35.1	1.82	39.4
FEB. 2026	206	-2.68	23.4	2	33.4
MAR. 2026	296	-2.48	29	2.57	14.3
APR. 2026	590	-2.24	36.1	2.36	21.3
MAY 2026	777	-1.89	46	2.06	31.4
JUN. 2026	290	-1.58	55	1.73	42.5
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 19: Quality results for OSI-205-b NHL NPP VIIRS IST, over Northern Atlantic and Arctic Ocean, over JUL. 2025 to JUN. 2026, for 3,4,5 quality indexes, by night and by day. Compared to PROMICE measured air temperature on the Greenland ice sheet.

Comments:

For the last half year, the SST part of the OSI-205-b product is within or at the target accuracy requirement for all months at both daytime and nighttime, except in February at night-time. The IST part of the OSI-205-b product is within target requirement for all months, both daytime and night time.

5.2.8.3. Level 3 NHL SST/IST based on Metop/AVHRR (OSI-203-a)

The Level 3 Northern High Latitude Sea and Sea Ice Surface Temperature (NHL SST/IST, OSI-203-a) is derived from the level 2 SST/IST product OSI-205-a, which is based on AVHRR data from Metop-B.

The following tables provide the OSI-203-a SST quality, then IST quality results.

OSI-203-a NHL AVHRR SST quality results over JUL. 2025 to JUN. 2026, night-time					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	670	-0.16	76.9	1.11	-11
AUG. 2025	1464	-0.37	46.9	1.19	-18.6
SEP. 2025	2307	-0.64	8.1	0.97	2.5
OCT. 2025	3221	-0.81	-15.2	0.99	0.9
NOV. 2025	3134	-0.76	-9.1	0.88	12.3
DEC. 2025	3534	-0.75	-7.7	0.92	8.5
JAN. 2026	3064	-0.76	-8.2	0.93	6.8
FEB. 2026	2138	-0.84	-19.7	0.91	8.8
MAR. 2026	2089	-0.84	-19.9	0.8	19.8
APR. 2026	1605	-0.78	-12	0.85	15.2
MAY 2026	1109	-0.43	38.1	0.96	3.5
JUN. 2026	296	-0.73	-4.8	1.2	-20.1
OSI-203-a NHL AVHRR SST quality results over JUL. 2025 to JUN. 2026, day-time					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	4311	-0.01	98.9	0.95	4.7
AUG. 2025	5042	-0.04	93.8	0.97	2.7
SEP. 2025	4953	-0.18	73.9	0.81	19.2
OCT. 2025	3082	-0.27	61.6	0.79	20.8
NOV. 2025	1946	-0.27	60.9	0.74	25.8
DEC. 2025	1388	-0.34	51.2	0.6	39.5
JAN. 2026	1464	-0.41	41.4	0.74	26.5
FEB. 2026	1891	-0.37	46.6	0.74	26
MAR. 2026	2857	-0.41	42	0.7	29.7
APR. 2026	2836	-0.24	65.1	0.72	28.5
MAY 2026	3646	-0.19	73.5	0.74	26.3
JUN. 2026	3215	-0.27	61.3	0.72	28
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 20: Quality results for OSI-203-a NHL Metop-B AVHRR SST over JUL. 2025 to JUN. 2026, for 3,4,5 quality indexes, by night and by day. Comparison with drifting buoys.

OSI-203-a NHL AVHRR IST quality results over JUL. 2025 to JUN. 2026, night-time					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JUL. 2025	0				
AUG. 2025	28	-6.3	-80	1.93	35.5
SEP. 2025	179	-2.71	22.7	2.85	4.9
OCT. 2025	420	-2.99	14.6	2.7	10.1
NOV. 2025	820	-2.98	14.9	2.77	7.7
DEC. 2025	878	-3.23	7.6	3.1	-3.4
JAN. 2026	1099	-3.36	4	2.75	8.4
FEB. 2026	643	-3.16	9.6	2.91	3.1
MAR. 2026	329	-2.76	21.2	3.7	-23.3
APR. 2026	89	-3.46	1.1	3.42	-14
MAY 2026	17	-5.2	-48.6	3.5	-16.6
JUN. 2026	0	NA	NA	NA	NA
OSI-203-a NHL AVHRR IST quality results over JUL. 2025 to JUN. 2026, day-time					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JUL. 2025	12	-2.88	17.8	2.2	26.7
AUG. 2025	747	-2.28	34.8	2.9	3.2
SEP. 2025	1192	-2.69	23	2.4	19.9
OCT. 2025	935	-2.87	18.1	2.48	17.4
NOV. 2025	353	-2.99	14.7	2.47	17.7
DEC. 2025	41	-5.24	-49.7	2.11	29.6
JAN. 2026	174	-4.04	-15.5	1.9	36.8
FEB. 2026	670	-3.16	9.8	2.75	8.5
MAR. 2026	977	-3.08	12	2.75	8.2
APR. 2026	1312	-2.07	41	3.1	-3.2
MAY 2026	1466	-1.23	64.8	2.79	7.1
JUN. 2026	907	-1.41	59.6	2.71	9.7
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 21: Quality results for OSI-203-a NHL AVHRR IST over JUL. 2025 to JUN. 2026, for 3,4,5 quality indexes, by night and by day. Compared to PROMICE measured air temperature on the Greenland ice sheet, averaged over 12 hours.

Comments:

For the last half year, the SST part of the OSI-203-a product is within target accuracy requirement for all months at daytime. At night-time the products is within the target requirements for standard deviation (except June) and outside the target requirement for mean different for most months (but within the threshold requirement).

The IST part of the OSI-203-a product is within the target accuracy requirements for most months at daytime, except for mean difference in January and for standard deviation in April. For nighttime it is within the target accuracy requirements for mean difference for all months (except May), while the the standard deviation is too high in March, April and May (still within threshold requirement).

5.2.8.4. Level 3 NHL SST/IST based on NPP/VIIRS (OSI-203-b)

The Level 3 Northern High Latitude Sea and Ice Surface Temperature (NHL SST/IST, OSI-203-b) is derived from the Level 2 SST/IST product OSI-205-b, which is based on VIIRS data from SNPP.

The following tables provides the OSI-203-b SST and IST quality results.

OSI-203-b NHL VIIRS SST quality results over JUL. 2025 to JUN. 2026, night-time					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	1231	-0.47	33	1.09	-9.1
AUG. 2025	1905	-0.44	37.1	1.23	-23.4
SEP. 2025	3586	-0.5	27.9	1.01	-0.6
OCT. 2025	3840	-0.63	9.9	1	0.1
NOV. 2025	3513	-0.59	16.4	0.95	5
DEC. 2025	3860	-0.48	32.1	0.93	7.3
JAN. 2026	3728	-0.43	38.6	0.84	16.1
FEB. 2026	2566	-0.55	21.2	1	0.2
MAR. 2026	2485	-0.49	29.7	0.83	16.5
APR. 2026	2877	-0.57	18.8	0.98	2.1
MAY 2026	2079	-0.6	14.8	0.87	13.2
JUN. 2026	1166	-0.79	-12.5	0.93	7.1
OSI-203-b NHL VIIRS SST quality results over JUL. 2025 to JUN. 2026, day-time					
Month	Number of cases	Mean diff. in K (req.: ± 0.7 K)	Mean diff. margin (*)	SD in K (req.: 1.0 K)	SD margin (**)
JUL. 2025	2708	-0.2	70.8	0.89	11
AUG. 2025	3161	-0.17	75.3	0.91	9.4
SEP. 2025	3404	-0.33	52.9	0.78	22.2
OCT. 2025	2211	-0.34	50.9	0.76	24.1
NOV. 2025	1772	-0.48	31.3	0.7	29.7
DEC. 2025	1409	-0.51	27.7	0.7	29.5
JAN. 2026	1936	-0.53	24.1	0.7	29.9
FEB. 2026	2113	-0.57	19.1	0.69	30.9
MAR. 2026	2369	-0.57	18.7	0.7	29.9
APR. 2026	2870	-0.35	49.6	0.75	24.9
MAY 2026	3063	-0.26	63.2	0.73	27.4
JUN. 2026	2878	-0.44	37	0.69	30.5
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (SD / SD \text{ req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 22: Quality results for OSI-203-b NHL Metop-B NPP VIIRS SST over JUL. 2025 to JUN. 2026, for 3,4,5 quality indexes, by night and by day. Comparison with drifting buoys.

OSI-203-b NHL VIIRS IST quality results over JUL. 2025 to JUN. 2026, night-time					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JUL. 2025	0	NA	NA	NA	NA
AUG. 2025	199	-3.39	3.1	2.12	29.2
SEP. 2025	743	-3.47	0.9	2.32	22.5
OCT. 2025	953	-2.7	22.9	2.28	24.1
NOV. 2025	921	-3.24	7.3	2.54	15.5
DEC. 2025	777	-3.57	-2	2.65	11.8
JAN. 2026	1169	-2.9	17	2.4	20.1
FEB. 2026	1055	-3.09	11.9	2.74	8.6
MAR. 2026	635	-3.19	8.9	3.16	-5.4
APR. 2026	465	-3.69	-5.3	2.32	22.7
MAY 2026	61	-5.49	-56.8	1.71	43
JUN. 2026	41	-4.83	-37.9	1.88	37.2
OSI-203-b NHL VIIRS IST quality results over JUL. 2025 to JUN. 2026, day-time					
Month	Number of cases	Mean diff. in K (req.: ± 3.5 K)	Mean diff. margin (*)	SD in K (req.: 3.0 K)	SD margin (**)
JUL. 2025	0	NA	NA	NA	NA
AUG. 2025	598	-2.86	18.2	2.37	21
SEP. 2025	791	-2.8	20.1	2.19	27.2
OCT. 2025	472	-3.04	13	2.42	19.4
NOV. 2025	64	-4.33	-23.6	2.59	13.6
DEC. 2025	66	-4.62	-31.9	1.9	36.8
JAN. 2026	98	-4.52	-29.1	1.98	34
FEB. 2026	374	-3.15	9.9	2.15	28.3
MAR. 2026	570	-2.75	21.3	2.78	7.5
APR. 2026	1021	-2.74	21.8	2.72	9.4
MAY 2026	1402	-2.74	21.8	2.1	30
JUN. 2026	666	-2.95	15.8	2.39	20.4
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (SD / SD \text{ req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 23: Quality results for OSI-203-b NHL NPP VIIRS IST over JUL. 2025 to JUN. 2026, for 3,4,5 quality indexes, by night and by day. Compared to PROMICE measured air temperature on the Greenland ice sheet.

Comments:

For the last half year, the SST part of the OSI-203-b product is within both target accuracy requirements for all months at daytime and nighttime, except mean difference in June at nighttime. The IST part of the OSI-203-b product is within both target accuracy requirements for all months at daytime, except for mean difference in January. For nighttime it is within the target accuracy requirement for standard deviation for all months except March. The mean difference at nighttime is outside target accuracy requirement in April, May and June.

5.2.9. IASI SST (OSI-208-b) quality

The product requirements for IASI SSTs are to have a target accuracy of 0.5 K mean difference and 0.8 K standard deviation compared to drifting buoy SSTs.

The following table provides the Metop-B derived IASI SST quality results over the reporting period.

Global Metop-B IASI <u>night-time</u> SST quality results over 1st half 2026					
Month	Number of cases	Mean diff. in K (req. : ± 0.5 K)	Mean diff. margin (*)	SD in K (req.: 0.8 K)	SD margin (**)
JAN. 2026	2299	0.10	80	0.47	41
FEB. 2026	2415	0.09	82	0.43	46
MAR. 2026	2596	0.10	80	0.51	36
APR. 2026	2191	0.04	92	0.44	45
MAY 2026	1523	0.09	82	0.47	41
JUN. 2026	1256	0.11	78	0.47	41
Global Metop-B IASI <u>day-time</u> SST quality results over 1st half 2026					
JAN. 2026	2299	0.10	80	0.47	41
FEB. 2026	2415	0.09	82	0.43	46
MAR. 2026	2596	0.10	80	0.51	36
APR. 2026	2191	0.04	92	0.44	45
MAY 2026	1523	0.09	82	0.47	41
JUN. 2026	1256	0.11	78	0.47	41
(*) Mean diff. margin = $100 * (1 - (\text{mean diff.} / \text{mean diff. req.}))$					
(**) SD margin = $100 * (1 - (\text{SD} / \text{SD req.}))$					
100 refers then to a perfect product, 0 to a quality just as required. without margin.					
A negative result indicates that the product quality does not fulfil the requirement.					

Table 24: Quality results for global Metop-B IASI SST over 1st half 2026, for Quality Levels 3, 4 and 5

Comments:

The nighttime mean bias is 0.09 with a standard deviation of 0.47K for 12280 collocations. The daytime mean bias is 0.26K with a standard deviation of 0.47K for 2099 collocations. The results are meeting the performance specifications.

5.3. Radiative Fluxes quality

5.3.1. DLI quality

DLI products are constituted of the geostationary products (GOES-East, Meteosat 0°, Meteosat Indian Ocean) and the polar ones (Atlantic High Latitude). DLI values are required to have the following accuracy when compared to land pyrgeometer measurements:

- monthly relative mean difference less than 5%,
- monthly difference standard deviation less than 10%.

The match-up data base the statistics are based on is continuously enriched, so that, for the same period, results may evolve depending on the date when the statistics were calculated.

5.3.1.1. Meteosat 0° DLI (OSI-303-a) quality

A map of the stations used for quality assessment of the geostationary DLI products is provided in 5.3.2.1.

The following table provides the hourly and daily DLI quality results over the reporting period.

Meteosat 0° hourly DLI quality results from JUL. 2025 to JUN. 2026								
Month	Number of cases	Mean DLI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)	Median	RSD
JUL. 2025	480	362.37	4.98	72.51	11.51	68.24	5.03	11.16
AUG. 2025	743	355.21	5.44	69.37	13.57	61.80	6.25	13.23
SEP. 2025	720	340.69	0.48	97.18	14.87	56.35	1.23	13.37
OCT. 2025	744	323.68	-1.51	90.67	14.87	54.06	-0.55	14.34
NOV. 2025	674	308.04	-10.73	30.33	20.35	33.94	-9.26	17.55
DEC. 2025	739	298.83	-10.86	27.32	17.60	41.10	-9.14	14.01
JAN. 2026	725	288.55	-11.83	18.00	18.82	34.78	-9.02	17.79
FEB. 2026	672	304.36	-12.90	15.23	19.26	36.72	-11.38	18.24
MAR. 2026	719	293.50	-1.63	88.89	15.33	47.77	-0.05	15.05
APR. 2026	609	307.45	4.49	70.79	15.82	48.54	5.81	14.03
MAY 2026	744	342.16	2.61	84.74	13.14	61.60	2.19	13.50
JUN. 2026	720	369.30	6.51	64.74	11.08	70.00	5.60	10.07
(*) Mean diff. margin = $100 * (1 - (\text{mean diff. in \%} / \text{mean diff. req. in \%}))$ with mean diff. in % = $100 * \text{Mean diff} / \text{Mean DLI}$ and mean diff. req. = 5 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = $100 * (1 - (\text{SD in \%} / \text{SD req. in \%}))$ with SD in % = $100 * \text{SD} / \text{Mean DLI}$ with SD req. in % = 10% Same comment as for Mean diff. Margin.								

Table 25: Meteosat 0° hourly DLI quality results from JUL. 2025 to JUN. 2026.

Meteosat 0° daily DLI quality results from JUL. 2025 to JUN. 2026								
Month	Number of cases	Mean DLI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)	Median	RSD
JUL. 2025	20	362.33	4.99	72.46	5.87	83.80	5.50	5.10
AUG. 2025	31	355.19	5.45	69.31	5.89	83.42	5.16	4.44
SEP. 2025	30	340.66	0.47	97.24	7.95	76.66	3.15	8.00
OCT. 2025	31	323.70	-1.50	90.73	6.48	79.98	-0.98	6.71
NOV. 2025	28	308.18	-11.05	28.29	11.69	62.07	-14.74	13.07
DEC. 2025	30	298.50	-10.73	28.11	9.43	68.41	-8.85	7.66
JAN. 2026	30	288.90	-11.95	17.27	10.22	64.62	-9.62	9.09
FEB. 2026	28	304.33	-12.86	15.49	10.34	66.02	-15.54	11.43
MAR. 2026	30	293.50	-1.67	88.62	6.24	78.74	-1.31	7.59
APR. 2026	25	308.10	4.43	71.24	8.49	72.44	6.56	7.98
MAY 2026	31	342.18	2.63	84.63	5.93	82.67	4.21	4.96
JUN. 2026	30	369.31	6.50	64.80	4.08	88.95	5.78	3.93
(*) Mean diff. margin = $100 * (1 - (\text{mean diff. in \%} / \text{mean diff. req. in \%}))$ with mean diff. in % = $100 * \text{Mean diff.} / \text{Mean DLI}$ and mean diff. req. = 5 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = $100 * (1 - (\text{SD in \%} / \text{SD req. in \%}))$ with SD in % = $100 * \text{SD} / \text{Mean DLI}$ with SD req. in % = 10% Same comment as for Mean diff. Margin.								

Table 26: Meteosat 0° daily DLI quality results from JUL. 2025 to JUN. 2026.

Comments:

Overall statistics are good and within the requirement.

5.3.1.2. Meteosat Indian Ocean DLI (OSI-IO-DLI) quality

On the 23 June 2022, Meteosat-9, in position 45.5° East, replaced Meteosat-8 (in position 41.5° East since 2016) for the Indian Ocean Data Coverage (IODC). Downward Long wave Irradiance is processed as a demonstration product since 2016.

The following table provides the hourly and daily DLI quality results over the reporting period.

Meteosat Indian Ocean hourly DLI quality results from JUL. 2025 to JUN. 2026								
Month	Number of cases	Mean DLI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)	Median	RSD
JUL. 2025	480	365.13	7.74	57.60	14.97	59.00	8.58	13.06
AUG. 2025	743	358.89	9.12	49.18	16.44	54.19	9.93	15.56
SEP. 2025	720	341.15	0.94	94.49	18.28	46.42	2.81	18.29
OCT. 2025	744	322.90	-2.28	85.88	19.37	40.01	-0.71	19.11
NOV. 2025	690	305.54	-12.75	16.54	23.71	22.40	-12.49	24.55
DEC. 2025	739	297.06	-12.64	14.90	22.47	24.36	-10.95	20.57
JAN. 2026	721	289.96	-10.19	29.71	21.52	25.78	-8.57	23.03
FEB. 2026	672	305.55	-11.71	23.35	22.48	26.43	-10.55	23.53
MAR. 2026	719	297.22	2.09	85.94	20.15	32.21	3.89	18.56
APR. 2026	695	310.76	9.23	40.60	19.45	37.41	11.82	18.18
MAY 2026	744	344.47	4.92	71.43	19.24	44.15	6.81	15.04
JUN. 2026	720	370.77	7.98	56.95	15.55	58.06	8.27	13.73
(*) Mean diff. margin = 100 * (1 - (mean diff. in %/ mean diff. req. in %)) with mean diff. in % = 100*Mean diff./Mean DLI and mean diff. req. = 5 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = 100 * (1 - (SD in %/ SD req. in %)) with SD in % = 100*SD/Mean DLI with SD req. in % = 10% Same comment as for Mean diff. Margin.								

Table 27: Meteosat Indian Ocean hourly DLI quality results from JUL. 2025 to JUN. 2026.

Meteosat Indian Ocean daily DLI quality results from JUL. 2025 to JUN. 2026								
Month	Number of cases	Mean DLI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)	Median	RSD
JUL. 2025	20	365.09	7.75	57.54	7.80	78.64	7.46	5.14
AUG. 2025	31	358.88	9.14	49.06	8.05	77.57	9.37	6.56
SEP. 2025	30	341.11	0.92	94.61	9.74	71.45	4.41	9.66
OCT. 2025	31	322.92	-2.28	85.88	9.59	70.30	-1.42	10.96
NOV. 2025	29	306.29	-12.36	19.29	15.64	48.94	-13.70	17.51
DEC. 2025	30	296.73	-12.50	15.75	12.10	59.22	-9.43	12.19
JAN. 2026	30	290.48	-10.38	28.53	12.50	56.97	-9.89	11.83
FEB. 2026	28	305.53	-11.66	23.67	13.38	56.21	-16.00	17.00
MAR. 2026	30	297.24	2.07	86.07	9.43	68.27	3.06	8.41
APR. 2026	29	310.74	9.24	40.53	11.43	63.22	11.92	12.27
MAY 2026	31	344.48	4.93	71.38	11.14	67.66	8.78	11.26
JUN. 2026	30	370.79	7.97	57.01	6.26	83.12	8.86	5.13
(*) Mean diff. margin = 100 * (1 - (mean diff. in %/ mean diff. req. in %)) with mean diff. in % = 100*Mean diff./Mean DLI and mean diff. req. = 5 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = 100 * (1 - (SD in %/ SD req. in %)) with SD in % = 100*SD/Mean DLI with SD req. in % = 10% Same comment as for Mean diff. Margin.								

Table 28: Meteosat Indian Ocean daily DLI quality results from JUL. 2025 to JUN. 2026.

Comments:

Overall statistics are good and within the requirement.

5.3.1.3. AHL DLI (OSI-301-c) quality

The pyrgeometer stations used for quality assessment of the AHL DLI product are briefly described in the scientific validation report (SVR) available at <https://osi-saf.eumetsat.int/products/osi-301-c>. More information on the stations is provided in 5.3.2.3

The following table provides the AHL DLI quality results over the reporting period.

AHL DLI quality results from JUL. 2025 to JUN. 2026

Month	Number of cases	Mean DLI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)
JUL. 2025	124	328.92	-17.02	1.61	25.77	25.51
AUG. 2025	124	321.63	-14.06	16.25	22.97	31.59
SEP. 2025	120	320.62	-13.38	19.91	21.14	36.71
OCT. 2025	124	300.45	-3.08	79.70	19.63	35.32
NOV. 2025	120	281.17	3.04	78.16	25.60	7.94
DEC. 2025	102	274.22	-3.50	74.80	24.51	11.75
JAN. 2026	97	248.21	-7.88	38.46	31.01	-21.09
FEB. 2026	58	273.38	11.03	15.92	20.30	22.63
MAR. 2026	120	279.03	-6.38	55.32	15.07	47.19
APR. 2026	110	271.21	-8.02	42.56	19.34	30.74
MAY 2026	124	295.15	-6.30	58.20	17.00	43.61
JUN. 2026	118	317.57	-12.67	23.29	21.91	33.64
(*) Mean diff. margin = $100 * (1 - (\text{mean diff. in \%} / \text{mean diff. req. in \%}))$ with mean diff. in % = $100 * \text{Mean diff} / \text{Mean DLI}$ and mean diff. req. = 5 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = $100 * (1 - (\text{SD in \%} / \text{SD req. in \%}))$ with SD in % = $100 * \text{SD} / \text{Mean DLI}$ with SD req. in % = 10% Same comment as for Mean diff. Margin.						

