Next-generation satellite data from MTG and EPS-SG by the OSI SAF

EUMETSAT OSI SAF
OCEAN AND SEA ICE

https://osi-saf.eumetsat.int/

OSI SAF is the **Ocean and Sea Ice Satellite Application Facility.** It is the dedicated EUMETSAT centre for processing **satellite data at the ocean-atmosphere interface.**

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The OSI SAF develops, processes and distributes, in **near real-time**, products related to **key parameters of the ocean-atmosphere interface**. The OSI SAF also offers **climatological data records.**

The OSI SAF team focuses on sea surface winds, sea and sea ice surface temperature, radiative fluxes: downward longwave irradiance and surface solar irradiance, sea ice concentration, edge, type, emissivity, drift.

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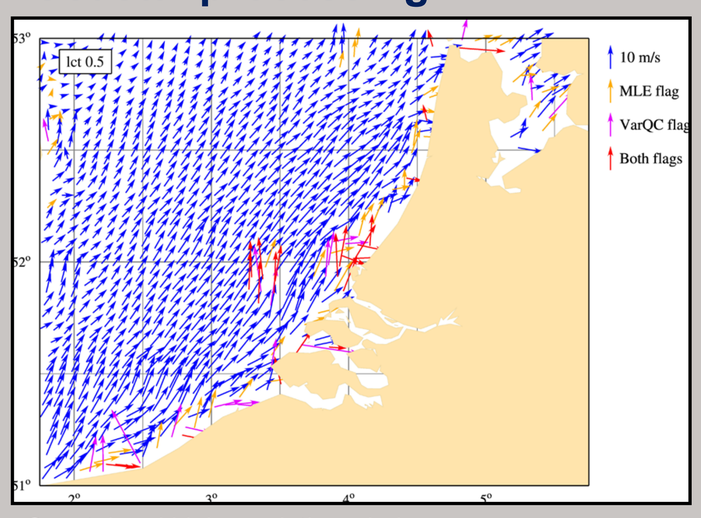
Sea Surface Winds

