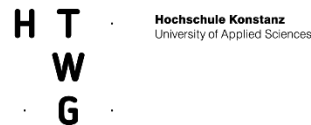


Daten und Informationen für Kommunen - der Copernicus Climate Data Store



An institution of Helmholtz-Zentrum Hereon

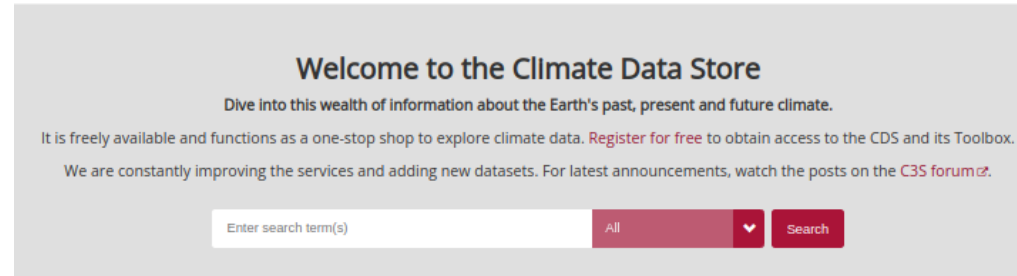
Dr. Vanessa Reinhart
GERICS



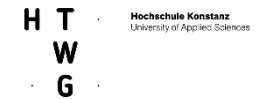
Der Copernicus Climate Data Store



- **Sammlung an Datensätzen, Indikatoren-Sätzen, Anwendungen und Trainings** für verschiedene Nutzendenkreise
- **Qualitätsgeprüfte Klimainformationen**, inklusive Projektionen z.B. der CORDEX-ensembles
- Copernicus-Daten und –Dienste sind für AnwenderInnen **frei** und **offen zugänglich**.

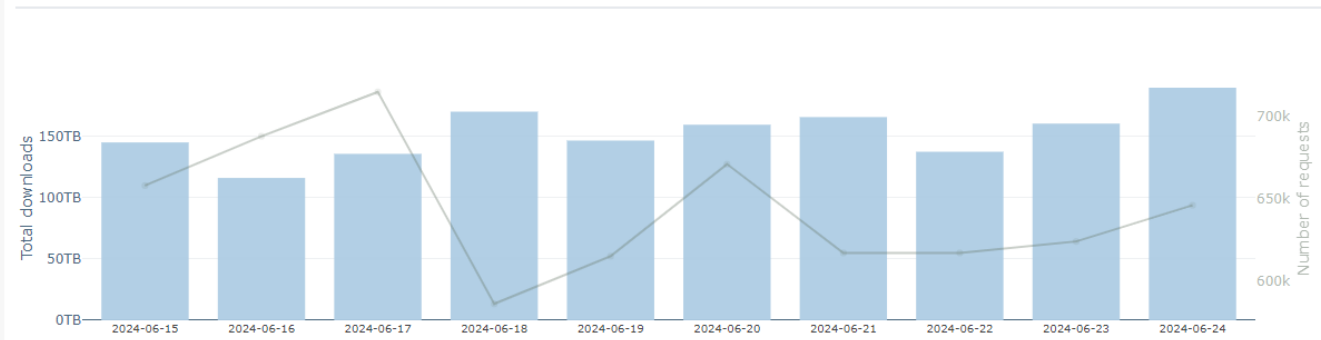


Der Copernicus Climate Data Store



Registered users: **315.273**
Running users: **338**
Queued users: **69**
Running requests: **393**
Queued requests: **1.975**
At: **12:23**
UTC | 25/06/2024

Daily downloads in Terabytes



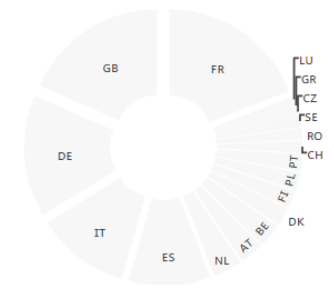
Requests completed

Time Period	Number of Requests	Terabytes
Last 1h	20.370	8.9TB
Last 2h	39.869	17.4TB
Last 3h	64.451	25.0TB
Last 6h	137.687	49.9TB
Last 12h	302.216	98.9TB
Last 24h	609.877	189.7TB

Countries (Running or queued)