Table 29: AHL DLI quality results from JUL. 2025 to JUN. 2026.

Comments:

The AHL DLI product performs as expected the last half year and is within target requirement for all months, except a higher standard deviation in January, which is still within the threshold requirement.

5.3.2. SSI quality

SSI products are constituted of the geostationary products (GOES-East, Meteosat 0°, Meteosat Indian Ocean) and polar ones (Atlantic High Latitude). SSI values are required to have the following accuracy when compared to land pyranometer measurements:

- monthly relative mean difference less than 10 %,
- monthly difference standard deviation less than 30 %.

The match-up data base the statistics are based on is continuously enriched, so that, for the same period, results may evolve depending on the date when the statistics were calculated.

5.3.2.1. *Meteosat 0° SSI (OSI-304-a) quality*

The stations used for quality assessment of the geostationary SSI and DLI products are shown in the following map.

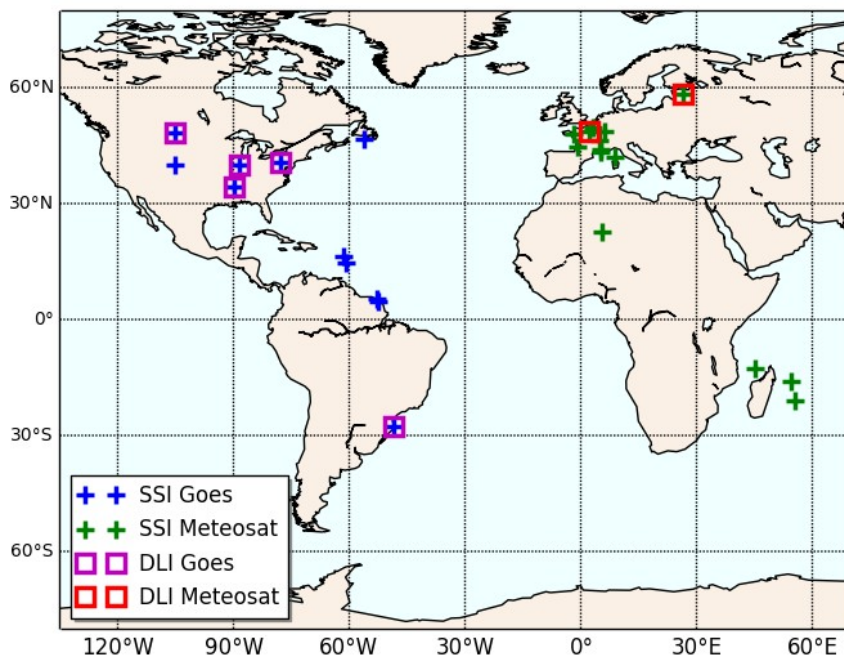


Figure 34: Map of the measurement stations used to validate SSI and DLI from geostationary satellites

The following table provides the hourly and daily SSI quality results over the reporting period.

Meteosat 0° hourly SSI quality results from JUL. 2025 to JUN. 2026								
Month	Number of cases	Mean SSI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)	Median	RSD
JUL. 2025	4222	475.96	5.11	89.26	71.16	50.16	-1.42	42.44
AUG. 2025	3926	474.06	5.95	87.45	56.92	59.98	1.57	41.68
SEP. 2025	3459	415.10	6.52	84.29	60.90	51.10	2.19	44.70
OCT. 2025	3171	384.96	8.95	76.75	62.06	46.26	5.19	38.41
NOV. 2025	2530	352.91	13.32	62.26	74.79	29.36	7.24	43.68
DEC. 2025	2518	333.74	11.25	66.29	74.85	25.24	8.67	36.48
JAN. 2026	2669	309.24	16.50	46.64	76.73	17.29	14.69	41.36
FEB. 2026	3020	371.53	37.87	-1.93	96.39	13.52	23.12	49.21
MAR. 2026	3375	423.51	4.72	88.86	65.29	48.61	10.61	47.24
APR. 2026	3246	474.75	-3.34	92.96	60.04	57.84	-0.22	38.74
MAY 2026	4056	443.43	-18.44	58.42	63.44	52.31	-12.17	44.14
JUN. 2026	3901	491.44	-7.20	85.35	58.62	60.24	-2.38	39.87
(*) Mean diff. margin = 100 * (1 - (mean diff. in %/ mean diff. req. in %)) with mean diff. in % = 100*Mean diff/Mean SSI and mean diff. req. = 10 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = 100 * (1 - (SD in %/ SD req. in %)) with SD in % = 100*SD/Mean SSI with SD req. in % = 30% Same comment as for Mean diff. Margin.								

Table 30: Meteosat 0° hourly SSI quality results from JUL. 2025 to JUN. 2026.

(*) Mean diff. margin = $100 * (1 - (|\text{mean diff. in \%} / \text{mean diff. req. in \%}|))$
with mean diff. in % = $100 * \text{Mean diff} / \text{Mean SSI}$
and mean diff. req. = 10 %

100 refers then to a perfect product, 0 to a quality just as required, without margin.
A negative result indicates that the product quality does not fulfil the requirement.

() SD margin = $100 * (1 - (\text{SD in \%} / \text{SD req. in \%}))$**
with SD in % = $100 * \text{SD} / \text{Mean SSI}$
with SD req. in % = 30%

Same comment as for Mean diff. Margin.

Table 31: Meteosat 0° daily SSI quality results from JUL. 2025 to JUN. 2026.

Comments:

The statistics are good and within the requirement except for the mean difference margin SSI hourly which is negative in February 2026. For winter months, it is typical that the result is worse than for the summer months.

5.3.2.2. *Meteosat Indian Ocean SSI (OSI-IO-SSI)*

On the 23 June 2022, Meteosat-9, in position 45.5° East, replaced Meteosat-8 (in position 41.5° East since 2016) for the Indian Ocean Data Coverage (IODC). Surface Solar Irradiance from Meteosat-8 (in position 41.5 east) is processed as a demonstration product since 2016.

The following table provides the hourly and daily SSI quality results over the reporting period.

Meteosat Indian Ocean hourly SSI quality results from JUL. 2025 to JUN. 2026								
Month	Number of cases	Mean SSI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)	Median	RSD
JUL. 2025	4222	475.32	4.53	90.47	74.76	47.57	-0.44	45.73
AUG. 2025	3941	469.69	3.08	93.44	62.25	55.82	2.30	43.52
SEP. 2025	3459	414.12	5.46	86.82	65.53	47.25	3.23	48.35
OCT. 2025	3183	388.37	13.54	65.14	68.10	41.55	8.71	44.83
NOV. 2025	2564	368.21	29.54	19.77	74.56	32.50	20.29	52.09
DEC. 2025	2518	354.12	31.57	10.85	79.64	25.03	23.16	59.67
JAN. 2026	2647	327.74	34.55	-5.42	81.40	17.21	27.66	58.12
FEB. 2026	3021	390.69	57.14	-46.25	100.68	14.10	37.03	72.76
MAR. 2026	3380	424.63	6.20	85.40	77.12	39.46	11.32	56.61
APR. 2026	3682	482.23	2.03	95.79	67.01	53.68	4.38	41.87
MAY 2026	4064	449.57	-11.45	74.53	69.29	48.62	-6.54	46.42
JUN. 2026	3917	493.37	-3.61	92.68	59.83	59.58	-0.82	38.26
(*) Mean diff. margin = 100 * (1 - (mean diff. in %/ mean diff. req. in %)) with mean diff. in % = 100*Mean diff/Mean SSI and mean diff. req. = 10 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = 100 * (1 - (SD in %/ SD req. in %)) with SD in % = 100*SD/Mean SSI with SD req. in % = 30% Same comment as for Mean diff. Margin.								

Table 32: Meteosat Indian Ocean hourly SSI quality results from JUL. 2025 to JUN. 2026.

Meteosat Indian Ocean daily SSI quality results from JUL. 2025 to JUN. 2026								
Month	Number of cases	Mean SSI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)	Median	RSD
JUL. 2025	350	241.94	1.54	93.63	23.92	67.04	0.36	15.01
AUG. 2025	341	228.82	0.47	97.95	18.27	73.39	-0.11	15.30
SEP. 2025	330	183.61	1.46	92.05	17.79	67.70	-0.14	16.50
OCT. 2025	341	154.03	4.51	70.72	16.75	63.75	2.35	12.70
NOV. 2025	316	127.14	9.53	25.04	18.13	52.47	6.79	14.57
DEC. 2025	340	113.21	9.59	15.29	16.94	50.12	8.69	14.78
JAN. 2026	336	108.12	10.83	-0.17	19.08	41.18	9.46	17.45
FEB. 2026	335	150.15	21.39	-42.46	28.50	36.73	14.43	22.22
MAR. 2026	339	179.31	1.92	89.29	18.03	66.48	2.82	17.25
APR. 2026	329	227.85	-0.12	99.47	16.40	76.01	0.64	13.46
MAY 2026	341	226.67	-6.36	71.94	19.58	71.21	-4.93	15.86
JUN. 2026	320	255.81	-2.44	90.46	16.60	78.37	-1.43	14.13
(*) Mean diff. margin = 100 * (1 - (mean diff. in %/ mean diff. req. in %)) with mean diff. in % = 100*Mean diff./Mean SSI and mean diff. req. = 10 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = 100 * (1 - (SD in %/ SD req. in %)) with SD in % = 100*SD/Mean SSI with SD req. in % = 30% Same comment as for Mean diff. Margin.								

Table 33: Meteosat Indian Ocean daily SSI quality results from JUL. 2025 to JUN. 2026.

Comments:

The statistics are good and within the requirement except for the mean difference margin which is negative in January and February 2026. For winter months, it is typical that the result is worse than for the summer months.

5.3.2.3. AHL SSI (OSI-302-c) quality

The pyranometer stations used for quality assessment of the AHL SSI and DLI products are shown in the following table.

Station	StId	Latitude	Longitude		Status
Apelsvoll	11500	60.70°N	10.87°E	SSI	In use, under examination due to shadow effects.
Løken	23500	61.12°N	9.07°E	SSI	Not used currently
Landvik	38140	58.33°N	8.52°E	SSI	In use
Særheim	44300	58.78°N	5.68°E	SSI	Not used currently
Fureneset	56420	61.30°N	5.05°E	SSI	In use
Tjøtta	76530	65.83°N	12.43°E	SSI	Not used currently
Holt	90400	69.67°N	18.93°E	SSI	In use
Bjørnøya	99710	74.52°N	19.02°E	SSI, DLI	In use, Arctic station with snow on ground much of the year.
Hopen	99720	76.51°N	25.01°E	SSI, DLI	Not in use currently, Arctic station with snow on ground much of the year. Strong shadow effect by mountains.
Jan_Mayen	99950	70.93°N	-8.67°E	SSI, DLI	In use, Arctic station with snow on ground much of the year, volcanic ash deteriorates instruments in periods.
Schleswig	10035	54.53°N	9.55°E	SSI, DLI	In use
Hamburg-Fuhlsbuettel	10147	53.63°N	9.99°E	SSI, DLI	Not used currently
Jokioinen	1201	60.81°N	23.501°E	SSI, DLI	In use. DLI was added to this station during the spring of 2016.
Sodankylä	7501	67.37°N	26.63°E	SSI, DLI	In use, temporarily disabled for SSI validation. Problems likely to be connected with snow on ground.
Kiruna	02045	67.85°N	20.41°E	SSI, DLI	Not used currently
Visby	02091	57.68°N	18.35°E	SSI, DLI	Not used currently
Svenska Högarna	02492	59.45°N	19.51°E	SSI, DLI	Not used currently

Table 34: Validation stations that may be used for AHL radiative fluxes quality assessment.

The stations listed in table 34 are owned and operated by the Norwegian Meteorological Institute, University of Bergen, Geophysical Institute, Bioforsk, Finnish Meteorological Institute (FMI), Swedish Meteorological Institute (SMHI) and Deutscher Wetterdienst (DWD). Data from DWD and SMHI are extracted from WMO GTS, data from the other sources are received by email or through other direct connections. More stations are being considered for inclusion.

The pyranometer stations used for validation of the AHL SSI product are the stations listed in table 34. There are some differences in the stations used for SSI validation compared to DLI. The reason for this is partly the observation programme at stations, but also that SSI validation is more sensitive to station characteristics than DLI.

A report from OSI SAF about the validation data used for validating the high latitude surface radiative flux products is available here: <https://osisaf-hl.met.no/other-docs>

The following table provides the AHL SSI quality results over the reporting period.

AHL SSI quality results from JUL. 2025 to JUN. 2026						
Month	Number of cases	Mean SSI in Wm ⁻²	Mean diff. in Wm ⁻²	Mean diff. margin in % (*)	SD in Wm ⁻²	SD margin in % (**)
JUL. 2025	216	204.36	6.90	65.05	41.58	29.80
AUG. 2025	217	142.61	4.35	68.52	25.40	38.76
SEP. 2025	210	75.60	2.08	71.71	17.73	19.60
OCT. 2025	164	35.20	-2.95	22.72	9.15	20.04
NOV. 2025	78	13.12	-3.98	-132.69	5.69	-10.81
DEC. 2025	0	NA	NA	NA	NA	NA
JAN. 2026	37	8.98	-4.27	-222.11	5.63	-41.51
FEB. 2026	96	23.99	-4.50	-58.07	14.53	-70.03
MAR. 2026	209	56.85	-3.92	35.49	24.01	-31.68
APR. 2026	205	135.76	4.59	65.03	39.36	-0.02
MAY 2026	217	186.42	3.37	81.58	40.95	25.44
JUN. 2026	204	201.27	1.19	94.07	29.65	50.61
(*) Mean diff. margin = $100 * (1 - (\text{mean diff. in \%} / \text{mean diff. req. in \%}))$ with mean diff. in % = $100 * \text{Mean diff} / \text{Mean SSI}$ and mean diff. req. = 10 % 100 refers then to a perfect product, 0 to a quality just as required, without margin. A negative result indicates that the product quality does not fulfil the requirement. (**) SD margin = $100 * (1 - (\text{SD in \%} / \text{SD req. in \%}))$ with SD in % = $100 * \text{SD} / \text{Mean SSI}$ with SD req. in % = 30% Same comment as for Mean diff. Margin.						

Table 35: AHL SSI quality results from JUL. 2025 to JUN. 2026.

Comments:

For this reporting period the AHL SSI product behaves as usual: the validation results are within requirement for summer and autumn, but the results are outside the target requirement in darkest months November and January. No in situ data with sufficient quality were available for December.

5.4. Sea Ice quality

5.4.1. L2 PMW sea ice concentration (OSI-410-a) quality

The OSI-410-a sea ice concentration L2 product on satellite swath for SSMIS and AMSR2 instruments is delivered with separate product files for the SSMIS (F16, F17 and F18) and AMSR2 sensors. The product also includes uncertainty estimates and product quality flags.

The OSI SAF sea ice concentration product is validated against navigational ice charts, as these are believed to be the best independent source of reference data currently available. These navigational ice charts originate from the operational ice charting division at the National Ice Center (NIC) and from the Arctic Antarctic Research Institute (AARI). The NIC and AARI ice charts are primarily based on SAR imagery (such as Sentinel-1, RCM, Radarsat-2), but also thermal infrared and/or optical imagery from e.g. the AVHRR and MODIS sensors, when available and cloud-free.

The quality assessment results are shown separately for the four different sensor products; SSMIS F16, - F17, - F18 and AMSR2.

The requirements on the accuracy of the OSI-410-a ice concentration product are as follows: a *threshold* accuracy of 20%; a *target* accuracy of 10% and 15% for the Northern and Southern hemisphere, respectively; an *optimal* accuracy of 5%. For the quality assessment this means that the product is required to have as minimum an annual mean difference and standard deviation less than 10% ice concentration on the Northern hemisphere and less than 15% ice concentration on the Southern hemisphere.

For each ice chart concentration level the deviation between ice chart concentration and OSI SAF ice concentration is calculated. Afterwards the mean difference (bias) and standard deviation are calculated and reported for ice (100% ice concentration) and for water (0% ice concentration). We use conventional mean difference and standard deviations for all calculations.

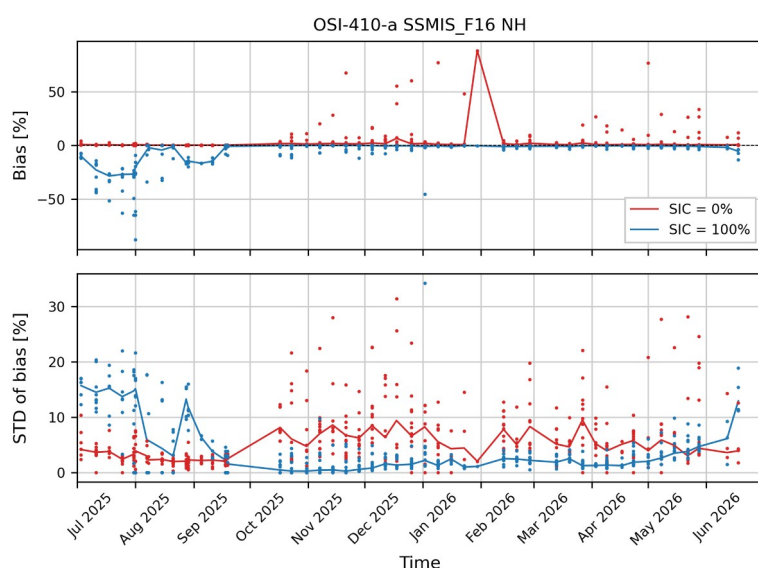


Figure 35: For OSI-410-a SSMIS F16 in the Northern hemisphere:

Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

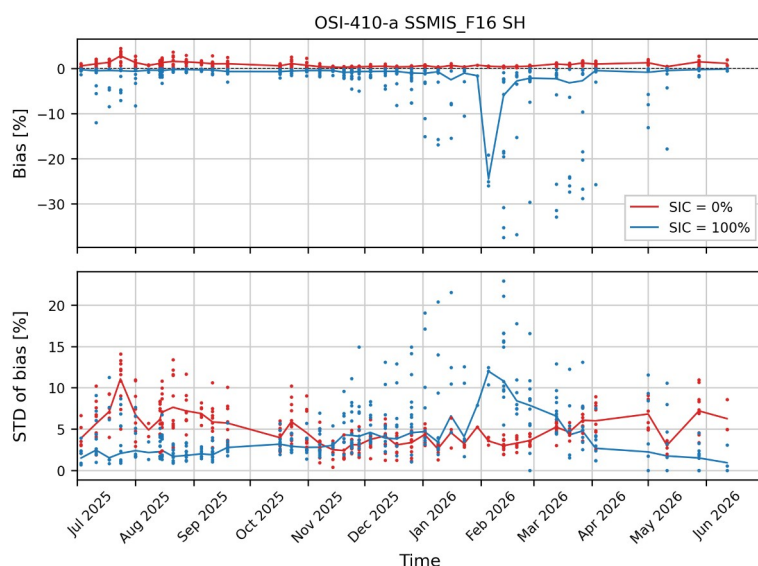


Figure 36: For OSI-410-a SSMIS F16 in the Southern hemisphere:

Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

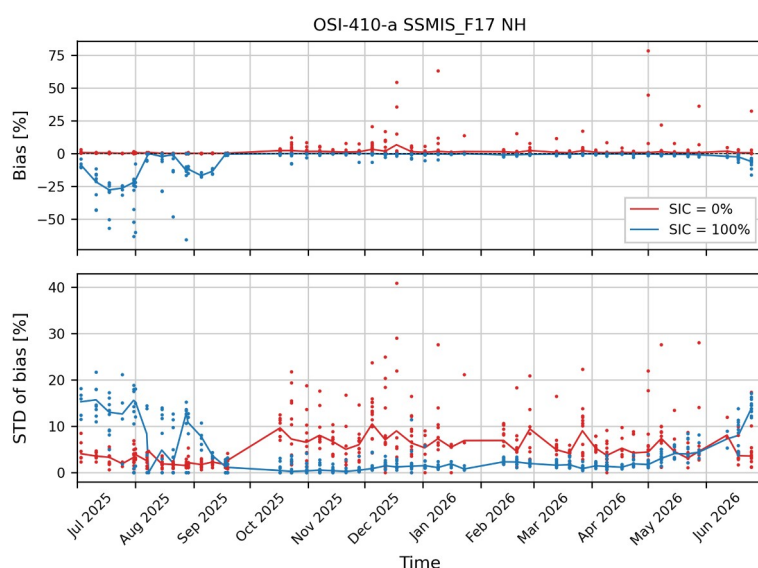


Figure 37: For OSI-410-a SSMIS F17 in the Northern hemisphere:

Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

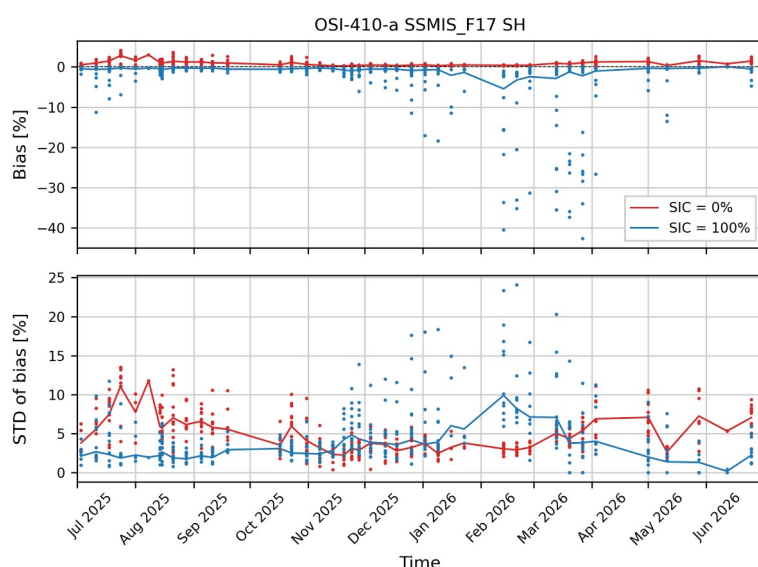


Figure 38: For OSI-410-a SSMIS F17 in the Southern hemisphere:

Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

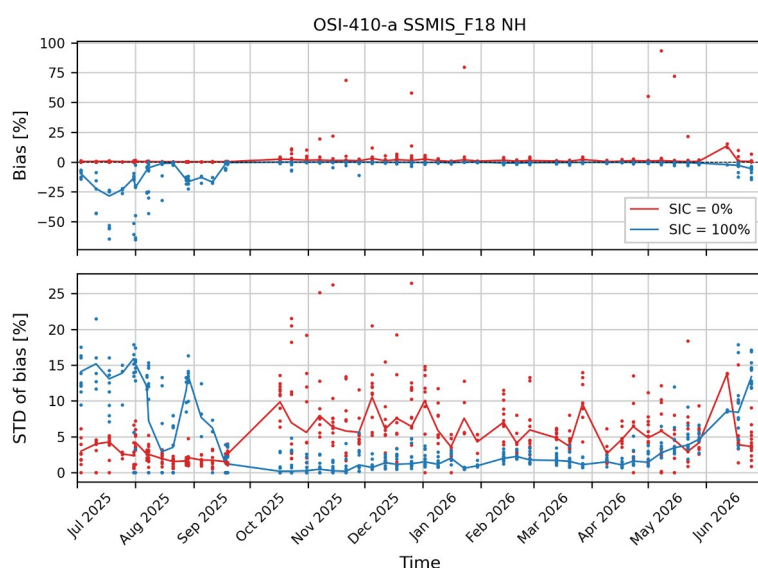


Figure 39: For OSI-410-a SSMIS F18 in the Northern hemisphere:

Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

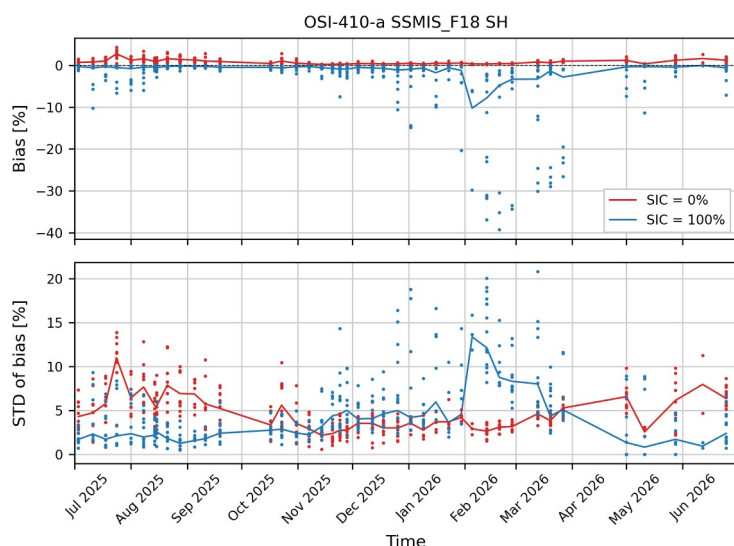


Figure 40: For OSI-410-a SSMIS F18 in the Southern hemisphere:Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

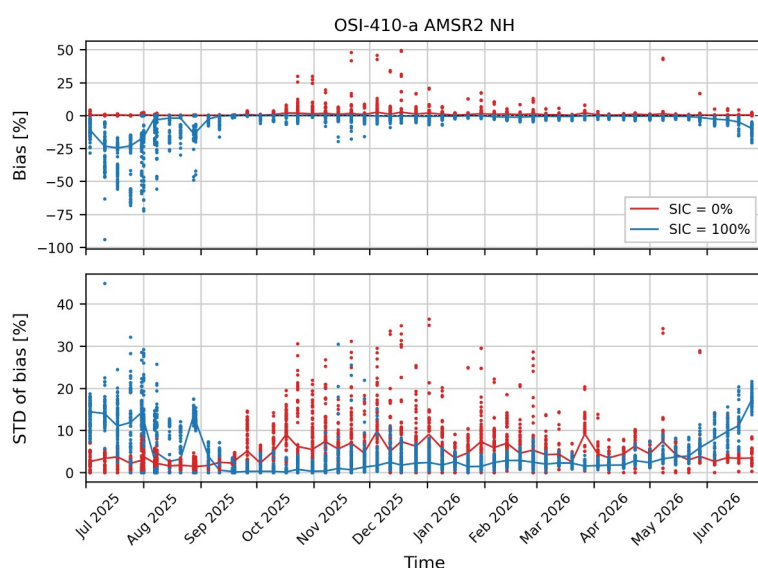


Figure 41: For OSI-410-a AMSR2, in the Northern hemisphere:

Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

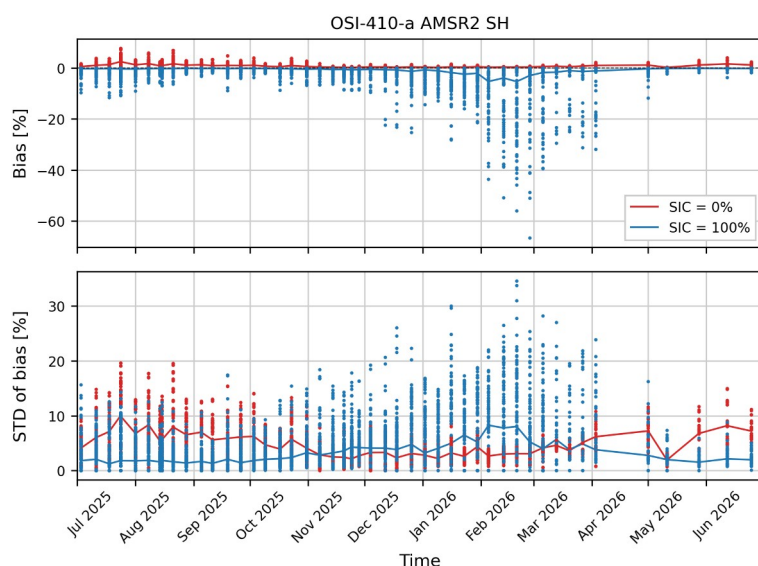


Figure 42: For OSI-410-a AMSR2, in the Southern hemisphere:

Top plot: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis.

Bottom plot: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice.

Average yearly bias and standard deviation on bias								
OSI-410-a	Northern hemisphere				Southern hemisphere			
Category	Ice		Water		Ice		Water	
Metric (%)	Bias	STD	Bias	STD	Bias	STD	Bias	STD
SSMIS F16	-4.74	4.43	2.85	4.84	-1.59	3.86	0.82	4.95
SSMIS F17	-4.29	4.40	1.09	5.03	-0.95	3.44	0.84	4.99
SSMIS F18	-4.41	4.66	1.18	4.95	-1.30	3.84	0.76	4.65
AMSR2	-3.47	4.22	0.72	4.49	-1.01	3.30	0.69	4.75

Comments:

All sensor products perform well in the Northern and Southern Hemisphere, where all mean differences are below the optimal accuracy of 5%, except for the STD for water of SSMIS F17 in the Northern Hemisphere, which is 0.03 percentage points above. In the Southern Hemisphere the sensor products are well below the optimal accuracy for the mean difference on for both categories.

5.4.2. L3 SSMIS sea ice concentration (OSI-401-d) quality

The OSI SAF sea ice concentration product is validated against navigational ice charts, as these are believed to be the best independent source of reference data currently available. These navigational ice charts originates from the operational ice charting divisions at DMI, MET Norway and National Ice Center (NIC). The ice charts are primarily based on SAR (Radarsat and Sentinel-1) data, together with AVHRR and MODIS data in several cases. The quality assessment results are shown separately for the three different sets of ice charts.

For the quality assessment at the Northern Hemisphere, performed twice a week, the concentration product is required to have a mean difference and standard deviation less than 10% ice concentration on an annual basis. For the weekly quality assessment at the Southern Hemisphere the concentration product is required to have a mean difference and standard deviation less than 15% ice concentration on an annual basis.

For each ice chart concentration level the deviation between ice chart concentration and OSI SAF ice concentration is calculated. Afterwards deviations are grouped into categories, i.e. $\pm 10\%$ and $\pm 20\%$. Furthermore the mean difference and standard deviation are calculated and reported for ice (100% ice concentration) and for water (0% ice concentration). We use conventional mean difference and standard deviations for all calculations.

In addition, statistics from manual evaluation (on the confidence level of the products) are shown as additional information. There is no requirement on these statistics. The error codes for the manual evaluation are shown below.

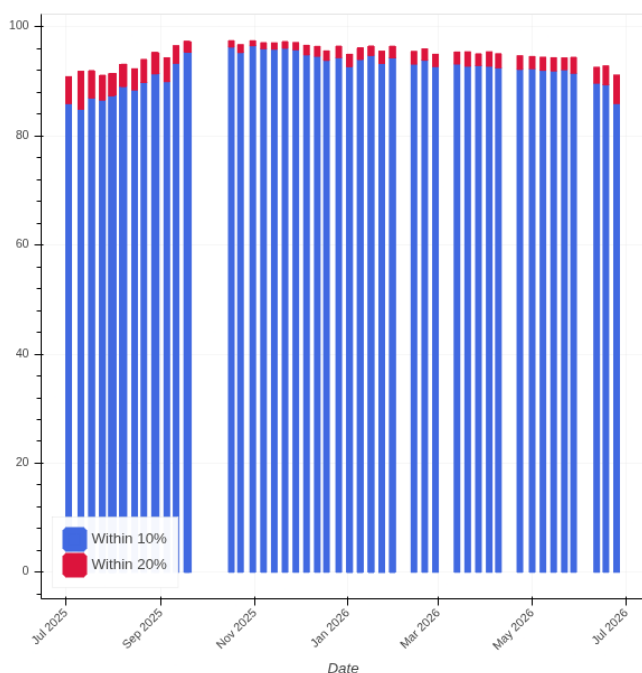


Figure 43: Comparison of ice concentrations from NIC ice analysis and the OSI SAF concentration product. Northern hemisphere. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/- 10%, and likewise for +/-20%.

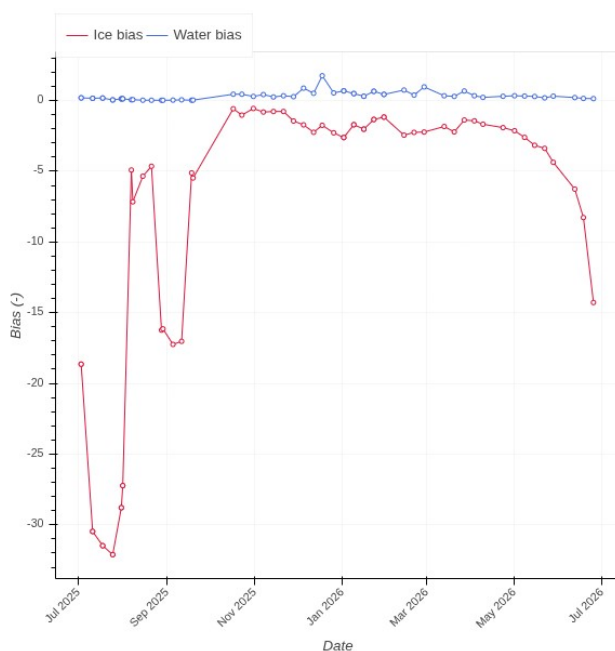


Figure 44: Difference between ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis. Northern hemisphere.

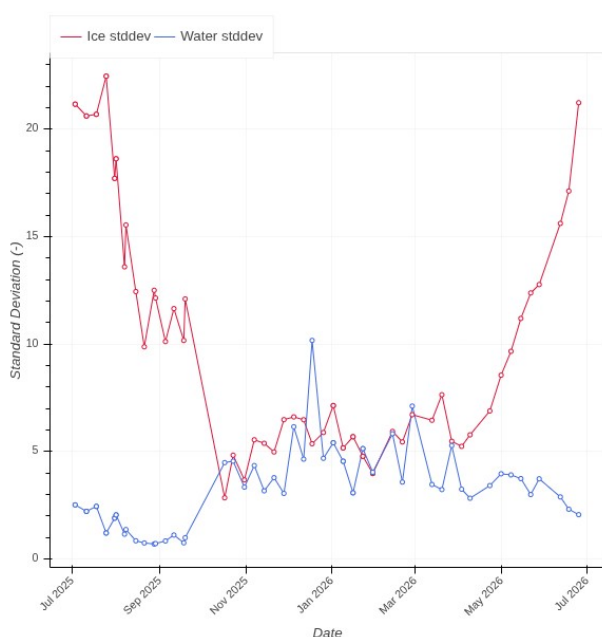


Figure 45: Standard deviation of the difference in ice concentrations from NIC ice analysis and OSI SAF concentration product for two categories: water and ice. Northern hemisphere.

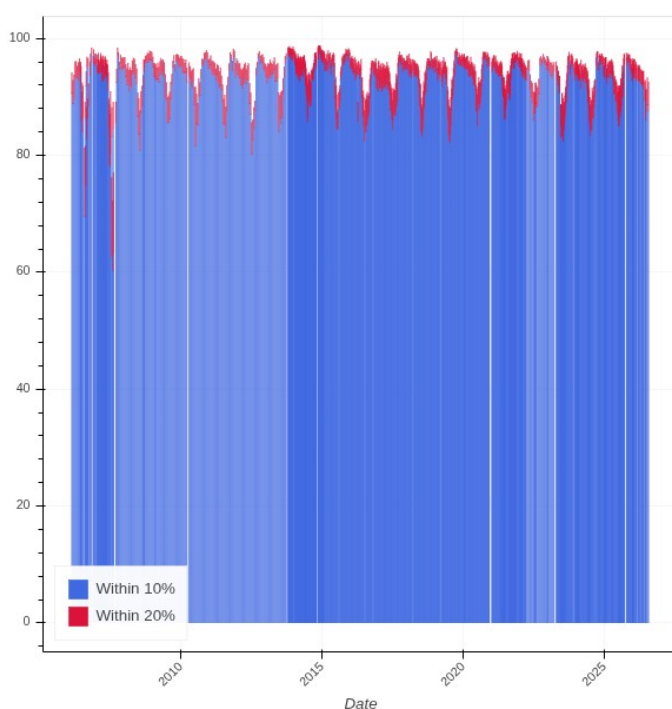


Figure 46: Multiyear variability. Comparison between ice concentrations from NIC ice analysis and the OSI SAF concentration product. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/- 10%, and likewise for +/-20%. Northern hemisphere.

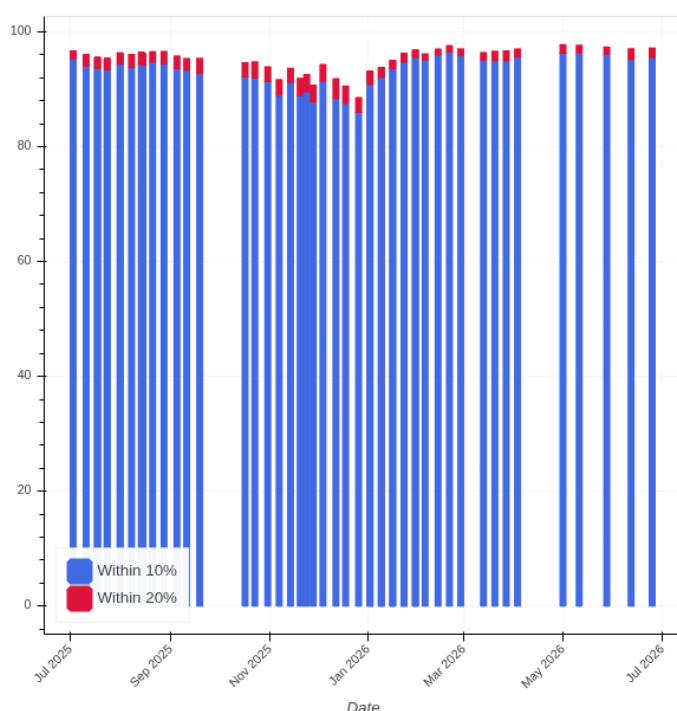


Figure 47: Comparison between ice concentrations from the NIC ice analysis and the OSI SAF concentration product. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/-10%, and likewise for +/-20%. Southern hemisphere.

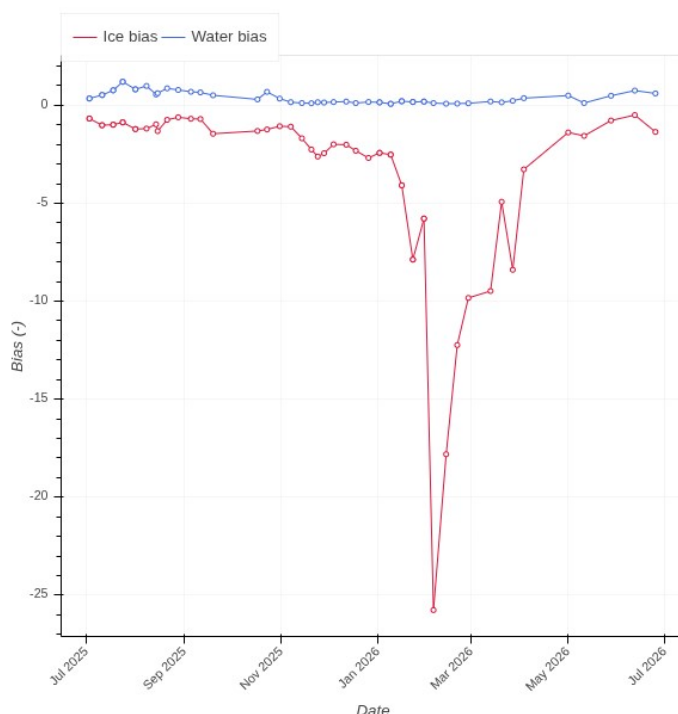


Figure 48: Difference between the ice concentrations from the NIC ice analysis and OSI SAF concentration product for two categories: water and ice. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis. Southern hemisphere.

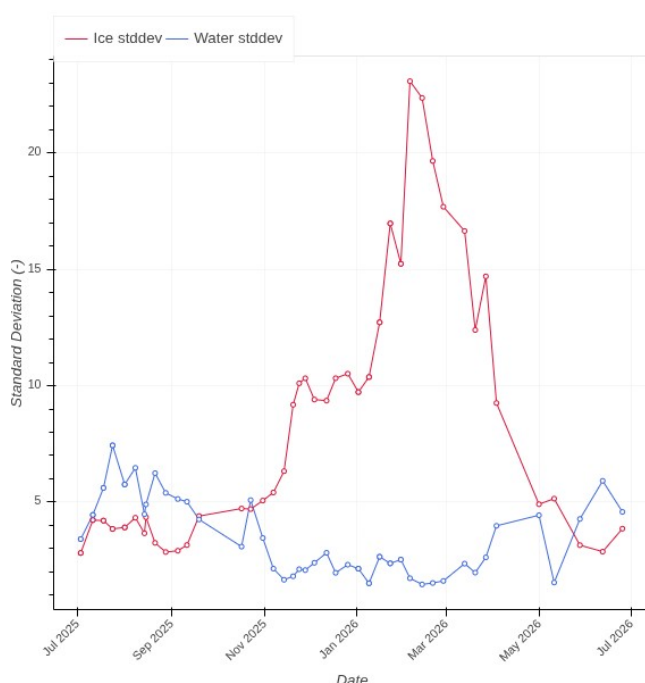


Figure 49: Standard deviation of the difference in ice concentrations from the NIC ice analysis and OSI SAF concentration product for two categories: water and ice. Southern hemisphere.

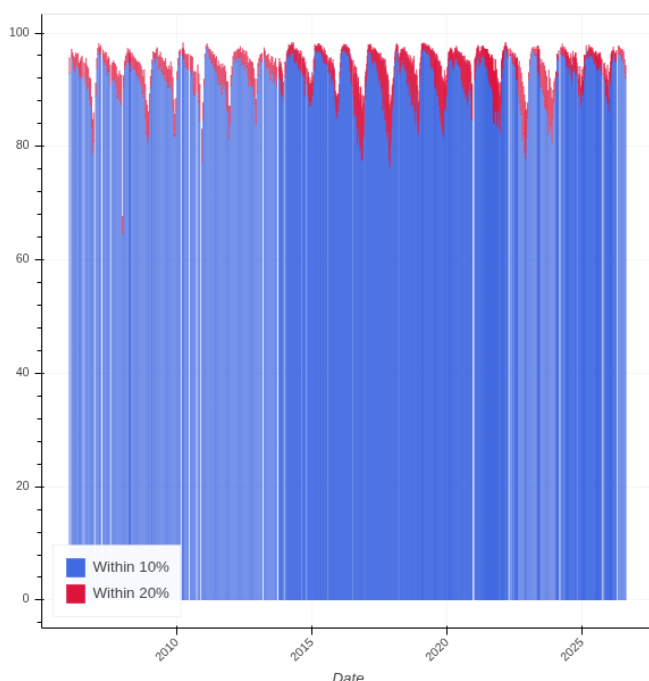


Figure 50: Multiyear variability. Comparison between ice concentrations from the NIC ice analysis and the OSI SAF concentration product. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/- 10%, and likewise for +/-20%. Southern hemisphere.

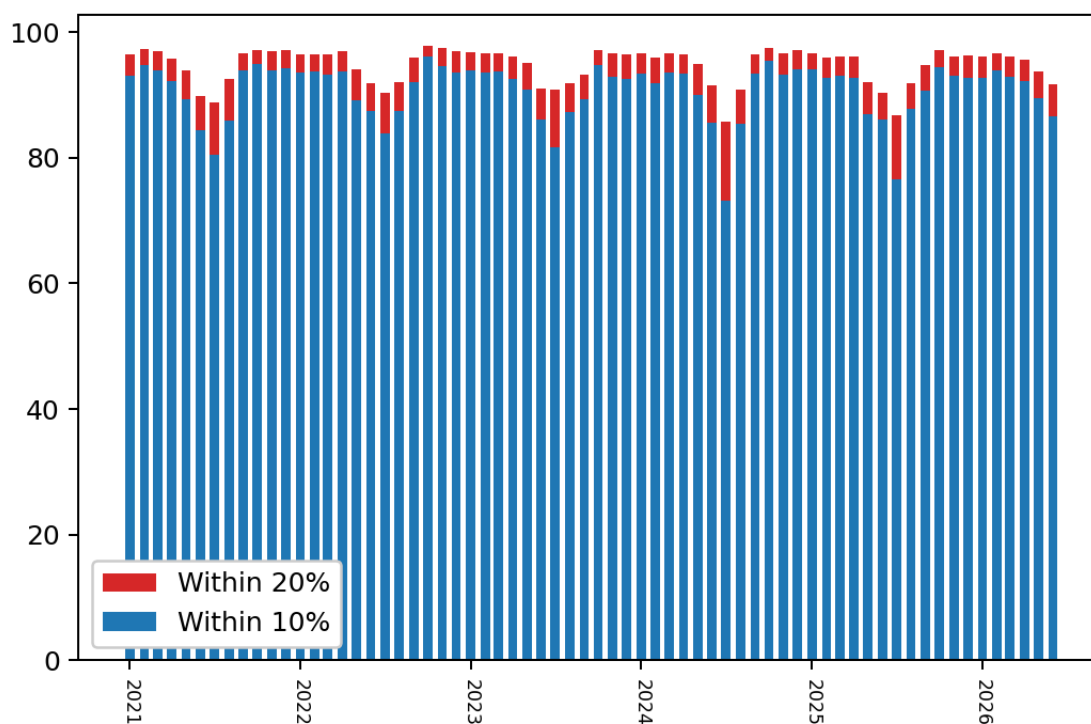


Figure 51: Comparison of ice concentrations from MET Norway Ice Service ice analysis and the OSI SAF concentration product. European Arctic region. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/- 10%, and likewise for +/-20%.