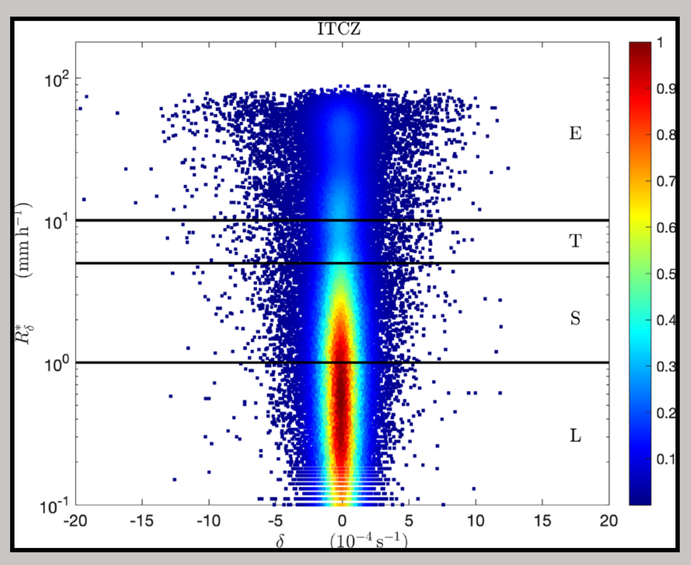
Coastal processing



Coastal and high-resolution winds

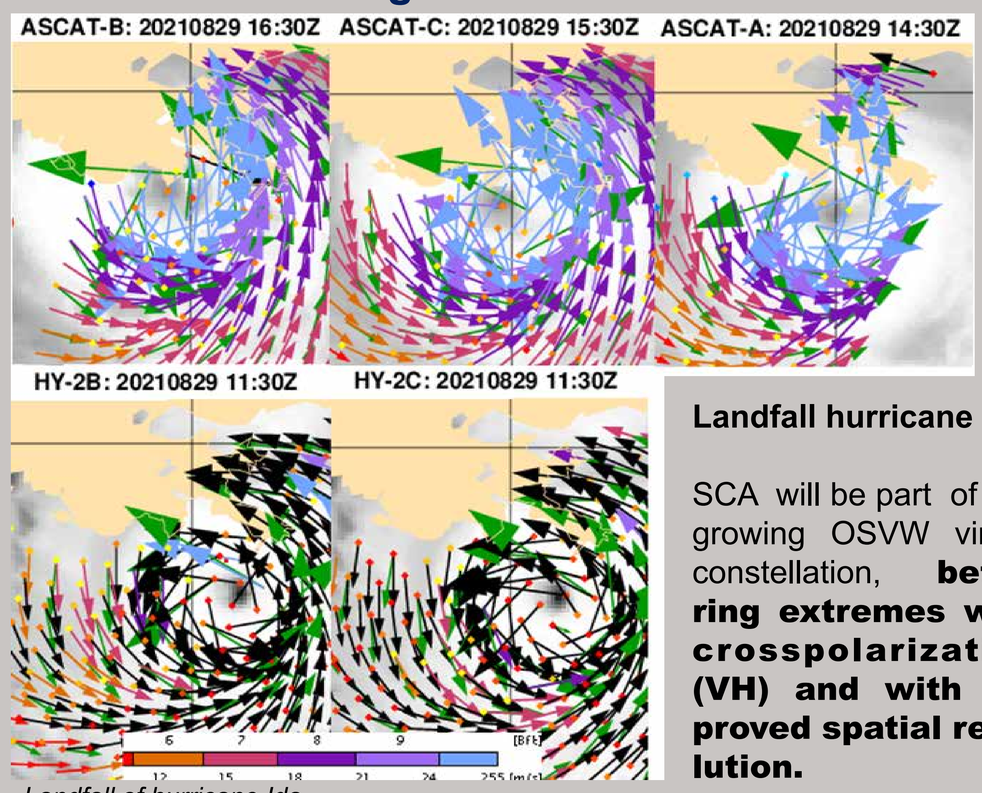
Users require **high resolution and coastal processing**, which we develop for ASCAT now in anticipation of increased SCA accuracy and finer SCA footprints.

ASCAT wind divergence is associated with moist convective updrafts and downdrafts, as verified with MSG rain products. In the SCA and MTG era, MWI and synergies with other sensor complements will aid the **further understanding of sub-mesoscale processes.**



ASCAT links to heavy convection (rain)

Measuring extreme winds

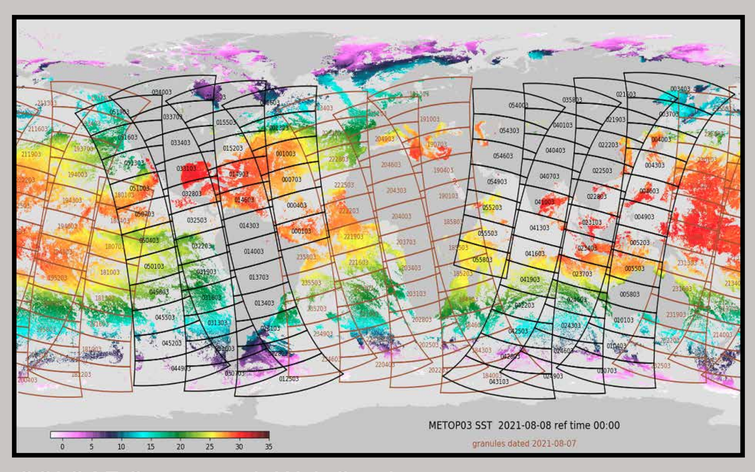


Landfall of hurricane Ida

Landfall hurricane Ida

SCA will be part of the growing OSVW virtual constellation, **bettering extremes with crosspolarization (VH) and with improved spatial resolution.**

