Copernicus Climate Change Service

CDS content portfolio

Climate Change

Climate Change

The C3S mission

To support European adaptation and mitigation policies by:

- Providing consistent and authoritative information about climate
- Building on existing capabilities and infrastructures (nationally, in Europe and worldwide)
- Stimulating the market for climate services in Europe

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Climate Data Store content

Scientific basis:

- Essential Climate Variables as defined by GCOS
- GCOS Status Report and Implementation Plan
- IPCC, CMIP

Observations

- Global estimates of ECVs from satellite and in-situ observations
- Reprocessed CDRs, reference observations
- Support for data rescue, climate data collections

Climate reanalysis

- Global atmosphere, ocean, land
- Regional reanalysis for Europe
- Coupled climate reanalysis for 100 years

Model output

- Multi-model seasonal forecast products
- Access to CMIP data and products (global and regional)
- Reference set of climate projections for Europe

Climate Indicators

European Commission

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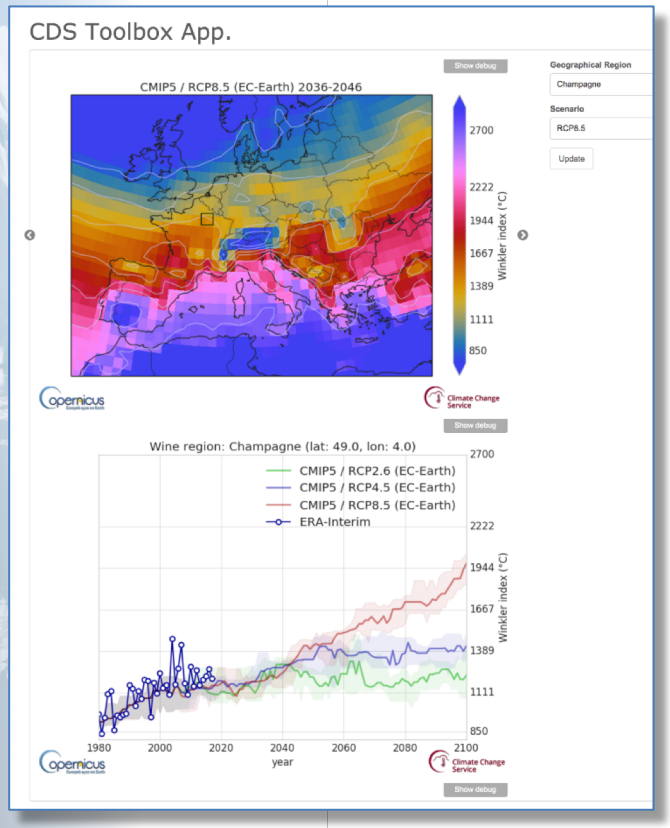
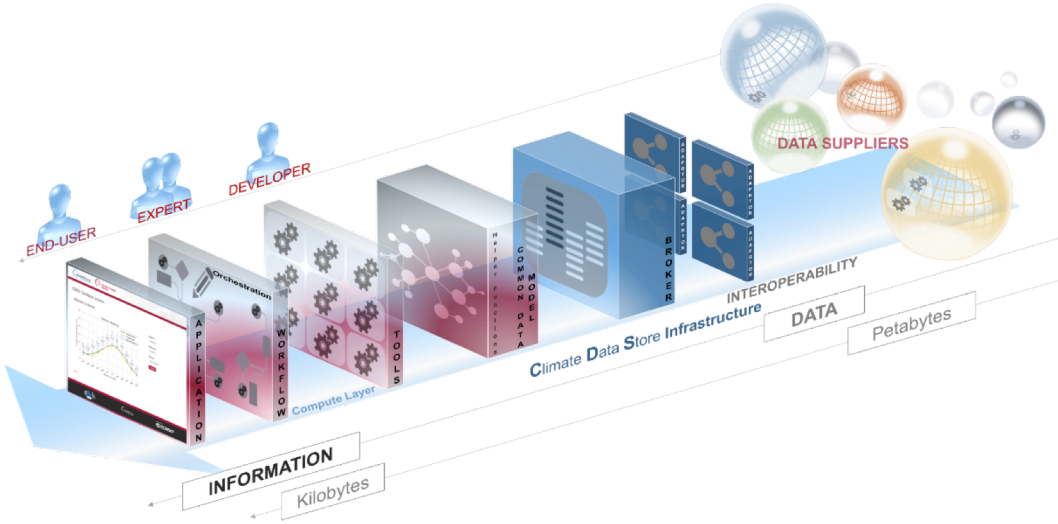
ECMWF

Climate Change

C3S infrastructure
CDS concept: Access to tools, workflows and applications





The CDS and its Tool Box allows managing and handling “climate objects” in a seamless way and within a unified environment.