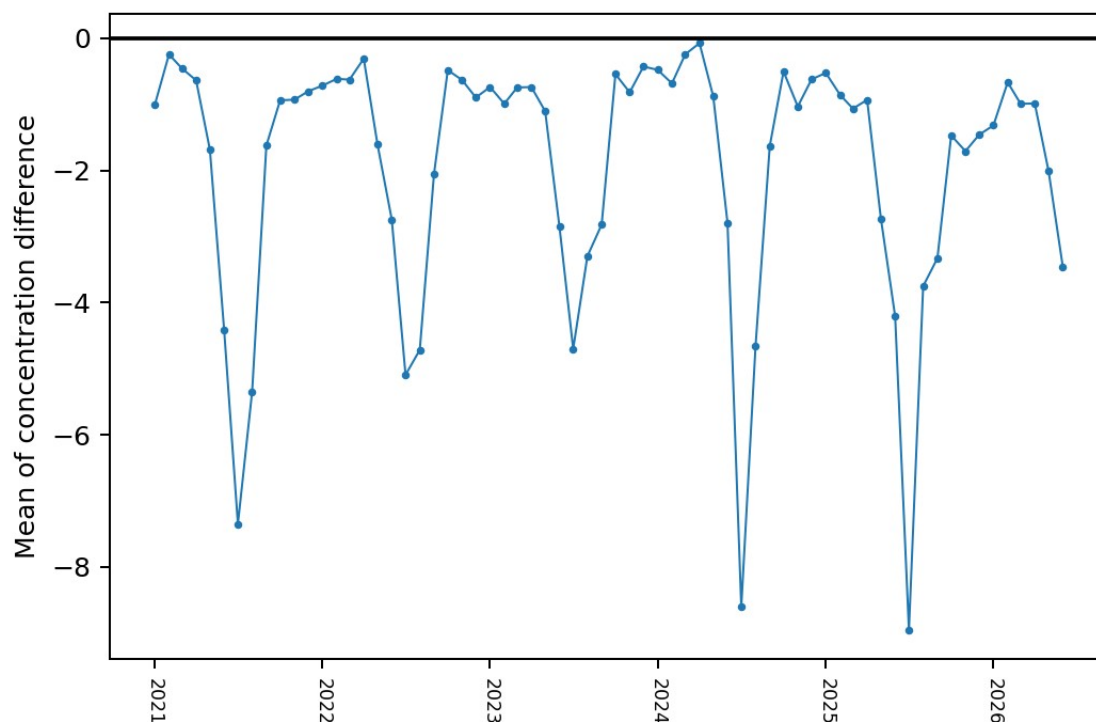


Figure 52: Difference between ice concentrations from MET Norway Ice Service ice analysis and OSI SAF concentration product. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis. European Arctic region.

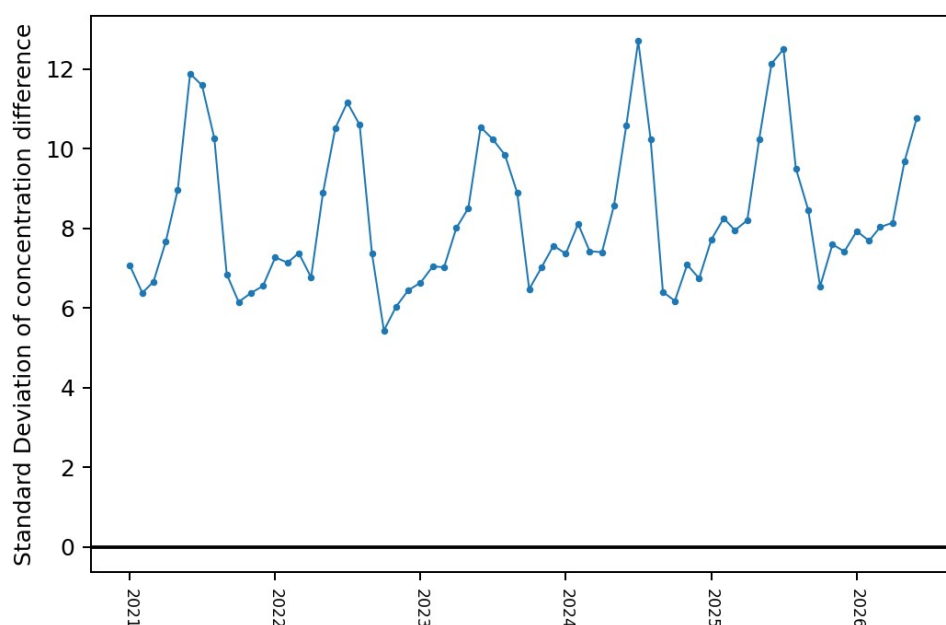


Figure 53: Standard deviation of the difference in ice concentrations from MET Norway Ice Service ice analysis and OSI SAF concentration product. European Arctic region.

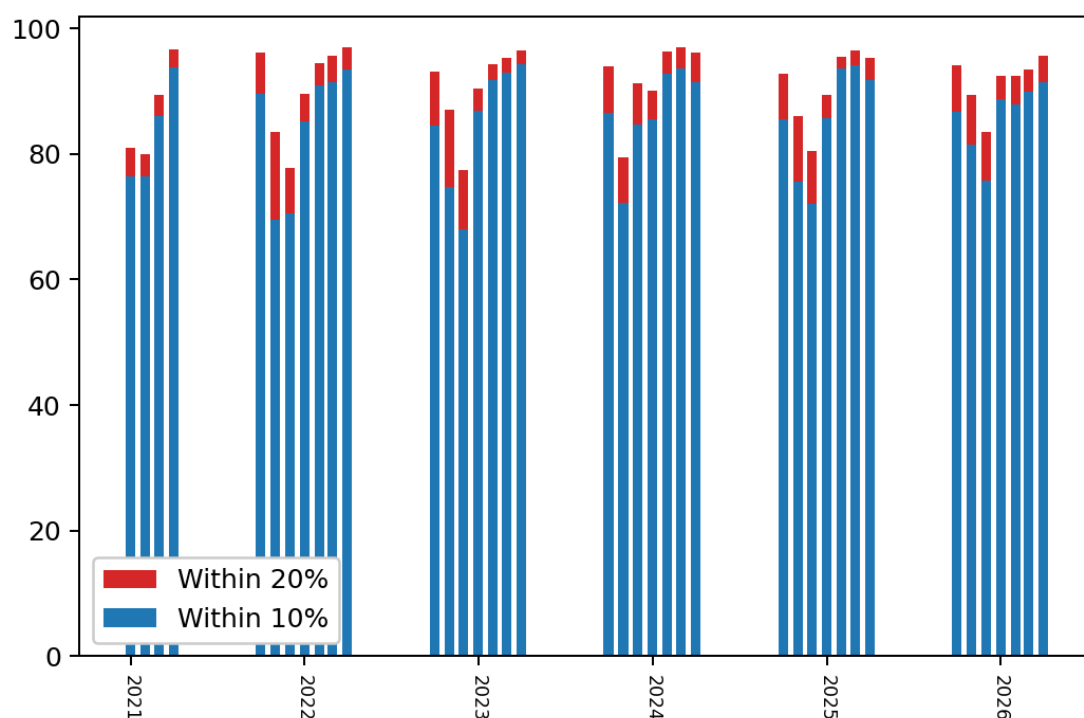


Figure 54: Comparison of ice concentrations from MET Norway Ice Service ice analysis and the OSI SAF concentration product. Southern hemisphere/Weddell Sea. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/- 10%, and likewise for +/-20%.

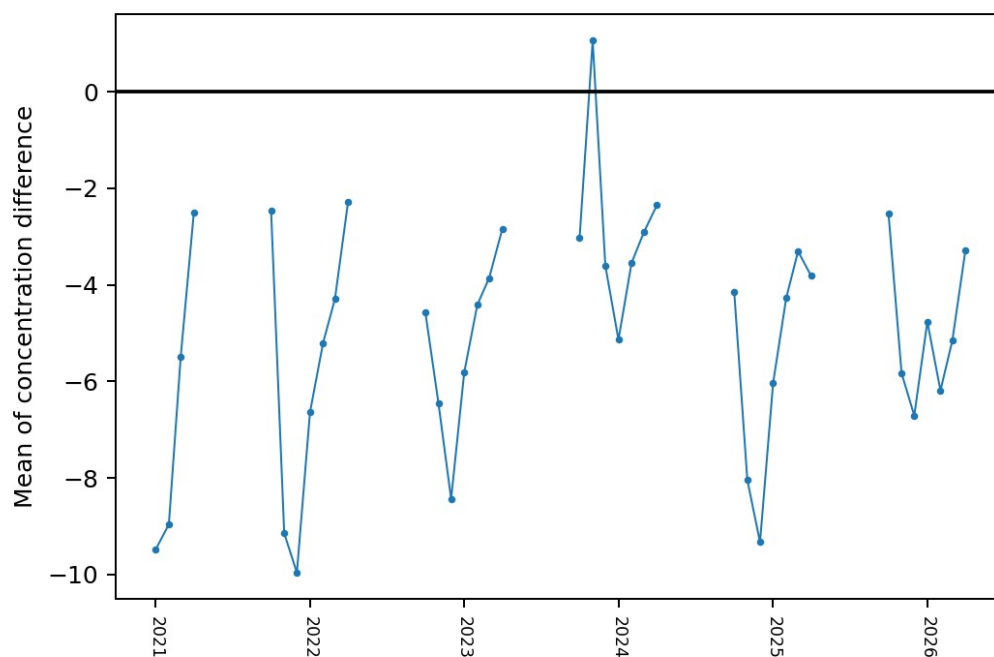


Figure 55: Difference between ice concentrations from MET Norway Ice Service ice analysis and OSI SAF concentration product. When the difference is below zero, the OSI SAF sea ice concentration has a lower estimate than the ice analysis. Southern hemisphere/Weddell Sea.

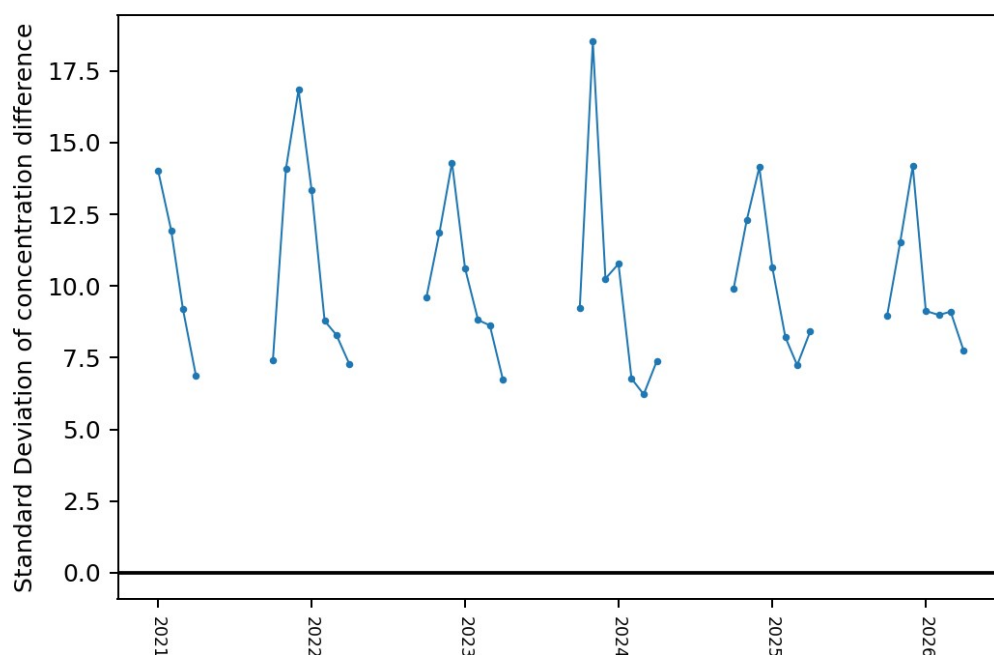


Figure 56: Standard deviation of the difference in ice concentrations from MET Norway Ice Service ice analysis and OSI SAF concentration product. Southern hemisphere/Weddell Sea.

Comments:

Figure 45 and Figure 49 provide the essential information on the compliance of the sea ice concentration product accuracy. showing the std. dev. of the difference in ice concentration between the OSI SAF product and the NIC ice analysis for NH and SH. respectively. Average yearly SD for the last year can be seen in the table just below. The product are within target accuracy of 15 % for the SH and 10 % for the NH.

Average yearly standard deviation		
	Average STD Ice	Average STD Water
Northern Hemisphere	6.291082	2.99008
Southern Hemisphere	8.461082	2.41260

5.4.3. L3 AMSR2 sea ice concentration (OSI-408-a) quality

The OSI-408-a Global Sea Ice concentration is based on AMSR2 data. Two ice concentration fields are computed: the primary on which is computed with the OSI SAF Hybrid Dynamic (OSHD) algorithm similar to the SSMIS Sea Ice Concentration (OSI-401-d) and a second which is computed using the Technical University of Denmark (TUD) algorithm which utilizes the high frequency channels. It is validated against ice charts as described under the previous section on Global SSMIS Sea Ice Concentration.

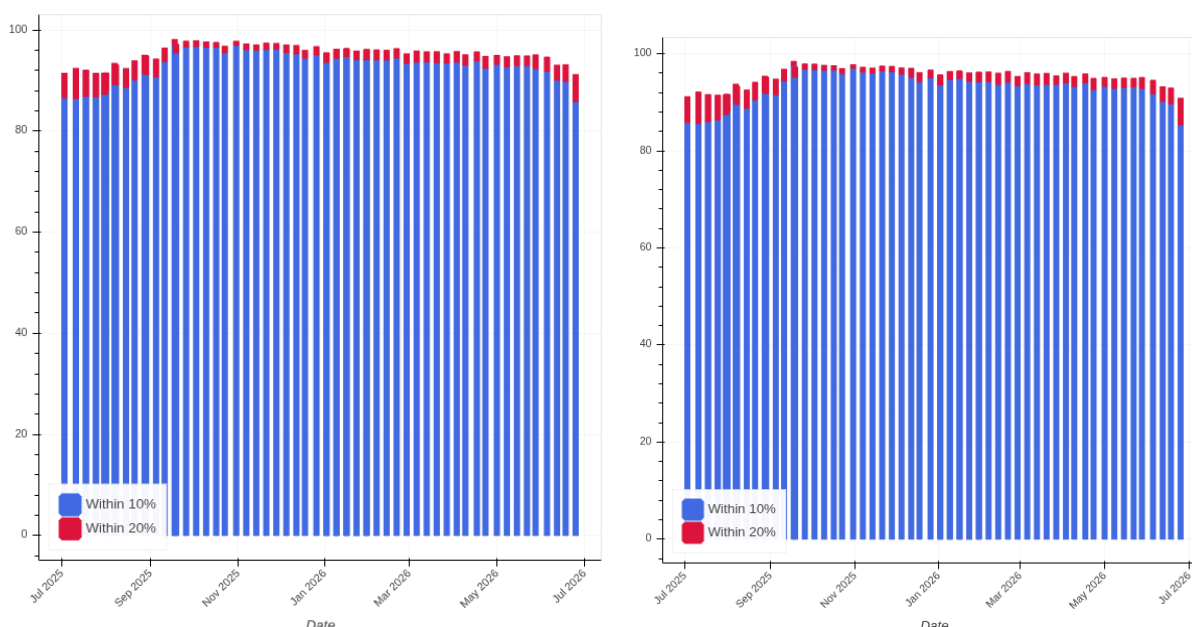


Figure 57: Comparison of ice concentrations from the NIC ice analysis and the OSI SAF AMSR2 concentration product based on OSHD algorithm to the left and based on TUD algorithm to the right. Northern hemisphere. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/- 10%, and likewise for +/-20%

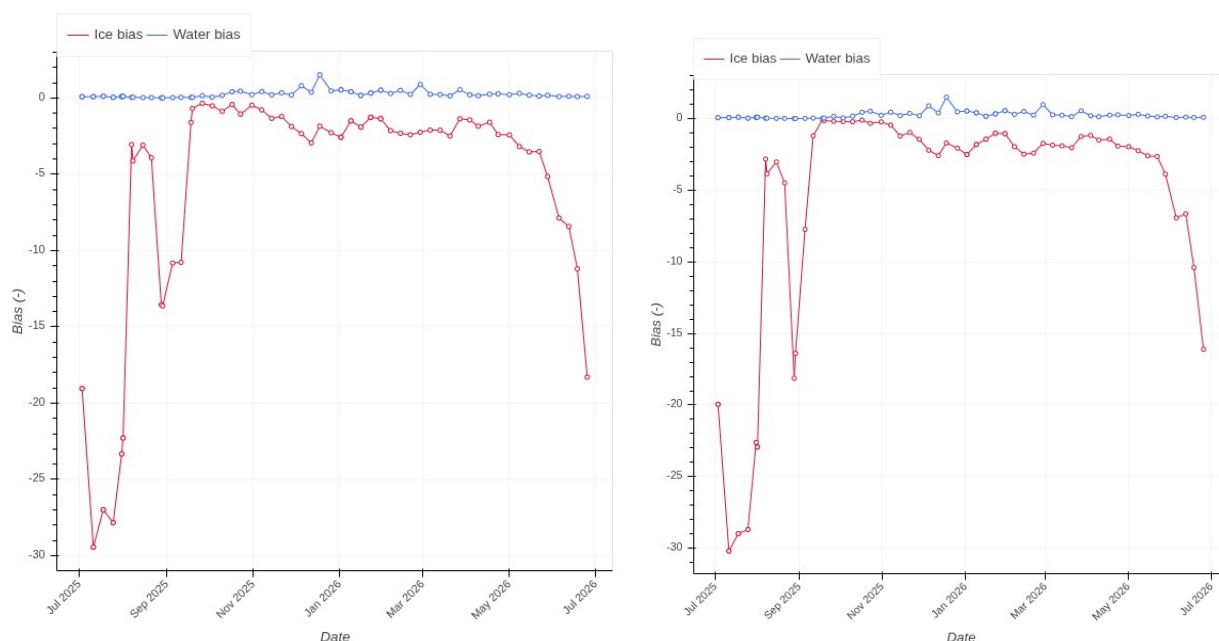


Figure 58: Difference between ice concentrations from the NIC ice analysis and OSI SAF AMSR2 concentration product based on OSHD algorithm to the left and based on TUD algorithm to the right for two categories: water and ice. Southern Hemisphere

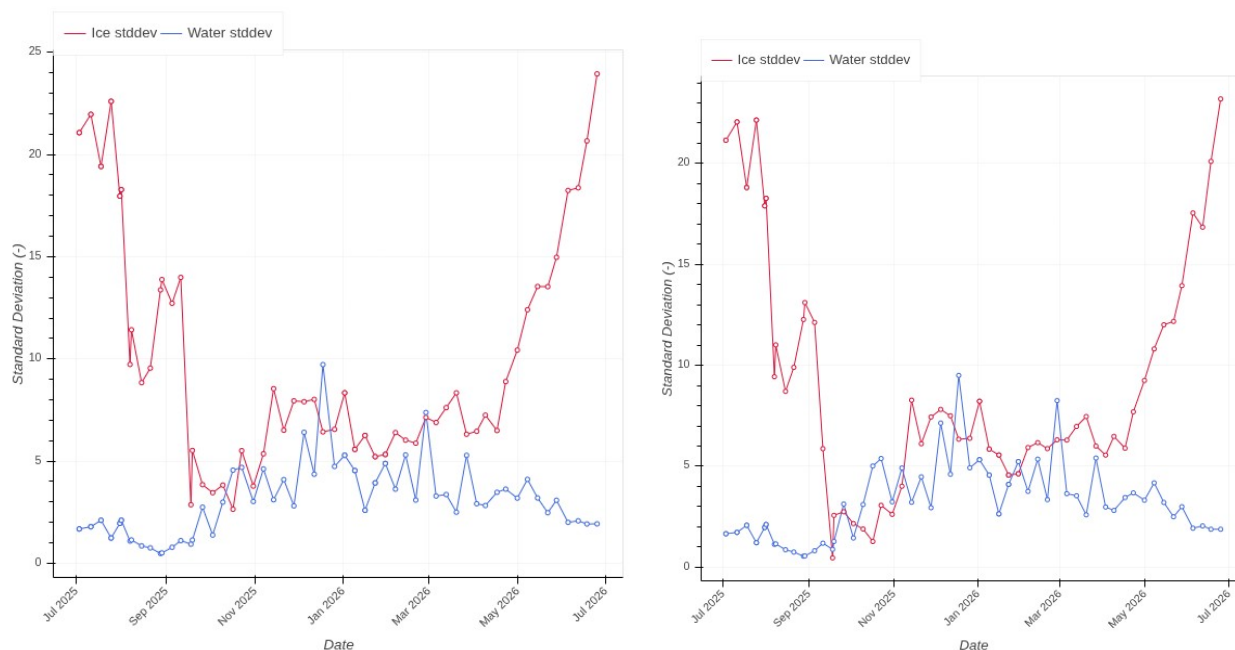


Figure 59: Standard deviation of the difference in ice concentrations from the NIC ice analysis and OSI SAF AMSR2 concentration product based on OSHD algorithm to the left and based on TUD algorithm to the right for two categories: water and, ice. Southern hemisphere.