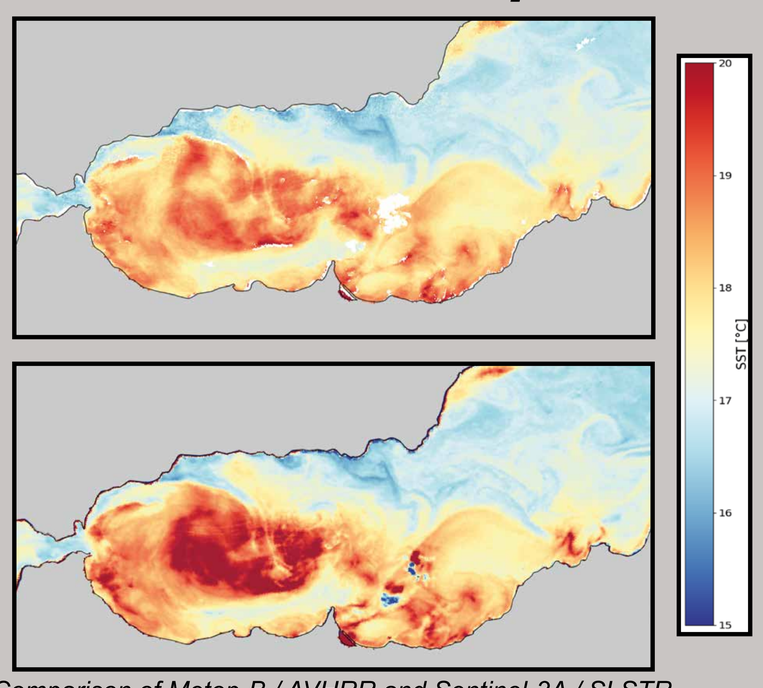
Data Access



OSI SAF Opensearch Web Service

OSI SAF now offers a REST-based Web Service for users to **select data files matching the user's spatial and temporal criteria.** This service is based on OpenSearch, a protocol that provides a way to access identified or located results, to publish search results in a standard and accessible format and to download them.

Sea Surface Temperature



Comparison of Metop-B / AVHRR and Sentinel-3A / SLSTR sea surface temperature over the Alboran Sea on 2022/05/06 around 9:30 UTC.

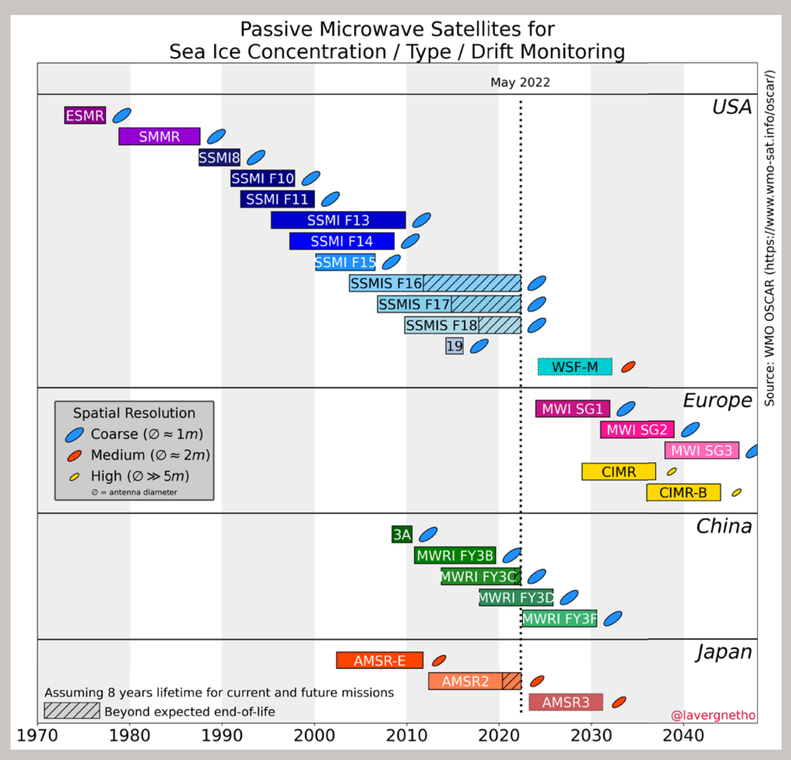
Sea Surface Temperature at higher resolution

As the complexity of the ocean's surface physical processes is being understood, there is a need for **higher resolution SST products**. METimage and FCI can answer some of these needs.