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ECV products from Earth observations

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This is a new service -- your feedback will help us to improve it BETA

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Product type
- Climate projections (5)
- Reanalysis (4)
- Satellite observations (12)
- Seasonal forecasts (6)
- Sectoral climate indices (2)

Variable domain
- Atmosphere (composition) (3)
- Land (biosphere) (1)
- Land (cryosphere) (2)
- Land (hydrology) (1)
- Ocean (physics) (5)

Spatial coverage
- Global (9)

Temporal coverage
- Past (12)

Showing 1-12 of 12 results for Satellite observations ×

Glaciers elevation and mass change data from 1894 to 2014 from the Fluctuation of Glaciers Database

A glacier is defined as a perennial mass of ice, and possibly firn and snow, originating on the land surface from the recrystallization of snow or other forms of solid precipitation and showing eviden...

Albedo, leaf area index and fraction absorbed of photosynthetically active radiation 10-daily gridded data from 1999 to present

This dataset provides global Earth surface albedo reflectance and the albedo reflectance related products: Leaf Area Index (LAI) and FAPAR (Fraction Absorbed of Photosynthetically Active Radiation)....

Sea level daily gridded data for the Mediterranean Sea from 1993 to present

Sea level anomaly is the height of water over the mean sea surface in a given time and region. In this dataset sea level anomalies are computed with respect to a twenty-year mean reference period (199...

Sea level daily gridded data for the Black Sea from 1993 to present

Sea level anomaly is the height of water over the mean sea surface in a given time and region. Up-to-date altimeter standards are used to estimate the sea level anomalies with a mapping algorithm dedi...

Glaciers extent data from 1995 to 2015 from the Randolph Glacier Inventory

A glacier is defined as a perennial mass of ice, and possibly firn and snow, originating on the land surface from the recrystallization of snow or other forms of solid precipitation and showing eviden...

Ozone monthly gridded data from 1970 to present

This dataset provides estimates of the montly mean values of the ozone concentration, mixing ration and content over the globe from a large set of satellite sensors. Most of the ozone data products in...

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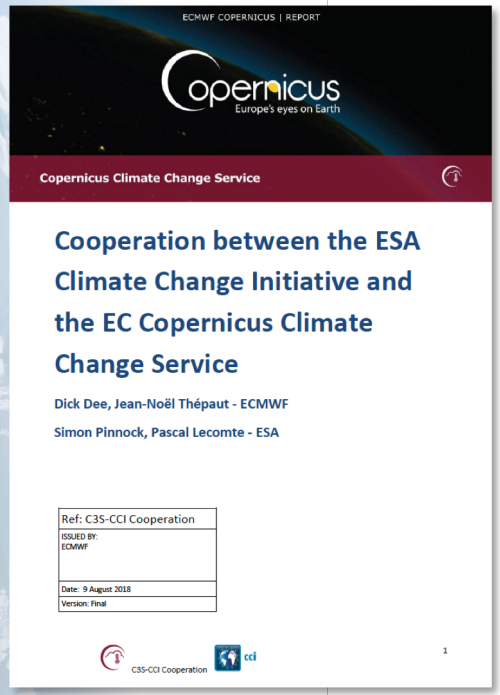
C3S and CCI: Research to Operations

Climate Change



Research → Operations

GCOS-195		CCI	CCI+	uptake	C3S	
Atmospheric surface						
4.3.1	Air temperature					
4.3.2	Wind speed and direction					
4.3.5	Precipitation					■
4.3.6	Surface radiation budget					■
Atmospheric upper air						
4.5.1	Air temperature					
4.5.2	Wind speed and direction					
4.5.3	Water vapour		■			■
4.5.4	Cloud properties	■		→		■
4.5.5	Earth radiation budget					■
Atmospheric composition						
4.7.1	Carbon dioxide	■		→	■	■
4.7.2	Methane	■		→	■	■
4.7.3	Other long-lived greenhouse gases					
4.7.4	Ozone	■		→	■	■
4.7.5	Aerosol	■		→	■	■
Ocean surface						
5.3.1	Sea-surface temperature	■		→	■	■
5.3.2	Sea-surface salinity		■			
5.3.3	Sea level	■		→	■	■
5.3.4	Sea state		■			
5.3.5	Sea ice	■		→	■	■
Ocean biogeochemistry						
5.3.7	Ocean colour	■		→		■
5.3.8	Carbon dioxide partial pressure					
5.3.9	Ocean surface acidity					
Ocean sub-surface						
5.4.1	Temperature					
5.4.2	Salinity					
5.4.3	Current					
Land hydrology & cryosphere						
6.3.4	Lakes		■			■
6.3.5	Snow cover		■			
6.3.6	Glaciers and ice caps	■		→	■	■
6.3.7	Ice sheets	■		→		■
6.3.8	Permafrost		■			
6.3.16	Soil moisture	■		→	■	■
Land biosphere						
6.3.9	Albedo	■		→	■	■
6.3.10	Land cover (including vegetation type)		■			■
6.3.11	Fraction of absorbed photosynthetically active radiation				■	■
6.3.12	Leaf area index				■	■
6.3.13	Above-ground biomass		■			
6.3.15	Fire	■		→		■
6.3.17.1	Land-surface temperature		■			