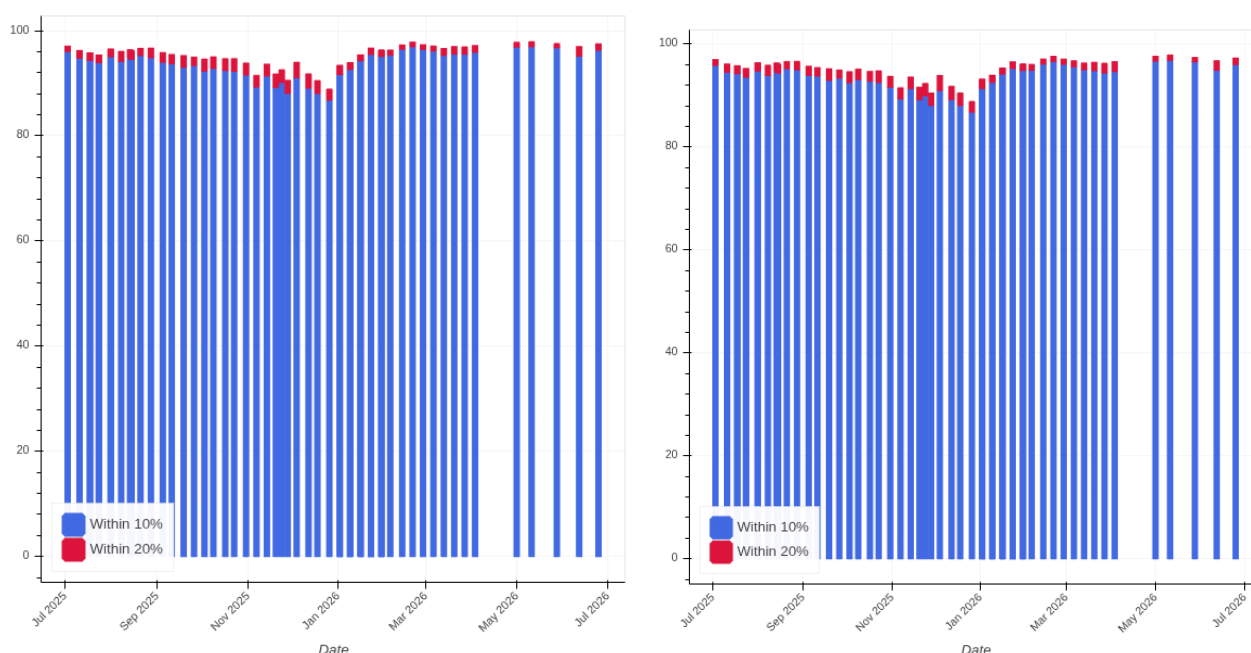


Figure 60: Comparison of ice concentrations from the NIC ice analysis and the OSI SAF AMSR2 concentration product based on OSHD algorithm to the left and based on TUD algorithm to the right. Southern hemisphere. 'Match +/- 10%' corresponds to those grid points where concentrations are within the range of +/- 10%, and likewise for +/-20%

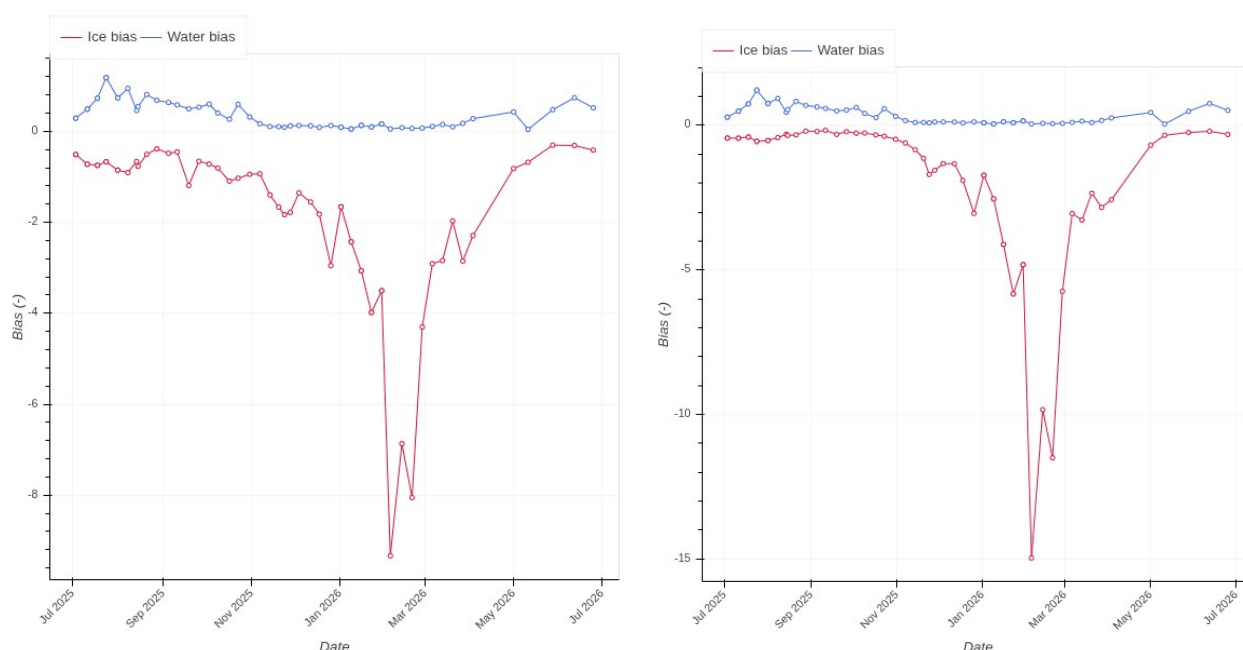


Figure 61: Difference between ice concentrations from the NIC ice analysis and OSI SAF AMSR2 concentration product based on OSHD algorithm to the left and based on TUD algorithm to the right for two categories: water and ice. Southern Hemisphere

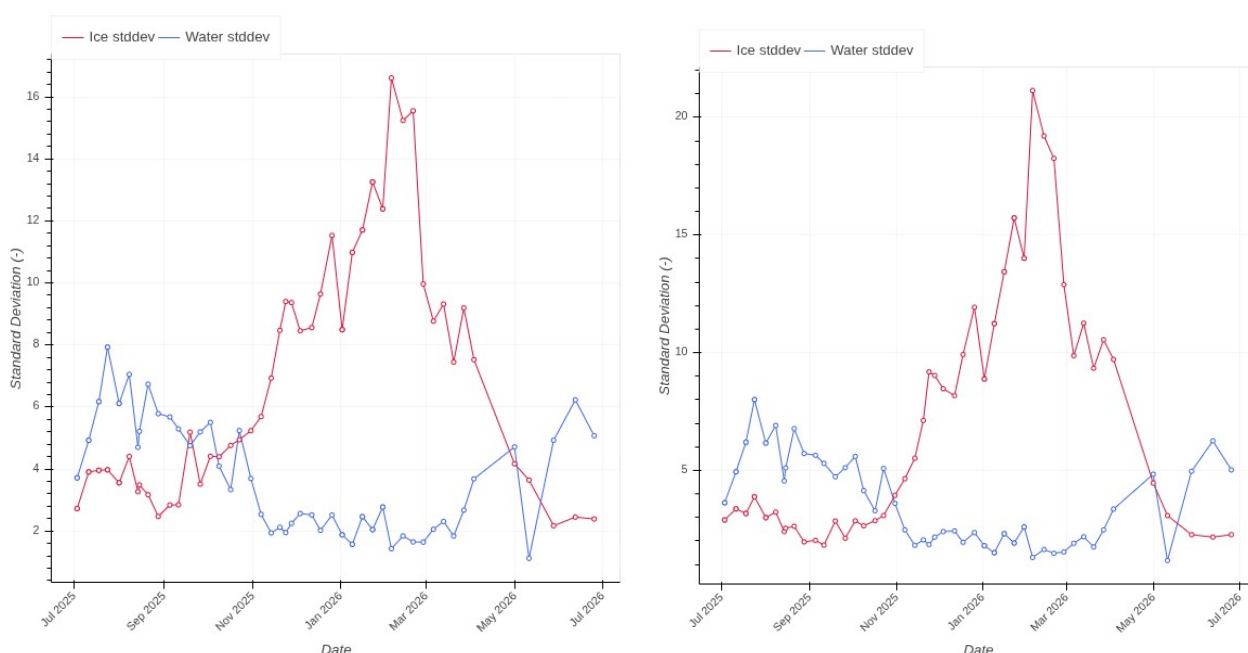


Figure 62: Standard deviation of the difference in ice concentrations from the Greenland overview charts made by DMI and OSI SAF AMSR2 concentration product based on OSHD algorithm to the left and based on TUD algorithm to the right for two categories: water and ice. Northern hemisphere.

Comments:

Figure 59 and Figure 62 provide the essential information on the compliance of the sea ice concentration product accuracy, showing the std. dev. of the difference in ice concentration between the OSI SAF product and the NIC ice analysis for NH and SH, respectively. Average yearly SD for the period can be seen in the table just below. The TUD algorithm product are within target accuracy of 10 % and 15 % for the NH and SH products, respectively. This is also the case for the OSHD algorithm product for Southern Hemisphere, however, for the NH hemisphere the product is just above the target, but within threshold accuracy.

Average yearly standard deviation			
		Average SD Ice	Average SD Water
OSHD algorithm	NH	10.686313	3.027313
	SH	6.970123	3.737842
TUD algorithm	NH	9.909478	3.136418
	SH	7.133333	3.666123

5.4.4. Sea ice edge (OSI-402-d) quality

The OSI SAF sea ice edge product is validated against navigational ice charts, as explained under the previous section on ice concentration.

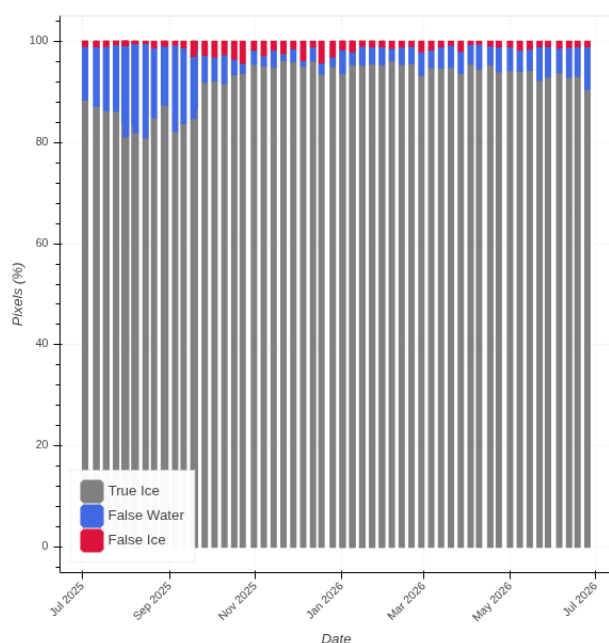


Figure 63: Comparison between the NIC ice analysis and the OSI SAF sea ice edge product. Northern hemisphere. 'False Water' means grid points where the OSI SAF product indicated water and the DMI ice analysis indicated ice and vice versa for the 'False Ice' category.

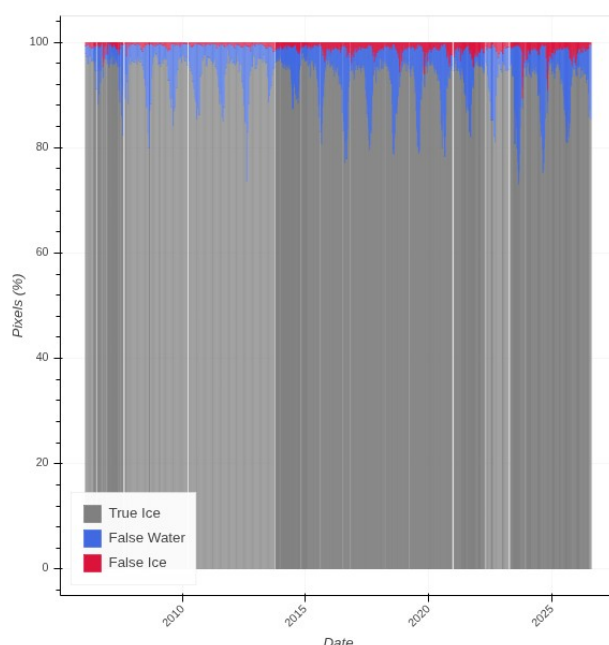


Figure 64: Multiyear variability. Comparison between the NIC ice analysis and the OSI SAF sea ice edge product. Northern hemisphere. 'False Water' means grid points where the OSI SAF product indicated water and the DMI ice analysis indicated ice and vice versa for the 'False Ice' category.

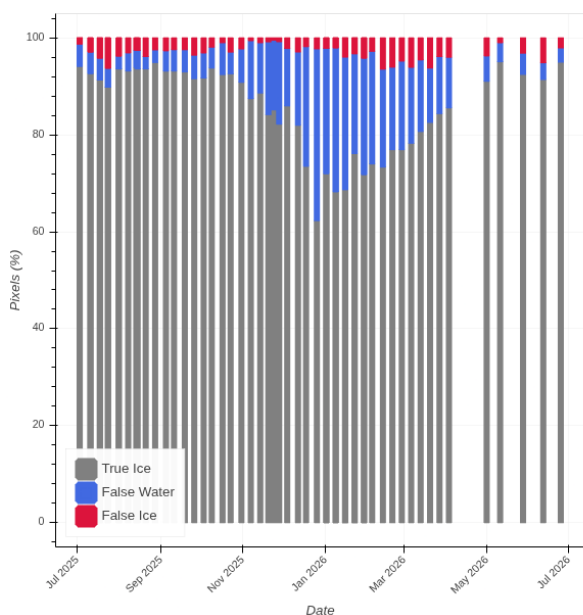


Figure 65: Comparison between the NIC ice analysis and the OSI SAF sea ice edge product. Southern hemisphere. 'False Water' means grid points where the OSI SAF product indicated water and the NIC ice analysis indicated ice and vice versa for the 'False Ice' category.

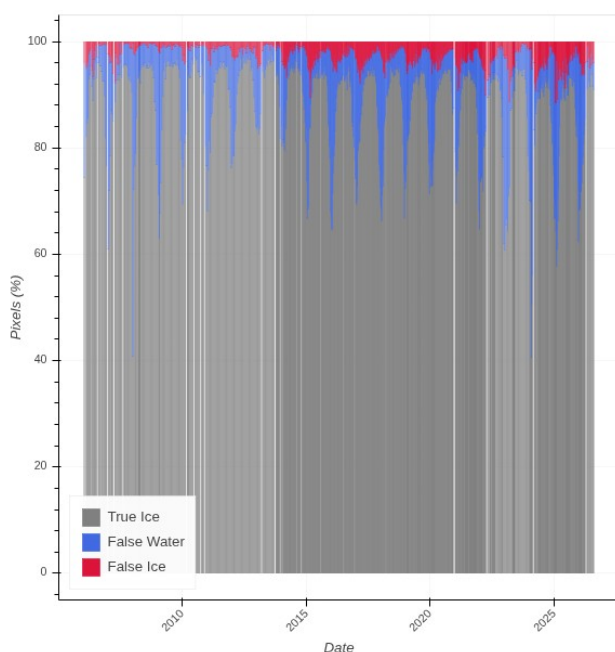


Figure 66: Multiyear variability. Comparison between the NIC ice analysis and the OSI SAF sea ice edge product. Southern hemisphere. 'False Water' means grid points where the OSI SAF product indicated water and the NIC ice analysis indicated ice and vice versa for the 'False Ice' category.

	True ice %	False water %	False ice %	Mean dist between edges	Number compared
JUL. 2025	92.379088	6.211851	1.409061	22.152035	1922703
AUG. 2025	95.009969	4.15874	0.831291	15.648809	2733204
SEP. 2025	95.900529	3.243172	0.856299	15.720835	2898553
OCT. 2025	97.211254	1.766037	1.022709	10.991866	3349315
NOV. 2025	96.662498	2.060013	1.277489	10.207197	2655011
DEC. 2025	96.726467	1.599896	1.673637	10.498991	2497658
JAN. 2026	97.516584	1.633079	0.850337	9.600944	2747681
FEB. 2026	97.71746	1.43117	0.851369	9.069203	2580012
MAR. 2026	97.124765	1.996749	0.878486	11.166187	2835553
APR. 2026	97.320889	1.809969	0.869142	9.69834	2451841
MAY 2026	95.695778	3.266499	1.037724	14.358223	2172024
JUN. 2026	94.067598	5.002198	0.930204	13.388533	2700887

Table 36: NH from JUL.2025 to JUN. 2026.

	True ice %	False water %	False ice %	Mean dist between edges	Number compared
JUL. 2025	NA	NA	NA	NA	0
AUG. 2025	NA	NA	NA	NA	0
SEP. 2025	NA	NA	NA	NA	0
OCT. 2025	98.5016	0.98448	0.513919	40.50286	702746
NOV. 2025	96.751213	2.815499	0.433288	45.40235	778256
DEC. 2025	90.250619	7.784288	1.965093	40.788871	850304
JAN. 2026	92.786255	5.457707	1.756038	30.671159	413911
FEB. 2026	93.239526	5.758103	1.002372	24.525433	372323
MAR. 2026	94.215338	4.21592	1.568742	17.580865	489175
APR. 2026	96.021798	1.924088	2.054114	18.112041	349103
MAY 2026	NA	NA	NA	NA	0
JUN. 2026	NA	NA	NA	NA	0

Table 37: SH from JUL.2025 to JUN. 2026.

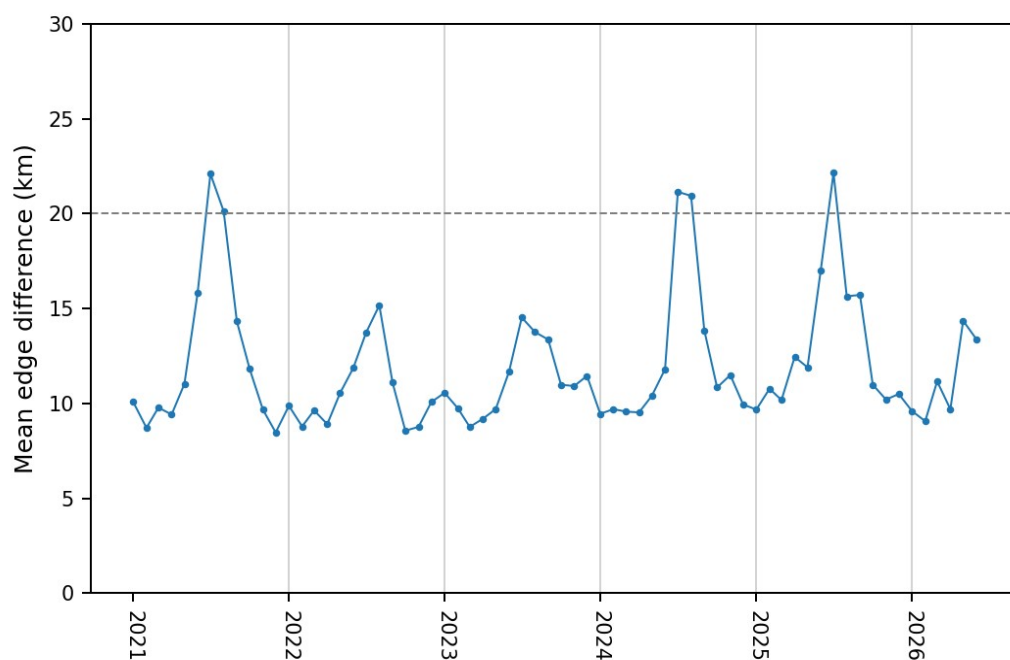


Figure 67: Mean edge difference between the MET Norway ice chart analysis and the OSI SAF sea ice edge product. European Arctic region.

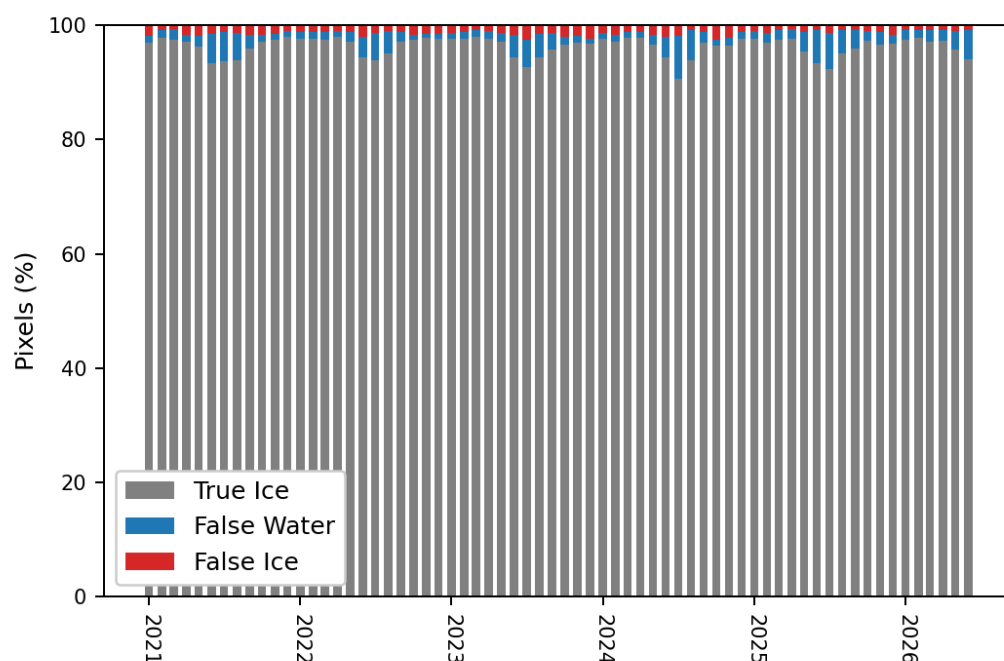


Figure 68: Comparison between the MET Norway ice chart analysis and the OSI SAF sea ice edge product. European Arctic region. 'False Water' means grid points where the OSI SAF product indicated water and the MET Norway ice chart analysis indicated ice and vice versa for the 'False Ice' category.