Metop-SG/METimage will have the ability to provide **full coverage of SST globally twice-daily at 500m resolution (L2P in satellite projection) and a global regridded product will also be available at 0.025° of resolution.**

FCI on-board MTG-I satellites will enable SST monitoring at fine temporal scales with an acquisition every 10 minutes and also at **fine spatial scale** with one of its infrared channels being at **1km resolution**. It will therefore be possible to monitor dynamic places, such as strong tidal coastal areas or river plumes, with precision.

Sea Ice Parameters



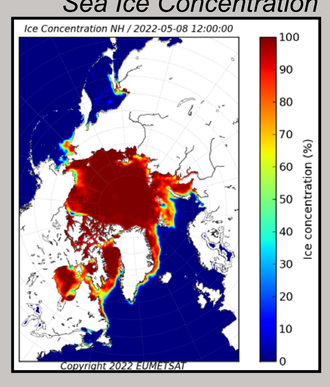
Continuity of Sea Ice monitoring

Continuity of climate monitoring

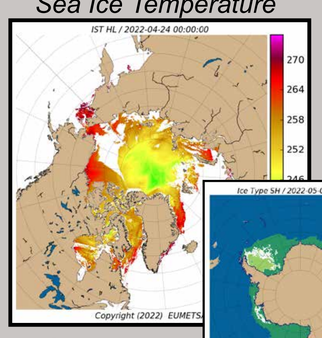
The 40+ years data record of passive microwave missions has been the work-horse for the monitoring of the polar regions and especially the sea-ice cover. The last of such missions from the United States of America are ageing. EUMETSAT's MicroWave Imager (MWI) mission will **extend this time series and allow continuity of the climate monitoring.** In parallel, Japan and China have operated similar missions making the constellation a true international endeavour. From the 2030s, the Copernicus Imaging Microwave Radiometer (CIMR) mission will introduce **higher fidelity and higher spatial resolution to the constellation.**

EPS-SG with the METimage, MWI and SCA instruments will **ensure the continuation of all the OSI SAF sea ice products**.

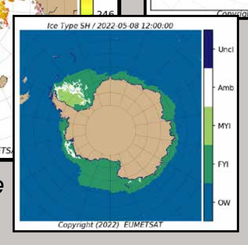
Sea Ice Concentration



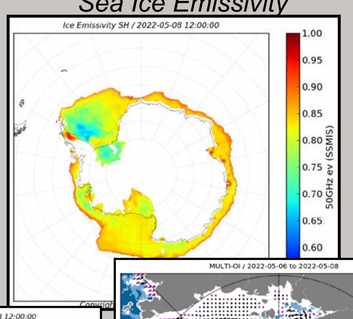
Sea Ice Temperature

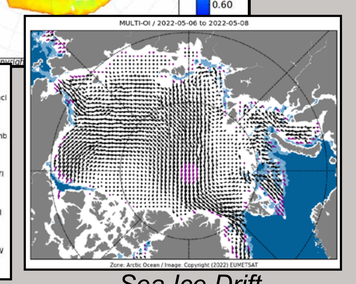


Sea Ice Type



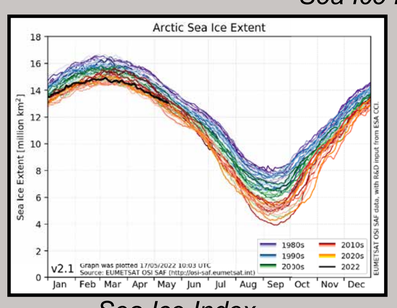
Sea Ice Emissivity





Sea Ice Drift

EPS-SG MWI will **contribute to the new sea ice index product**, currently available as demo product. This is a climate indicator product, derived from the sea ice concentration products. The indicator is both global and regional.



Sea Ice Index

MTG + EPS-SG

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