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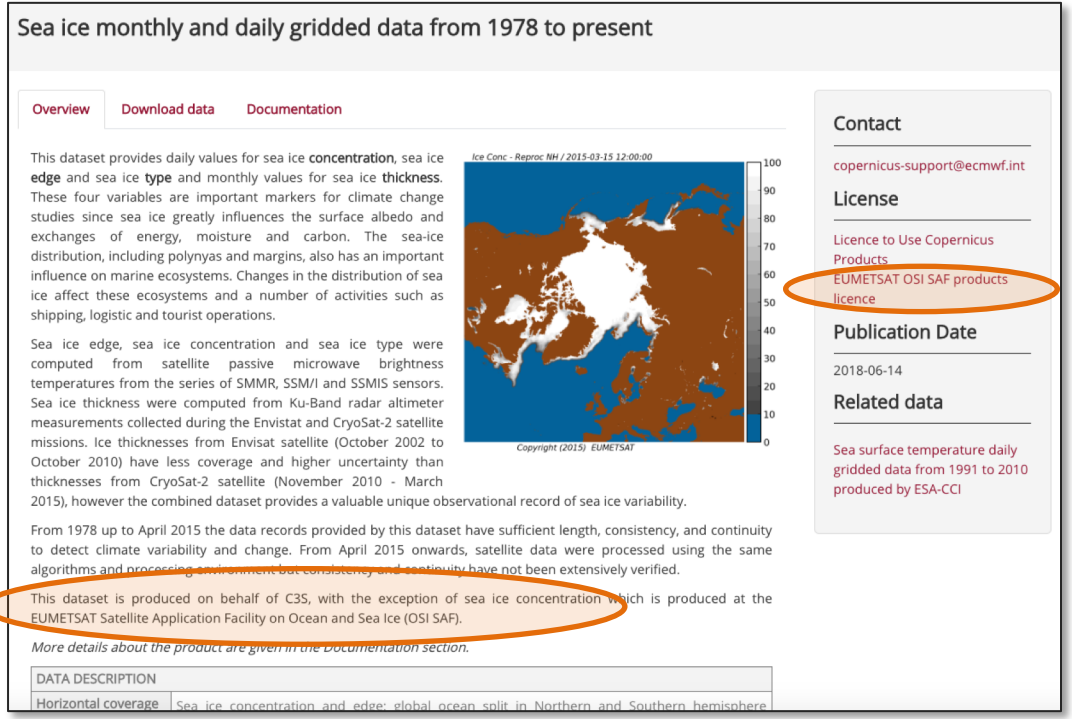
C3S and EUMETSAT Satellite Application Facilities (SAFs)

Several ECV products are brokered from the SAFs.

OSI SAF:
- Sea-ice concentration

ROM SAF:
- Tropospheric water vapour

CM SAF:
- Upper-troposphere humidity
- Surface radiation
- Cloud properties



Sea ice monthly and daily gridded data from 1978 to present

Overview | Download data | Documentation

This dataset provides daily values for sea ice **concentration**, sea ice **edge** and sea ice **type** and monthly values for sea ice **thickness**. These four variables are important markers for climate change studies since sea ice greatly influences the surface albedo and exchanges of energy, moisture and carbon. The sea-ice distribution, including polynyas and margins, also has an important influence on marine ecosystems. Changes in the distribution of sea ice affect these ecosystems and a number of activities such as shipping, logistic and tourist operations.

Ice Conc - Reproc NH / 2015-03-15 12:00:00

100 90 80 70 60 50 40 30 20 10 0

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Sea ice edge, sea ice concentration and sea ice type were computed from satellite passive microwave brightness temperatures from the series of SMMR, SSM/I and SSMIS sensors. Sea ice thickness were computed from Ku-Band radar altimeter measurements collected during the Envistat and CryoSat-2 satellite missions. Ice thicknesses from Envisat satellite (October 2002 to October 2010) have less coverage and higher uncertainty than thicknesses from CryoSat-2 satellite (November 2010 - March 2015), however the combined dataset provides a valuable unique observational record of sea ice variability.

From 1978 up to April 2015 the data records provided by this dataset have sufficient length, consistency, and continuity to detect climate variability and change. From April 2015 onwards, satellite data were processed using the same algorithms and processing environment but consistency and continuity have not been extensively verified.

This dataset is produced on behalf of C3S, with the exception of sea ice concentration which is produced at the EUMETSAT Satellite Application Facility on Ocean and Sea Ice (OSI SAF).

More details about the product are given in the Documentation section.

DATA DESCRIPTION	
Horizontal coverage	Sea ice concentration and edge: global ocean split in Northern and Southern hemisphere

Contact

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Related data

Sea surface temperature daily gridded data from 1991 to 2010 produced by ESA-CCI

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