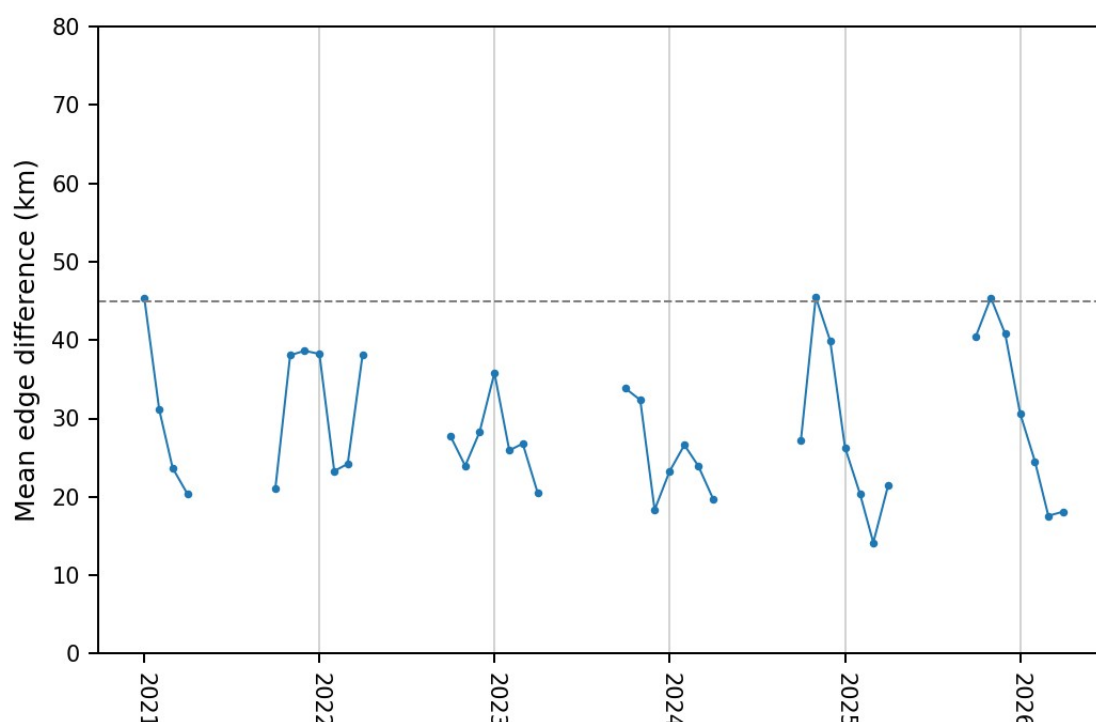


Figure 69: Mean edge difference between the MET Norway ice chart analysis and the OSI SAF sea ice edge product. Weddell Sea region.

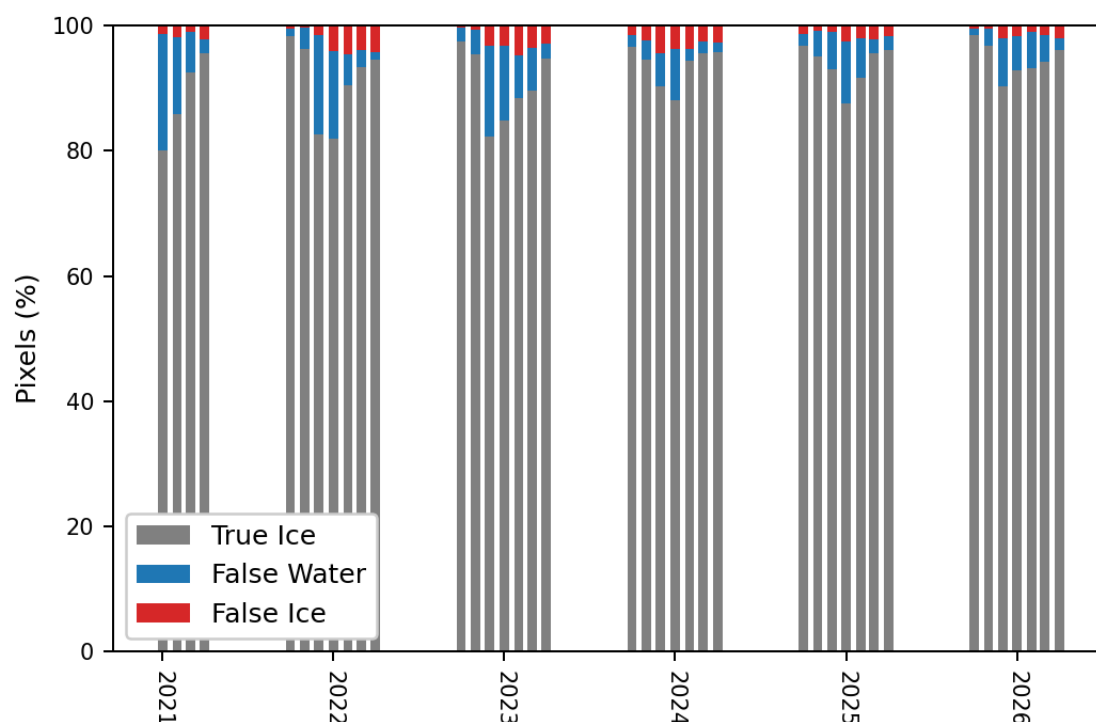


Figure 70: Comparison between the MET Norway ice chart analysis and the OSI SAF sea ice edge product. Weddell Sea region. 'False Water' means grid points where the OSI SAF product indicated water and the MET Norway ice chart analysis indicated ice and vice versa for the 'False Ice' category.

Comments:

The yearly averaged edge difference for the Northern Hemisphere for the recent 12 months from July 2025 - June 2026 is 12.7 km and the overall target accuracy requirement of 20 km edge difference per year is therefore met. It is worth noting that in July 2025, the individual monthly edge difference is higher than this at 22.2 km.

The yearly averaged requirement edge difference for the Southern Hemisphere for the seven months with available ice charts between July 2025 - June 2026 is 31.1 km, which is below the target accuracy requirement of 45 km edge difference per year, and therefore meets the requirement. The month of November 2025 has an individual monthly edge difference which is slightly higher at 45.4 km.

5.4.5. Sea ice type (OSI-403-d) quality

The sea ice type quality assessment is done as a monitoring of the monthly variation of the multi year ice area coverage, as presented in the table below. The monthly standard deviation (STD) in the difference from the running mean of the multi-year ice (MYI) area coverage shall be below 100.000km² to meet the target accuracy requirement.

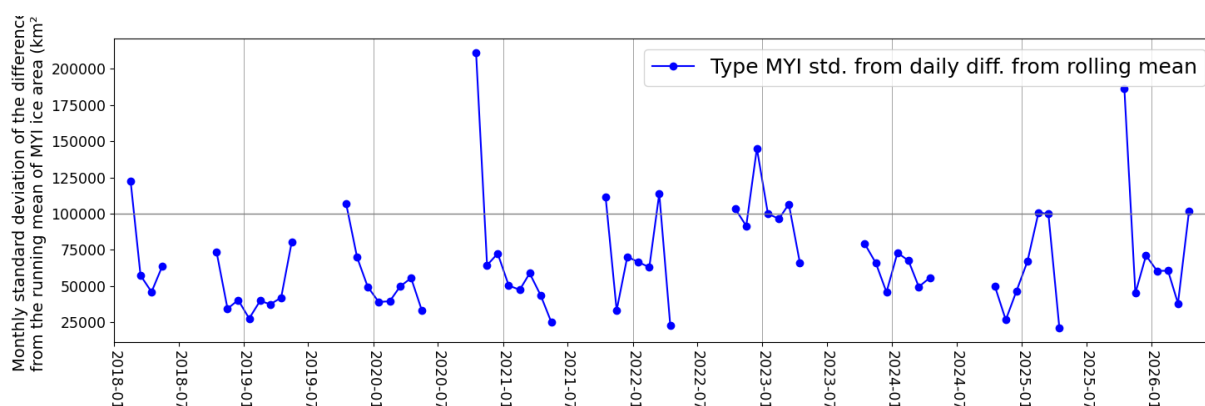


Figure 71: Monitoring of NH sea ice type quality by comparing the multiyear ice coverage with the 11-days running mean, from 2018 to 2026.

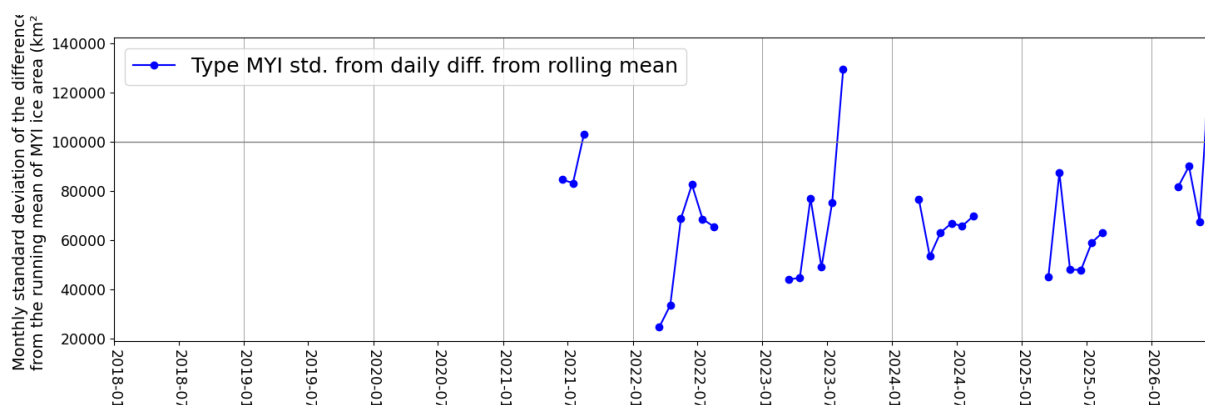


Figure 72: Monitoring of SH sea ice type quality by comparing the multiyear ice coverage with the 11-days running mean, from 2018 to 2026.

	Stddev wrt running mean (km ²)	Mean MYI coverage (km ²)
JUL. 2025	NA	NA
AUG. 2025	NA	NA
SEP. 2025	NA	NA
OCT. 2025	186113	2325945
NOV. 2025	45143	2858350
DEC. 2025	71133	2843333
JAN. 2026	60592	2892428
FEB. 2026	60641	2717155
MAR. 2026	38183	2538995
APR. 2026	101484	2595635
MAY 2026	NA	NA
JUN. 2026	NA	NA

Table 38: NH from JUL.2025 to JUN. 2026.

	Stddev wrt running mean (km ²)	Mean MYI coverage (km ²)
JUL. 2025	59084	1134934
AUG. 2025	63250	1048641
SEP. 2025	NA	NA
OCT. 2025	NA	NA
NOV. 2025	NA	NA
DEC. 2025	NA	NA
JAN. 2026	NA	NA
FEB. 2026	NA	NA
MAR. 2026	81630	637757
APR. 2026	90064	643763
MAY 2026	67695	655764
JUN. 2026	136734	858875

Table 39: SH from JUL.2025 to JUN. 2026.

Comments:

For the Northern Hemisphere the sea ice type MYI coverage variability shows that all months within the past year have values within the requirement of 100000 km² except for April 2026, where this requirement is exceeded very slightly (by 1500 km²), and October 2025. In October 2025, a Warm Air Intrusion occurred near the beginning of the month and caused some days of poor retrieval, resulting in a very high variability of 186000 km².

For the Southern Hemisphere all months within the past year have values well below the requirement of 100000 km², except for June 2026, where the variability is 137000 km². This is also determined to be likely due to a Warm Air Intrusion.

5.4.6. Sea ice emissivity (OSI-404-b) quality

The previous approach to assess the quality of the near-50 GHz sea ice emissivity was based on the comparison of the product emissivity to the 50.3 GHz and 52.8 GHz vertically polarized surface emissivity (which is the same at these two frequencies and called validation emissivity in this section) at an incidence angle at 50 degrees. The update on this approach to get the validation

emissivity has been made by obtaining the alternative emissivity only from 50.3 GHz and adjusting the incident angle (from 50 to 53.1 degrees) and polarization (from vertical to horizontal) for better physically sound comparison between product and validation emissivities. This updated method is described in detail in ATBD, PUM, and validation report. Although the product emissivity covers all incidence angles from nadir to 60 degrees, the validation is done at 53.10 degrees because the validation emissivity is derived from measurements at 53.1 degrees. The validation emissivity is calculated from NWP data and SSMIS satellite data. Both the OSI SAF product emissivity and the validation emissivity cover the entire northern and southern hemisphere sea ice cover, including all ice types and seasons.

Comments:

As reported in earlier half-year reports, the SSMIS observations at 50 GHz, which are mandatory inputs for generating reference data for the validation, have not been available from any of the operational DMSP satellites (F16, F17, and F18) since mid-April 2023. The cause of this problem is the degradation of the aging SSMIS sensors, as confirmed by the U.S. National Oceanic and Atmospheric Administration (NOAA) and Department of Defense (DoD). Therefore, proper validation efforts cannot currently be carried out. This issue can be resolved once the Microwave Imager (MWI) onboard Metop-SG becomes operational, potentially also improving the current validation process.

In parallel, considering that the primary application of the emissivity product is to simulate observations from atmospheric sounders (e.g., AMSU-A), an enhanced validation framework based on RTTOV is currently being developed as part of an ongoing visiting scientist activity. The activity is progressing as planned and is already producing results that can form the basis of the new validation framework. This framework is expected to eventually replace the current temporary validation approach.

5.4.7. Low resolution sea ice drift (OSI-405-d) quality

Quality assessment dataset

Quality assessment is performed by collocation of the drift vectors with the trajectories of in situ drifters. Those drifting objects are generally buoys (e.g. the Ice Tethered Profilers) or ice camps (e.g. the Russian manned stations) that report their position at typically hourly intervals. Those trajectories are generally made available in near-real-time or at the end of the mission onto the ice. Position records are recorded either via the GPS (e.g. those of the ITPs) or the Argos Doppler-shift system (those of the IABP). GPS positions are very precise (< 50 m) while those obtained by Argos have worse accuracy (approx. 350 m for 'high quality' records) and are thus not used in our reporting.

A nearest-neighbor approach is implemented for the collocation, and any collocation pair whose distance between the product and the buoy is larger than 30 km or the mismatch at start time of the drift is more than 3 hours is discarded. The duration of the drifts must also match within 1 hour.

Reported statistics

Because of a denser atmosphere and surface melting, the OSI-405 accuracy is worse during the summer melt period (from 1st May to 30th September in the Arctic).

The Low Resolution Sea Ice Drift product comprises several single-sensor (at present AMSR2 GW1 and ASCAT Metop-C) and a merged (or multi-sensor) products that are all processed and

distributed on a daily basis. The quality assessment and monitoring results are thus presented for the multi-sensor product (multi-oi) and a selection of the single-sensor ones.

Most of the ice-drifting buoys are deployed and live in the Arctic Ocean. Only few Southern Hemisphere buoys are available. Hence most of the validation results below are for the NH maps, including monthly statistics. For SH, the number of buoys is insufficient, and we report only statistics over a full year (last 12 months). SH statistics are reported for completeness as the number of buoys is generally not enough to quantitatively assess the performance of OSI-405-d against the target requirements.

Quality assessment statistics

In the following tables, quality assessment statistics for the NH and SH products using multi-sensor (multi-oi) and AMSR2 GW1 only are reported upon. In those tables, $X(Y)$ are the X and Y components of the drift vectors. $b()$ is the mean difference and $std()$ the standard deviation of the $\varepsilon(X) = X_{\text{prod}} - X_{\text{ref}}$. Columns A, B and corr are respectively the slope and intercept of the regression line between Prod and Ref data pairs and the Pearson correlation coefficient. N is the number of collocation data pairs. Maps are also included that show the repartition of ice-drifter data for the given period.

Validation drifters for multi-oi
NH (2026-01-01 -> 2026-06-30)

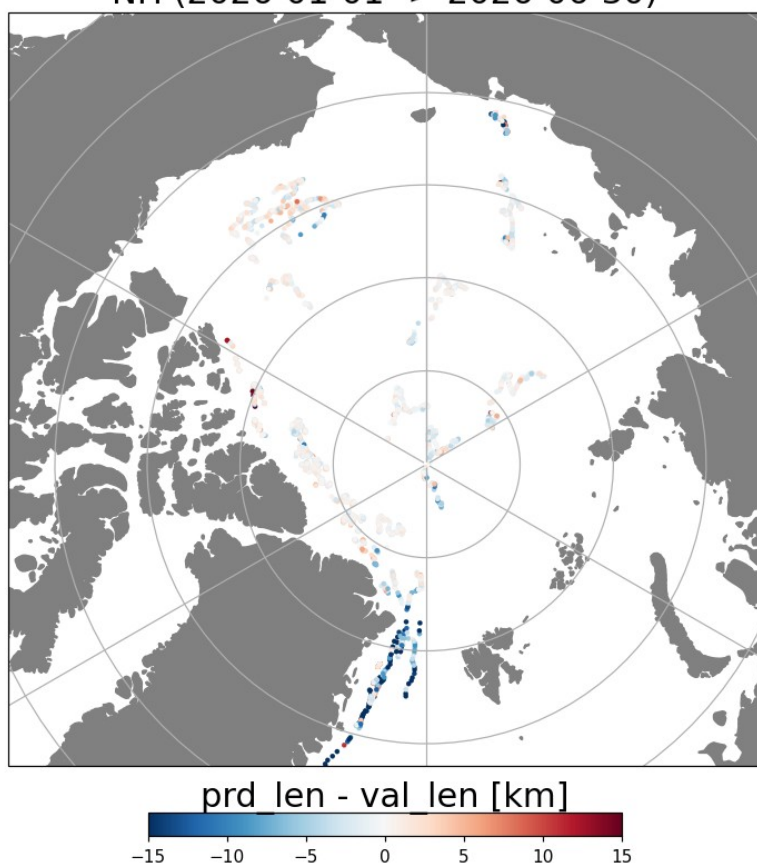


Figure 73: Location of GPS drifters for the quality assessment period (JAN. 2026 to JUN. 2026) in NH. The shade of each symbol represents the mean difference (prod-ref) in drift length (km over 2 days) for the multi-oi product.

Month	b(X) [km]	b(Y) [km]	std(X) [km]	std(Y) [km]	A	B[km]	corr	N
JUL. 2025	-0.851	-0.394	4.963	4.831	0.84	-0.131	0.88	654
AUG. 2025	-1.155	-0.173	6.665	5.867	0.7	-0.014	0.75	427
SEP. 2025	-1.037	-1.033	5.683	5.791	0.81	-0.192	0.87	370
OCT. 2025	-0.828	-0.807	4.933	5.363	0.81	-0.194	0.92	628
NOV. 2025	-0.643	-0.889	3.588	4.508	0.87	-0.376	0.95	710
DEC. 2025	-0.541	-0.328	3.349	3.155	0.88	-0.203	0.95	717
JAN. 2026	-0.385	-0.605	3.428	4.071	0.77	-0.136	0.91	671
FEB. 2026	-0.143	0.017	3.565	3.22	0.84	-0.162	0.9	520
MAR. 2026	-0.02	-0.127	2.688	2.989	0.82	0.069	0.91	655
APR. 2026	-0.553	-0.924	3.01	5.427	0.64	0.069	0.84	563
MAY 2026	-0.359	-0.052	3.145	4.128	0.87	0.08	0.91	544
JUN. 2026	-0.74	-0.517	5.884	6.646	0.77	0.24	0.8	321
Last 12 months	-0.573	-0.484	4.221	4.623	0.82	-0.124	0.9	6780

Table 40: Quality assessment results for the LRSID (multi-oi) product (NH) for JUL. 2025 to JUN. 2026.

Month	b(X) [km]	b(Y) [km]	std(X) [km]	std(Y) [km]	A	B[km]	corr	N
JUL. 2025	NA	NA	NA	NA	NA	NA	NA	0
AUG. 2025	NA	NA	NA	NA	NA	NA	NA	0
SEP. 2025	NA	NA	NA	NA	NA	NA	NA	0
OCT. 2025	-0.663	-0.314	3.823	4.045	0.86	-0.112	0.95	523
NOV. 2025	-0.395	-0.582	2.98	3.681	0.92	-0.28	0.97	664
DEC. 2025	-0.278	-0.054	2.423	2.377	0.94	-0.056	0.97	646
JAN. 2026	-0.082	-0.181	2.18	2.011	0.91	-0.043	0.97	569
FEB. 2026	0.048	0.071	1.31	1.59	0.96	0.027	0.98	443
MAR. 2026	-0.127	0.003	1.418	1.887	0.95	-0.013	0.96	585
APR. 2026	-0.503	-0.75	2.673	4.556	0.7	-0.053	0.87	477
MAY 2026	NA	NA	NA	NA	NA	NA	NA	0
JUN. 2026	NA	NA	NA	NA	NA	NA	NA	0
Last 12 months	-0.289	-0.259	2.557	3.071	0.9	-0.119	0.96	3907

Table 41: Quality assessment results for the LRSID (AMSR2-GW1) product (NH) for JUL. 2025 to JUN. 2026.

Validation drifters for multi-oi
SH (2026-01-01 -> 2026-06-30)

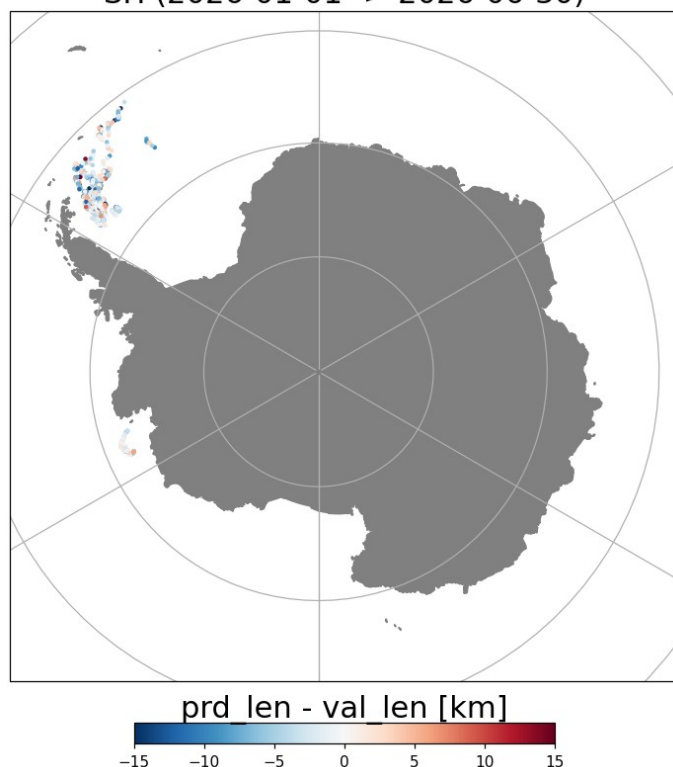


Figure 74: Location of GPS drifters for the quality assessment period (JAN. 2026 to JUN. 2026) in SH. The shade of each symbol represents the mean difference (prod-ref) in drift length (km over 2 days) for the multi-oi product.

Products	b(X) [km]	b(Y) [km]	std(X) [km]	std(Y) [km]	A	B[km]	corr	N
multi-oi	-0.175	0.389	5.083	5.623	0.88	-0.31	0.94	1512
amsr2-gw1	-0.069	0.1	4.317	5.335	0.91	-0.381	0.95	863

Table 42: Quality assessment results for selected OSI-405-d products (SH) for the last 12 months (JUL. 2025 to JUN. 2026).

Comments:

The low resolution sea-ice drift product has had nominal quality in the Arctic during the previous year for both multi-sensor and AMSR2-GW1, being within the target requirement for standard deviation of 5km for both X and Y components averaged over the year. It is worth noting that certain months have not individually met this same accuracy (August, September and October 2025, and April and June 2026).

In the Antarctic the yearly averaged standard deviation of the X and Y components does not meet the nominal requirement of 5km for either the multi-sensor product and the AMSR2-GW1 sensor, being rather within 6km. It should be again noted that the buoy availability and hence quality of the validation possible in the Antarctic is therefore low.

6. Service and Product usage

6.1. Statistics on the web site and help desk

The OSI SAF offers to the users:

- a central web site, <https://osi-saf.eumetsat.int>, managed by MF/CMS,
- a web site for LML, <https://osi-saf.eumetsat.int/lml/>, managed by MF/CMS,
- a web site for HL, <https://osisaf-hl.met.no/>, managed by MET Norway,
- a web site for WIND, <https://scatterometer.knmi.nl/osisaf/> managed by KNMI.

Users are recommended to make requests preferably through the central web site Help desk, with the guarantee that their demand will be acknowledged or answered quickly. However for requests concerning the HL or Wind products they may get access to direct contact points at MET Norway or KNMI.

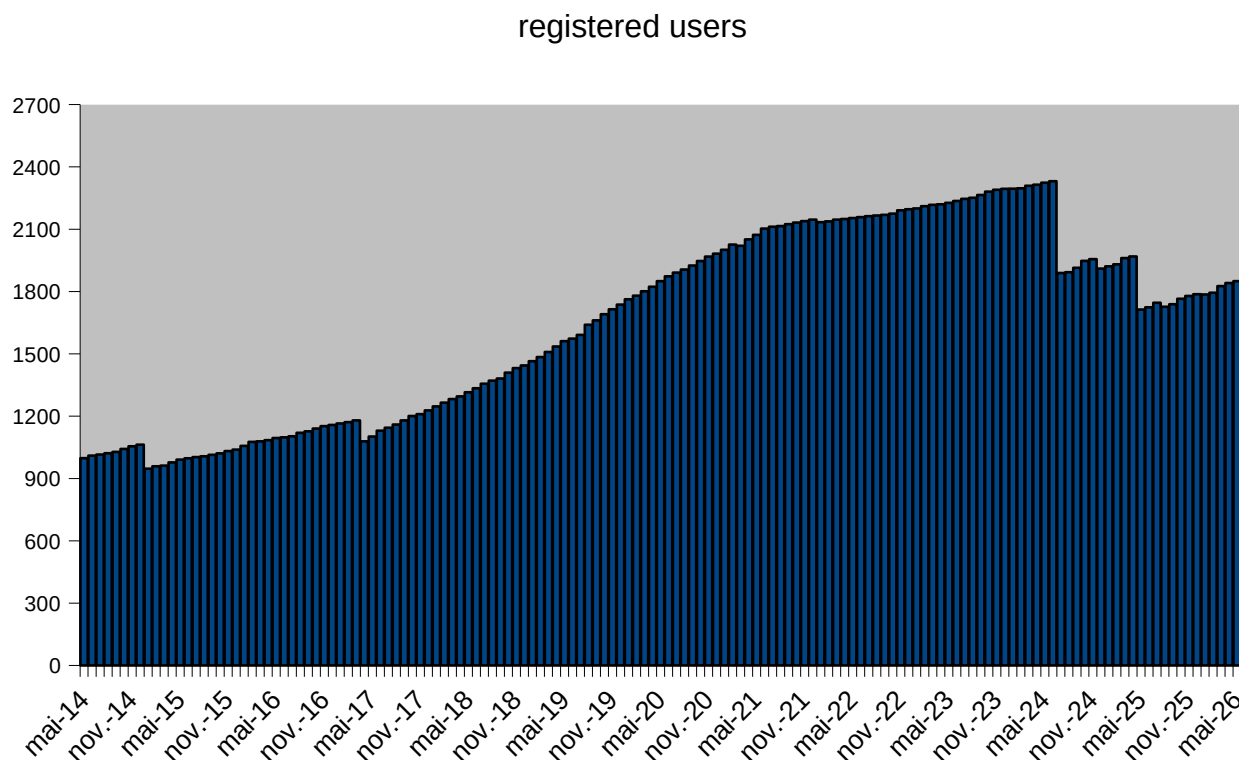
6.1.1. Statistics on the registered users

Statistics on the central Web site use		
Month	Registered users	Pages
JAN. 2026	1786	6700
FEB. 2026	1794	6956
MAR. 2026	1826	8237
APR. 2026	1841	7588
MAY 2026	1850	7649
JUN. 2026	1839	5564

Table 43: Statistics on central OSI SAF web site use over 1st half 2026.

The following graph illustrates the evolution of external registered users on the central web site.

Figure 75: Evolution of external registered users on the central Web Site from April 2014 to June 2026.



Comments:

From July 2024, at mid-year and at the beginning of each year, all accounts existing for more than 3 years and without any subscription to the service messages are deleted.

The following table lists the institutions or companies the new registered users (over 1st half 2026) are from.

Country	Institution, establishment or company
China	Insitute of Atmospheric Physics, Chinese Academy Sicences
China	Wuhan university
China	China National Technology Innovation Center for Wind Power
China	Wuhan university
China	Ocean University of China
China	Chinese Academy of Sciences
France	Météo-France
Germany	DER SPIEGEL
Germany	University of Hamburg
Hong Kong, SAR China	Hong Kong Polytechnic University
India	Indian Institute of Technology
Italy	egeos-company

Country	Institution, establishment or company
Italy	Centro Euro-Mediterraneo sui Cambiamenti Climatici
Italy	Istituto di scienze Marine - CNR
Italy	egeos-company
Netherlands	DMEC
Norway	Norwegian Meteorological Institute
Philippines	University of the Philippines
Portugal	Faculty of Sciences of the University of Lisbon
Senegal	Laboratoire de Physique de l'Atmosphère et de l'Océan Siméon Fongang
Spain	Instituto de Ciencias del Mar (ICM) – CSIC
Spain	Balearic Islands Coastal Observing System
Spain	Instituto de Ciencias del Mar (ICM) - CSIC
United Kingdom	Plymouth Marine Laboratory
United Kingdom	National Oceanography Centre, Southampton
United Kingdom	SatVu
United Kingdom	University College London
United Kingdom	Bangor University, School of Ocean Sciences
United Kingdom	Plymouth Marine Laboratory
United Kingdom	National Oceanography Centre, Southampton
United States of America	University at Albany-SUNY
United States of America	Ocean Science Analytics
United States of America	Moodys
United States of America	Texas A&M University
United States of America	Agencia Estatal de Meteorología
United States of America	University of Maryland, College Park
United States of America	University at Albany-SUNY
United States of America	Agence pour la sécurité de la navigation aérienne en Afrique
United States of America	Ocean Science Analytics
United States of America	Jet Propulsion Laboratory
United States of America	Cleveland State university

Table 44: List of institutes of the newly registered users over 1st half 2026 on the central Web Site

Moreover 47 new individual users, i.e. persons independent from any institute, establishment or company, registered on the period.

The following table gives the list of the newly registered wind users at KNMI.

Country	Institution, establishment or company	Acronym
Italy	WeatherSicily	

Table 45: List of institutes of the newly registered wind users at KNMI

Moreover, 1 new individual user, i.e., person independent from any institute, establishment or company, registered in the period.

6.1.2. Status of user requests made via the helpdesk

The user requests are split into 4 categories:

- Unavailable: one or several product(s) are unavailable
- Anomaly: anomaly in one or several product(s)/services
- Archive: request for archived data
- Information: request for information

	Total number of helpdesk inquiries	Number of inquiries acknowledged within 3 working days	Inquiries categorized as 'information'	Inquiries categorized as 'archive'	Inquiries categorized as 'unavailable'	Inquiries categorized as 'anomaly'
LML subsystem	6	6			6	
HL subsystem	20	19	15	1	3	1
WIND subsystem	22	22	15	4	1	2

Table 46: Helpdesk inquiries over 1st half 2026

6.1.3. Visitors statistics

Since the respective websites and technologies differ, and also the tools to get the statistics, it is not easy to compare the statistics. The following statistics are mainly useful to see changes over time.

The following graph shows the evolution of number of unique visitors on the central web site (<https://osi-saf.eumetsat.int/>) which includes the pages for the LML processing center (<https://osi-saf.eumetsat.int/lml-processing-center>).

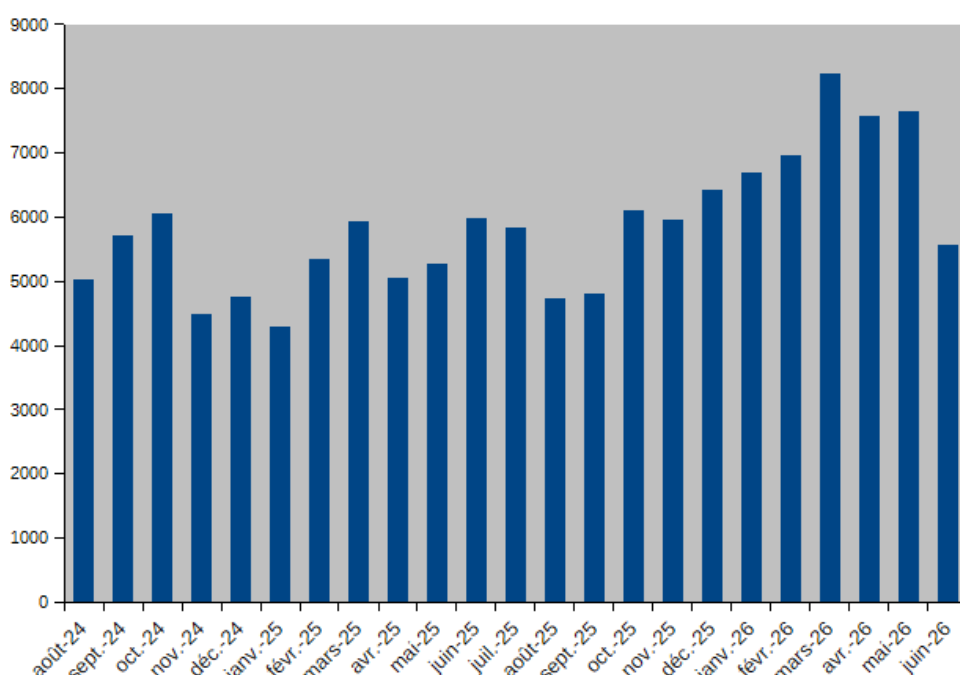


Figure 76: Evolution of page views on the central OSI SAF web site over the past 2 years

The following graph illustrates the evolution of page views on the OSI SAF High Latitude portal (<http://osisaf-hl.met.no>).

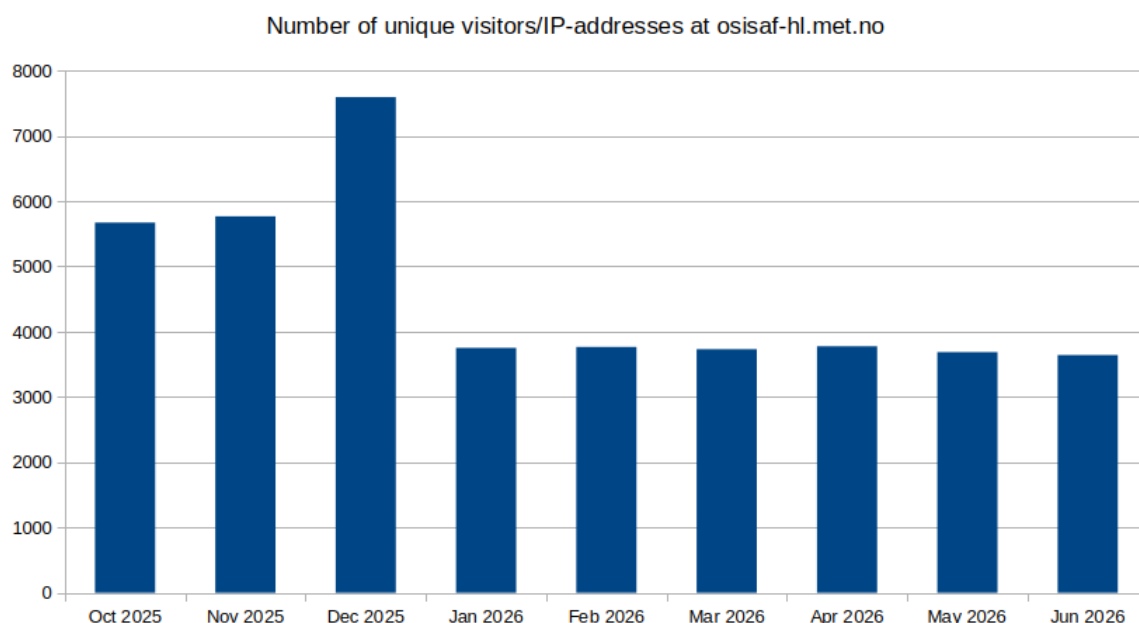


Figure 77: Evolution of page views on the HL OSI SAF Sea Ice portal over the past 2 years

Comment:

We have problems with many robots, AI-crawlers etc, which is not human use of the website. So we have tried to apply additional filtering, therefore the apparent drop of numbers of users from Dec to Jan.

The following graph illustrates the evolution of page views on the KNMI scatterometer web pages (<https://scatterometer.knmi.nl/home/>), which are partly devoted to the OSI SAF wind products.

Note: each click in a product viewer (to zoom in on a specific region) results in a new page view, That's why there are so many page views.

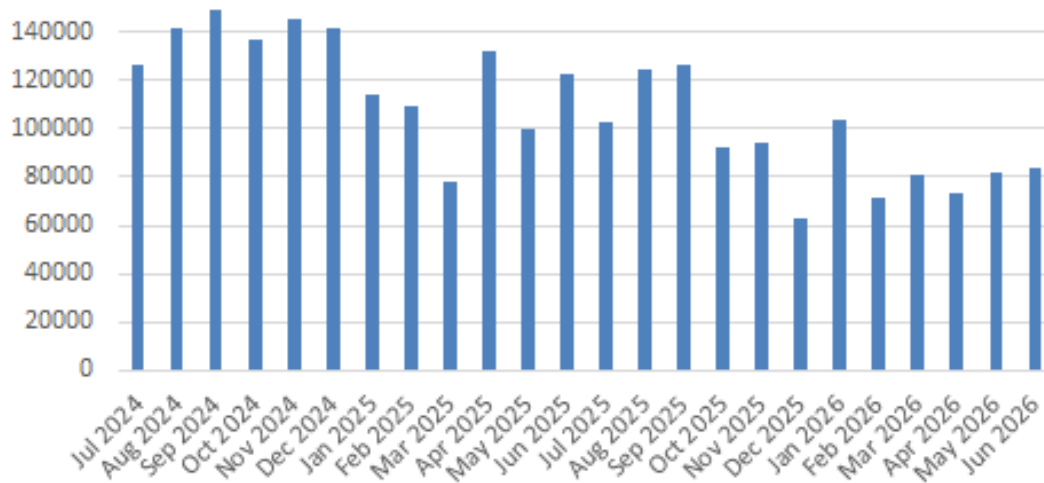


Figure 78: Evolution of page views on KNMI scatterometer website over the past 2 years

6.2. Statistics on the OSI SAF FTP servers use

6.2.1. Downloads statistics from the OSI SAF WIND subsystem and from PO.DAAC

Wind products are available on KNMI FTP server. The ASCAT wind products are also available at the PODAAC in NetCDF. Although outside the OSI SAF the PODAAC kindly provides the OSI SAF with statistics on the downloading of the OSI SAF products on their server.

The numbers for the KNMI FTP server are the average number of downloads per product file of the near-real time products. The numbers for PO.DAAC are the downloaded number of archived product files (containing one orbit each) which may cover the whole product history. Note that the BUFR products are also disseminated through EUMETCast.

From the KNMI FTP server we get loggings of the number of downloads of a certain product (i.e., all files of a product) per day. These numbers are fairly constant over a period of one month. The reported number of downloads is obtained by dividing the number of downloads per day by the number of product files produced per day. The KNMI FTP server contains a rolling archive of the last 3 days so these numbers reflect the real NRT usage and we believe it should be close to the number of product users.

For PO.DAAC the situation is different since it contains the full history of products. The downloaded files can be recent or they can be from the past. Also, PO.DAAC contains ASCAT files in full orbits whereas the KNMI FTP sever contains ASCAT files in 3 minute PDUs for BUFR format and full orbits for NetCDF format. This makes comparing of the numbers difficult.

		JAN. 2026		FEB. 2026		MAR. 2026		APR. 2026		MAY 2026		JUN. 2026	
		KNMI FTP	PO.DAAC	KNMI FTP	PO.DAAC	KNMI FTP	PO.DAAC	KNMI FTP	PO.DAAC	KNMI FTP	PO.DAAC	KNMI FTP	PO.DAAC
OSI-102-b	ASCAT-B 25 km	18 per file (BUFR), 50 per file (NetCDF)	0	18 per file (BUFR), 50 per file (NetCDF)	46589	18 per file (BUFR), 50 per file (NetCDF)	56371	16 per file (BUFR), 50 per file (NetCDF)	240	16 per file (BUFR), 50 per file (NetCDF)	N/A	16 per file (BUFR), 50 per file (NetCDF)	N/A
OSI-102-c	ASCAT-C 25 km	17 per file (BUFR), 40 per file (NetCDF)	0	17 per file (BUFR), 40 per file (NetCDF)	92863	17 per file (BUFR), 40 per file (NetCDF)	120055	15 per file (BUFR), 36 per file (NetCDF)	5016	15 per file (BUFR), 36 per file (NetCDF)	N/A	15 per file (BUFR), 36 per file (NetCDF)	N/A
OSI-114-a	HY-2B 25 km wind vectors	500 per file (BUFR), 25 per file (NetCDF)		500 per file (BUFR), 25 per file (NetCDF)		500 per file (BUFR), 25 per file (NetCDF)		12 per file (BUFR), 28 per file (NetCDF)		12 per file (BUFR), 28 per file (NetCDF)		12 per file (BUFR), 28 per file (NetCDF)	
OSI-114-b	HY-2B 50	9 per file		9 per file		9 per file		6 per file		6 per file		6 per file	

	km wind vectors	(BUFR), 25 per file (NetCDF)		(BUFR), 25 per file (NetCDF)		(BUFR), 25 per file (NetCDF)		(BUFR), 28 per file (NetCDF)		(BUFR), 28 per file (NetCDF)		(BUFR), 28 per file (NetCDF)	
OSI-115-a	HY-2C 25 km wind vectors	450 per file (BUFR), 25 per file (NetCDF)		450 per file (BUFR), 25 per file (NetCDF)		450 per file (BUFR), 25 per file (NetCDF)		10 per file (BUFR), 29 per file (NetCDF)		10 per file (BUFR), 29 per file (NetCDF)		10 per file (BUFR), 29 per file (NetCDF)	
OSI-115-b	HY-2C 50 km wind vectors	8 per file (BUFR), 25 per file (NetCDF)		8 per file (BUFR), 25 per file (NetCDF)		8 per file (BUFR), 25 per file (NetCDF)		5 per file (BUFR), 29 per file (NetCDF)		5 per file (BUFR), 29 per file (NetCDF)		5 per file (BUFR), 29 per file (NetCDF)	
OSI-116-a	HY-2D 25 km wind vectors	N/A		N/A		N/A		N/A		N/A		N/A	
OSI-116-b	HY-2D 50 km wind vectors	N/A		N/A		N/A		N/A		N/A		N/A	
OSI-113-a	Oceansat-3 25 km winds	480 per file (BUFR), 32 per file (NetCDF)		480 per file (BUFR), 32 per file (NetCDF)		480 per file (BUFR), 32 per file (NetCDF)		10 per file (BUFR), 30 per file (NetCDF)		10 per file (BUFR), 30 per file (NetCDF)		10 per file (BUFR), 30 per file (NetCDF)	
OSI-113-b	Oceansat-3 50 km winds	5 per file (BUFR), 32 per file (NetCDF)		5 per file (BUFR), 32 per file (NetCDF)		5 per file (BUFR), 32 per file (NetCDF)		12 per file (BUFR), 28 per file (NetCDF)		12 per file (BUFR), 28 per file (NetCDF)		12 per file (BUFR), 28 per file (NetCDF)	
OSI-104-b	ASCAT-B Coastal	90 per file (BUFR), 50 per file (NetCDF)	3751	90 per file (BUFR), 50 per file (NetCDF)	18611	90 per file (BUFR), 50 per file (NetCDF)	35490	12 per file (BUFR), 50 per file (NetCDF)	142	12 per file (BUFR), 50 per file (NetCDF)	N/A	12 per file (BUFR), 50 per file (NetCDF)	N/A
OSI-104-c	ASCAT-C Coastal	85 per file (BUFR), 40 per file (NetCDF)	0	85 per file (BUFR), 40 per file (NetCDF)	150082	85 per file (BUFR), 40 per file (NetCDF)	40700	6 per file (BUFR), 30 per file (NetCDF)	168	6 per file (BUFR), 30 per file (NetCDF)	N/A	6 per file (BUFR), 30 per file (NetCDF)	N/A

Table 47: Number of OSI SAF products downloaded from KNMI FTP server (average number) and PO.DAAC server (absolute number).

6.2.2. Downloads statistics from the OSI SAF LML subsystem and from PO.DAAC

SST and Fluxes products are available from Ifremer: by FTP, by HTTP and by Thredds which offers the OpenDap service, the Web Coverage service (WCS) and the Web Mapping Service (WMS). WCS and WMS allow to directly view the data online, WCS allows to access to all the content of the data whereas WMS allows aonly to get the image.

Some SST products are also available at the PODAAC. Although outside the OSI SAF the PODAAC kindly provides the OSI SAF with statistics on the downloading of the OSI SAF products on their server.

		JAN. 2026		FEB. 2026		MAR. 2026		APR. 2026		MAY 2026		JUN. 2026	
		Ifremer FTP/ HTTP/ OpenDap WCS WMS	PO.DAAC	Ifremer FTP/ HTTP/ OpenDap WCS WMS	PO.DAAC	Ifremer FTP/ HTTP/ OpenDap WCS WMS	PO.DAAC	Ifremer FTP/ HTTP/ OpenDap WCS WMS	PO.DAAC	Ifremer FTP/ HTTP/ OpenDap WCS WMS	PO.DAAC	Ifremer FTP/ HTTP/ OpenDap WCS WMS	PO.DAAC
SST MAP +LML		4,006	x	44	x	8	x	6,964	x	5,064	x	1,028	x
SSI MAP +LML		59	x	5	x	85	x	504	x	1,179	x	1,614	x
DLI MAP +LML		4	x	4	x	5	x	3	x	67	x	4	x
OSI-201 series	GBL SST	1,298	NA	756	3847	541	7296	1,007	0	3,739		5,702	
OSI-202 series	NAR SST	2,494	NA	976	143	840	2281	1,342	0	14,914		7,878	
OSI-204 series	MGR SST	302902	NA	299,503	24793	326,577	505901	362,442	25	385,981		733,298	
OSI-206 series	Meteosat SST	4,051	NA	62,194	12449	55,002	0	11,388	10	6,604		37,483	
OSI-207 series	GOES-East SST	12,702	NA	17,142	0	7,000	17795	40,26	0	24,794		892	
OSI-IO-SST	Meteosat-8 SST	6,995	NA	92,688	1671	41,707	26294	12,223	8	67,363		54,324	
OSI-208 series	IASI SST	213,091	NA	15,270	13167	14,202	490688	24,910	0	92,963		115,233	
OSI-250	Meteosat SST Data record	18,202	NA	22,274	0	86,080	26006	57,679	0	13,364		72,503	
OSI-303 series	Meteosat 0° DLI	21,649	x	97,528	x	19,307	x	272,747	x	115,326	x	144,295	x
OSI-304 series	Meteosat 0° SSI	21,649	x	97,528	x	19,307	x	272,747	x	115,326	x	144,295	x
OSI-305 series	GOES-East DLI	194	x	4,899	x	25,027	x	12,273	x	31,242	x	18,182	x
OSI-306 series	GOES-East SSI	194	x	4,899	x	25,027	x	12,273	x	31,242	x	18,182	x
OSI-IO-DLI	Meteosat IO DLI	206	x	6,919	x	4,422	x	7,301	x	72,750	x	4,109	x
OSI-IO-SSI	Meteosat IO SSI	206	x	6,919	x	4,422	x	7,301	x	72,750	x	4,109	x

Table 48: Number of OSI SAF products downloaded from Ifremer FTP server and PO.DAAC server over 1st half 2026.

Note: PO.DAAC statistics about the NAR SST product is the sum of NOAA-17, NOAA-18, NOAA-19, Metop-A and Metop-B NAR SST products.

6.2.3. Downloads statistics from the OSI SAF HL subsystem, and from CMEMS and C3S

Sea Ice, SST and Flux products are available on MET Norway FTP server. Some products are also made available through Copernicus CMEMS, and statistics are kindly made available for these products.

OSI SAF HL FTP server		JAN. 2026	FEB. 2026	MAR. 2026	APR. 2026	MAY 2026	JUN. 2026
OSI-401 series	Global Sea Ice Concentration (SSMIS)	29465	12377	92384	11843	63838	26891
OSI-402 series	Global Sea Ice Edge	13297	6178	9003	8195	9921	16969
OSI-403 series	Global Sea Ice Type	9957	5283	8404	11832	138289	76812
OSI-404 series	Global Sea Ice Emissivity	76	7	2	0	66	2
OSI-405 series	Low resolution Sea Ice Drift	31676	26551	18661	37026	20441	30842
OSI-408 series	Global Sea Ice Concentration (AMSR2)	20773	11455	33280	31329	45677	33056
OSI-410 series	Level 2 PMW sea ice concentration	16662	55077	132813	4845	6945	4725
OSI-430-a	Ice Concentration ICDR v3.0	32632	19480	15825	10636	15080	18082
OSI-430-b	Ice Concentration ICDR v2.0	17160	5096	1499	10846	2329	3312
OSI-438	AMSR Ice Concentration ICDR v3.0	5135	4047	5391	4814	19359	58146
OSI-450	Ice Concentration Data Record v2.0	71395	9590	415	6079	12645	14673
OSI-450-a	Ice Concentration Data Record v3.0	24908	35826	26011	794	30934	7047
OSI-450-a1	Ice Concentration Data Record v3.1	60265	115420	117114	63096	285129	115679
OSI-455	Ice Drift Data Record v1.0	2177	25939	3	5166	368	30198
OSI-458	AMSR Ice Concentration CDR v3.0	435	8	13014	62	14404	129659
OSI-203 series	AHL SST	7	4	59	138	219	2
OSI-205 series	L2 SST/IST	48437	4758	7414	8677	9849	3522
OSI-301/2 series	AHL DLI-SSI	504	455	524	851	663	942
OSI-420	Sea-ice index	NA	NA	NA	NA	79	14075

Table 49: Number of OSI SAF products downloaded from OSI SAF HL FTP server over 1st half 2026.

Redistribution by CMEMS		JAN. 2026		FEB. 2026		MAR. 2026		APR. 2026		MAY 2026		JUN. 2026	
		Reqs	Dloads	Reqs	Dloads	Reqs	Dloads	Reqs	Dloads	Reqs	Dloads	Reqs	Dloads
OSI-401 series	Global Sea Ice Concentration (SSMIS)	5044	237	4255	196	2980	203	11830	215	3079	225	3884	169
OSI-402 series	Global Sea Ice Edge	12502	150	3504	101	11816	55	2354	45	4087	47	1595	26
OSI-403 series	Global Sea Ice Type	5130	174	2375	145	4116	165	9432	169	4183	151	5063	158
OSI-405 series	Low resolution Sea Ice Drift	6985	1002	7765	851	8243	1143	8557	1184	9000	1218	8511	1197
OSI-408 series	Global Sea Ice Concentration (AMSR2)	35121	1050	39369	1062	37375	1145	63429	1309	32642	1722	18353	1722
OSI-430-a	Ice Concentration ICDR v3.0	13885	963	10531	849	22151	1227	11632	1335	13440	1293	131121	1288
OSI-450-a	Ice Concentration Data Record v3.0	6609	156	44395	82	37975	98	31289	92	43995	54	677548	49
OSI-438	AMSR Ice Concentration ICDR v3.0	-	-	82	28	205	61	269	34	477827	63	115096	34
OSI-458	AMSR Ice Concentration CDR v3.0	-	-	82	28	13221	74	4726	48	141370 0	70	73274	36

Table 50: Number of OSI SAF products redistributed by CMEMS over 1st half 2026. Reqs = number of HTTPS requests for OSI SAF data to CMEMS tools/services, Dloads = downloads, number of unique combination of user + dataset + day + service + method.

Redistribution by C3S		JAN. 2026	FEB. 2026	MAR. 2026	APR. 2026	MAY 2026	JUN. 2026
OSI-430-b	Ice Concentration ICDR v2.0	140	2555	2774	1574	37	607
OSI-430-a	Ice Concentration ICDR v3.0	6973	7833	16590	24277	11423	5459
OSI-450	Ice Concentration Data Record v2.0	15	98	304	72	202	3436
OSI-450-a	Ice Concentration Data Record v3.0	11934	48	5	23	68	1599
OSI-455	Ice Drift CDR v1.0	34080	294	105610	83200	1598	126229
OSI-458	AMSR Ice Concentration CDR v3.0	34083	21530	14440	42550	25345	3054

Table 51: Number of OSI SAF products redistributed by C3S (number of files) over 1st half 2026.

6.3. Statistics from EUMETSAT central facilities

6.3.1. Users from EUMETCast

Here below the list of the OSI SAF users identified by EUMETSAT for the distribution by EUMETCast.

Albania	6	Ghana	11	Palestinian Territory	1
Algeria	6	Greece	21	Poland	15
Angola	3	Guinea	2	Portugal	8
Austria	24	Guinea-Bissau	3	Qatar	3
Azerbaijan	3	Hong Kong	1	Reunion	2
Bahrain	1	Hungary	10	Romania	10
Belgium	14	Iceland	1	Russian Federation	7
Benin	4	India	3	Rwanda	6
Bosnia And Herzegovina	1	Iran, Islamic Republic Of	40	San Marino	1
Botswana	6	Iraq	2	Sao Tome And Principe	2
Brazil	5	Ireland	9	Saudi Arabia	3
Bulgaria	7	Israel	7	Senegal	10
Burkina Faso	4	Italy	293	Serbia	2
Burundi	2	Jordan	1	Sevchelles	3
Cameroon	6	Kazakhstan	5	Sierra Leone	3
Canada	2	Kenya	13	Slovakia	8
Cape Verde	3	Korea, Republic Of	1	Slovenia	1
Central African Republic	3	Kuwait	2	Somalia	1
Chad	4	Kyrgyzstan	1	South Africa	21
China	4	Latvia	2	South Sudan	2
Comoros	2	Lebanon	3	Spain	50
Congo	3	Lesotho	4	Sudan	4
Congo, The Democratic Republic Of The	5	Liberia	3	Sweden	6
Cote De Ivoire	6	Libyan Arab Jamahiriya	1	Switzerland	20
Croatia	2	Lithuania	2	Syrian Arab Republic	1
Cyprus	1	Luxembourg	2	Tajikistan	1
Czech Republic	25	Madagascar	6	Tanzania, United Republic Of	5
Denmark	7	Malawi	4	Togo	4
Djibouti	2	Mali	4	Tunisia	6
Egypt	5	Malta	2	Turkey	8
Equatorial Guinea	2	Mauritania	5	Turkmenistan	1
Eritrea	2	Mauritius	8	Uganda	5
Estonia	3	Morocco	8	Ukraine	3
Eswatini	4	Mozambique	6	United Arab Emirates	4
Ethiopia	9	Namibia	6	United Kingdom	142
Finland	6	Netherlands	30	United States	3
France	70	Niger	9	Uzbekistan	1
Gabon	2	Nigeria	7	Viet Nam	1
Gambia	3	Norway	6	Yemen	1
Georgia	1	Oman	2	Zambia	4
Germany	124	Pakistan	2	Zimbabwe	5

Table 52: Overall number of EUMETCast users by country on the January 2026.

6.3.2. Users and retrievals from EUMETSAT Data Center

Orders Summary over the 1st half 2026

The table below lists the products downloaded from the EUMETSAT Data Center (EDC), the volume of the downloaded data in megabytes (MB) and the number of files over the **1st half 2026**.

	Item	Volume in MB	Number of files
OSI-152	ERS1_OR1ERW025_OPE	14813	32431
OSI-152	ERS2_OR1ERW025_OPE	21981	33301
OSI-404 series	F-18_OSIEMGB_OPE	344	46
Hourly OSI-305/OSI-306 series	GOES-16_OHDLISSI_OPE	94978	11065
OSI-207-b	GOES-16_OSIHSSTN_OPE	17356	2016
OSI-408 series	GW-1_OSICOAMSRGB_OPE	6450	557
OSI-116-c	HY-2D_OHDSW025_OPE	4415	3894
OSI-159-a	ISS_OR1RSW025_OPE	63974	19654
OSI-102 series	M01_OAS025_OPE	66	32
OSI-102 series	M01_OASW025_OPE	927	163
OSI-104 series	M01_OASWC12_OPE	11392	1022
OSI-202 series	M01_OSSTNARN_OPE	82	4
OSI-104 series	M02_OASW012_OPE	3457	1153
OSI-104 series	M02_OASWC12_OPE	7189	318
OSI-150-a	M02_OR1ASW025_OPE	41	14
OSI-201 series	M02_OSSTGLB_OPE	86	4
OSI-102 series	M03_OAS025_OPE	4	2
OSI-102 series	M03_OASW025_OPE	921	158
OSI-104 series	M03_OASWC12_OPE	7075	583
OSI-301/OSI-302 series	MML_ODLISSIAHL_OPE	8442	728
OSI-450 series	MML_OR450ASICO_OPE	4585	4388
OSI-455	MML_OR455SIDR_OPE	85	732
OSI-405 series	MML_OSIDRGB_OPE	184	264
OSI-402 series	MML_OSIEDGBN_OPE	324	24
OSI-403 series	MML_OSITYGBN_OPE	165485	12680
OSI-206	MSG2_OSIHSSTN_OPE	227976	1336
Daily OSI-303/OSI-304 series	MSG3_ODDLISSI_OPE	8342	725
Hourly OSI-303/OSI-304 series	MSG3_OHDLISSI_OPE	225233	22593
OSI-206 series	MSG3_OSIHSSTN_OPE	5288	580
Daily OSI-303/OSI-304 series	MSG4_ODDLISSI_OPE	8342	2
Hourly OSI-303/OSI-304 series	MSG4_OHDLISSI_OPE	122502	5152
OSI-206 series	MSG4_OSIHSSTN_OPE	392632	33740
OSI-202 series	N20_OSSTNARN_OPE	66	4
OSI-153-c	OCEANSAT2_OR2OSW025_OPE	10464	9707
OSI-151-c	QUIKSCAT_OR2SWW025_OPE	19392	14932
OSI-112-a	SCATSAT1_OSSW025_OPE	163	29

Table 53: Volume of data downloaded (in MB) by products from EDC over 1st half 2026.

Ingestion Summary over the 1st half 2026

The next table lists the received percentage of OSI SAF products by month over the period. In red, there was clearly an outage of products as well under the OSI SAF monthly target performance of 95%.

There might be some differences between disseminated values over EUMETCast and the data ingested in the EDC. We assume it is due to how the availability is calculated in both cases. In the EUMETCast case, the statistics are calculated depending on the number of inputs received, while in UMARF the number of expected products is static (it is considered a theoretical number of expected products).

Product id.	Product acronym	JAN. 2026	FEB. 2026	MAR. 2026	APR. 2026	MAY 2026	JUN. 2026
OSI-102-b	M01_OASW025	97.9	100	100	99.8	100	100
OSI-102-c	M03_OASW025	100	100	100	100	100	99.8
OSI-104-b	M01_OASWC12	98.6	100	100	100	100	98.3
OSI-104-c	M03_OASWC12	100	100	100	100	100	100
OSI-113-a	OCEANSAT3_OO3SW025	100	100	100			
OSI-113-b	OCEANSAT3_OO3SW050	100	100	100			
OSI-114-c	HY-2B_OHBSW025	92.9	98.2	98.2			
OSI-114-d	HY-2B_OHBSW050	92.9	98.2	98.2			
OSI-115-c	HY-2C_OHCSW025	97.7	98.2	98.6			
OSI-115-d	HY-2C_OHCSW050	97.7	98.2	98.6			
OSI-201-b	M01_OSSTGLBN	100	100	100	100	100	100
OSI-202-c	M01_OSSTNARN	100	98.2	100	100	100	99.8
OSI-202-c	N20_OSSTNARN	98.4	100	100	100	100	100
OSI-203-a	M01_OSSTIST3A	100	100	100	100	100	100
OSI-203-b	NPP_OSSTIST3B	100	100	100	0.0	0.0	0.0
OSI-205-a	M01_OSSTIST2	100	100	100	100	100	100
OSI-205-b	NPP_OSSTIST2B	100	100	100	100	100	100
OSI-206-a	MSG3_OSIHSSTN	100	100	100	100	100	100
OSI-207-c	GOES-19_OSIHSSTN	100	99.9	99.9	100	100	100
OSI-301-c/OSI-302-c	MML_ODLISSIAHL	100	100	100	90.0	100	76.7
OSI-303-a/OSI-304-a	MSG3_ODDLISSI	100	100	100	99.6	100	100
OSI-303-a/OSI-304-a	MSG3_OHDLISSI	100	100	100	99.3	100	100
OSI-401-d	MML_OSICOGBN	100	85.7	80.6	100	100	100
OSI-402-d	MML_OSIEDGBN	100	100	100	100	100	100
OSI-403-d	MML_OSITYGBN	100	100	100	96.7	100	100
OSI-404-b	F-18_OSIEMGB	100	100	100	100	100	99.9
OSI-405-d	MML_OSIDRGB	100	100	100	100	100	100
OSI-408-a	GW-1_OSICOAMSRGB	100	100	100	100	100	100
OSI-410-a	F-16_OSICOL2	100	100	100	100	100	100
OSI-410-a	F-17_OSICOL2	100	100	100	100	100	100
OSI-410-a	F-18_OSICOL2	100	100	100	100	100	100
OSI-410-a	GW-1_OSICOL2	100	100	100	100	100	100

Table 54: Percentage of received OSI SAF products in EDC in 1st half 2026.

Notable KPI figures:

- In January the M01_OASW025, M01_OASWC12 are less than expected (UNS 12998)
- The number of F-16_OSICOL2, F-17_OSICOL2, F-18_OSICOL2, F-18_OSIEMGB and MML_OSICOGN products are released on best effort basis
[DMSP SSMIS data provision to continue on best effort basis | EUMETSAT - User Portal](#)
- [OSI SAF Global Sea Ice Concentration ICDR \(AMSR\), release 3 \(OSI-438\)](#) is waiting for the SG endorsement to release the product (will be included in the next quarter report)
- In April the MSG3_ODDLISSI, MSG3_OHDLISSI, MSG3_OSIHSSTN are less than expected (UNS 14239, 14223, 14275, 14288, 14306)

7. Recent publications

Samuel, S., A. Verhoef and A. Stoffelen, Optimizing 1D-Var near-surface wind speed from SSMIS with RapidScat

Remote Sensing of Environment, 2026, 344, 115560, [doi:10.1016/j.rse.2026.115560](https://doi.org/10.1016/j.rse.2026.115560).

We contribute to the papers, and they use OSI SAF data:

Wernecke, A., Laverne, T., Kern, S., and Notz, D.: Uncertainty of the satellite-retrieved sea-ice area record and its trend, The Cryosphere, 20, 3783–3793, <https://doi.org/10.5194/tc-20-3783-2026>, 2026. (OSI-450-a1, OSI-430-a)

Korosov, A., Edel, L., Regan, H., Laverne, T., Aaboe, S., and Down, E. J.: A climate data record of sea ice age using Lagrangian advection of a triangular mesh, Earth Syst. Sci. Data, 18, 721–740, <https://doi.org/10.5194/essd-18-721-2026>, 2026. (OSI-450-a1, OSI-430-a, OSI-455, OSI-435, OSI-405)

Ricker, R., Laverne, T., Hendricks, S., Paul, S., Down, E., Killie, M. A., and Bocquet, M.: Drift-aware sea ice thickness maps from satellite remote sensing, The Cryosphere, 19, 3785–3803, <https://doi.org/10.5194/tc-19-3785-2025>, 2025. (OSI-450-a1, OSI-430-a, OSI-455, OSI-405)

They use OSI SAF (sea ice climate) data:

Fiol, L., Leroux, S., Rampal, P., and Brankart, J.-M.: Arctic sea ice predictability on daily-to-weekly timescales: sensitivity to initial positional errors under different rheology formulations, The Cryosphere, 20, 4655–4680, <https://doi.org/10.5194/tc-20-4655-2026>, 2026. (uses OSI-455)

Venkatachalam S, Granskog MA, Gonçalves-Araujo R, Divine DV, Vipindas PV, Jabir T, Shereef A, Jain A. 2025. Distinct bacterial community structures with abundant carbon degradation and sulfur metabolisms found in different sea-ice types from the Central Arctic Ocean. Microbiol Spectr 13:e01291-25.
<https://doi.org/10.1128/spectrum.01291-25> (uses OSI-455, OSI-450-a1, OSI-430-a)

de Jager, W., Melsheimer, C., Spreen, G., & Vichi, M. (2026). Dynamic decomposition of sub-daily Antarctic sea-ice concentration change using passive microwave swath observations. Earth and Space Science, 13, e2025EA004687. <https://doi.org/10.1029/2025EA004687> (uses OSI-455 and prototype OSI-405)

S. Fu *et al.*, "A novel Antarctic Sea-Ice Velocity Retrieval Framework Based on FY-3D/MWRI Imagery," in *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 19, pp. 13348-13363, 2026, doi: 10.1109/JSTARS.2026.3679699 (uses OSI-455. They actually copied the OSI SAF algorithm and evolved it for MWRI data)

Sandven, H., Granskog, M. A., Opdal, A. F., Connan-McGinty, S., Hamre, B., & McKee, D. (2025). Increased light availability in the northern Barents Sea driven by sea ice loss. *Journal of Geophysical Research: Oceans*, 130, e2025JC022370. <https://doi.org/10.1029/2025JC022370> (uses OSI-450-a1, OSI-430-a)

Landrum, L. L., DuVivier, A. K., Holland, M. M., Krumhardt, K., and Sylvester, Z.: Challenges in identifying Antarctic coastal polynyas in satellite observations and climate model output to support ecological climate change research, *The Cryosphere*, 20, 1815–1840, <https://doi.org/10.5194/tc-20-1815-2026>, 2026. (uses OSI-450-a1, OSI-430-a)

Williams, N., Wang, Y., and Counillon, F.: Enhanced prediction skill of Antarctic sea ice through sea ice thickness assimilation, *The Cryosphere*, 20, 3795–3815, <https://doi.org/10.5194/tc-20-3795-2026>, 2026. (uses SIC CDRs)

Watts, J., Bell, T. G., Anderson, K., Prytherch, J., Butterworth, B. J., Else, B., et al. (2026). The Evidence for linearly scaling ocean gas exchange with sea ice needs strengthening. *Journal of Geophysical Research: Biogeosciences*, 131, e2025JG009346. <https://doi.org/10.1029/2025JG009346> (might use both OSI-450/430 and OSI-401, to be checked)

Hoffman, F. M., Hassler, B., Swaminathan, R., Lewis, J., Andela, B., Collier, N., Hegedűs, D., Lee, J., Pascoe, C., Pflüger, M., Stockhause, M., Ullrich, P., Xu, M., Bock, L., Chun, F., Gier, B. K., Kelley, D. I., Lauer, A., Lenhardt, J., Schlund, M., Sreeush, M. G., Weigel, K., Blockley, E., Beadling, R., Beucher, R., Dugassa, D. D., Lembo, V., Lu, J., Brands, S., Tjiputra, J., Malinina, E., Medeiros, B., Scoccimarro, E., Walton, J., Kershaw, P., Lanfer Marquez, A., Roberts, M. J., O'Rourke, E., Dingley, B., Turner, B., Hewitt, H., and Dunne, J. P.: Rapid Evaluation Framework for the CMIP7 Assessment Fast Track, *Geosci. Model Dev.*, 19, 7415–7455, <https://doi.org/10.5194/gmd-19-7415-2026>, 2026. (documents that OSI SAF SIC CDR data will be used for CMIP7 model benchmarking)

One that we know of which uses OSISAF NRT and CDR SIC products:

Wulf, T., Buus-Hinkler, J., Singha, S., Dasgupta, N., Athanasiadis, A., and Kreiner, M. B.: A decade of sea ice concentration retrieved from sentinel-1, *Remote Sensing of Environment*, 337, 115 252, 2026.