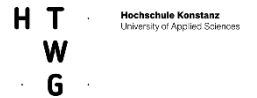
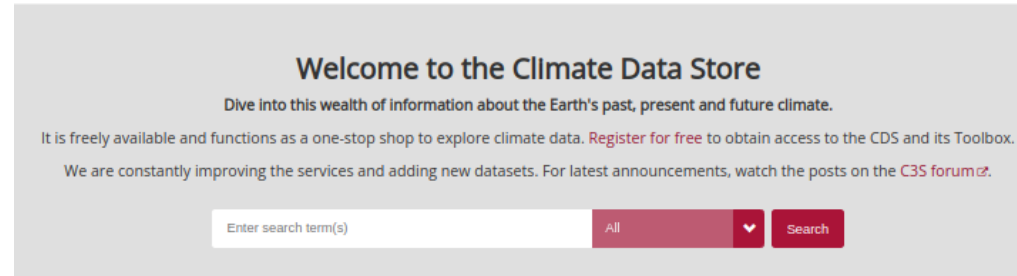
EU/EFTA (Running or queued)



Der Copernicus Climate Data Store



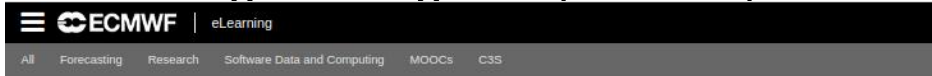
- **Sammlung an Datensätzen, Indikatoren-Sätzen, Anwendungen und Trainings** für verschiedene Nutzendenkreise
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Der Copernicus Climate Data Store



- e-learning Kursangebot (ECMWF)



C3S

Search ECMWF eLearning



Climate Data Discovery – Introduction

This lesson provides an introduction to the different sources of climate data and guides you to find the data you need.



Climate Data Discovery – Advanced

This lesson provides details on the various data sources, and strategies to find the data needed: Processing steps, choosing projections, scenarios, ensembles, variables etc. The lesson is a follow-up of "Climate Data Discovery – Introduction".

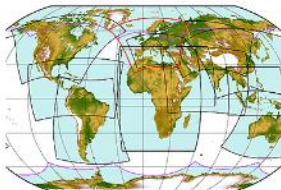


Data Resources - Introduction

This lesson provides an overview of the various types of climate data resources, and teaches what Essential Climate Variables are. It will indicate the main advantages and disadvantages of the various data sources.



Data Resources - Reanalyses



Data Resources - Climate Models



Bias Correction and Downscaling

User Learning Services

C3S User Learning Services offers free training on the use of the [Climate Data Store](#) platform and its content.



Der Copernicus Climate Data Store - C3S Klimaatlas



- <https://atlas.climate.copernicus.eu/atlas>
- Globale Klimaprojektionen und zu erwartende Änderungen - interaktiv und zum download verfügbar

Copernicus Interactive Climate Atlas

Mean temperature (°C) - CMIP6 - Change - rel. to 1850-1900 - Warming 2°C - Annual

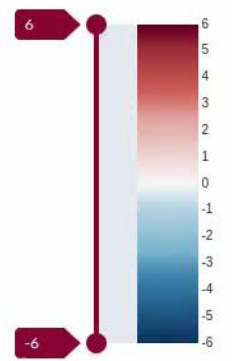
Mean temperature | CMIP6

AR6 Regions



Quantity: Change

Season: Annual



Units: °C

Robustness:

- Robust signal (original color)
- No change or no robust signal
- Conflicting signals

Palette | Autofit | Reset



- Info
- Search
- Zoom
- Fullscreen
- Map
- Layers
- Share
- Download
- Link

Der Copernicus Climate Data Store

- Sammlung an Datensätzen, Indikatoren-Sätzen, Anwendungen und Trainings für verschiedene Nutzendenkreise
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Dive into
It is freely available and functions a
We are constantly improving the
Enter search

Search

Sort by

- Relevancy
- Title
- Type

▼ Product type

- Climate indices (3)
- Climate projections (40)
- In-situ observations (15)
- Reanalysis (48)
- Satellite observations (42)
- Seasonal forecasts (12)

▼ Variable domain

- Atmosphere (composition) (5)
- Atmosphere (surface) (46)
- Atmosphere (upper air) (38)
- Land (biosphere) (23)
- Land (cryosphere) (6)
- Land (hydrology) (29)
- Ocean (biochemistry) (1)
- Ocean (physics) (19)

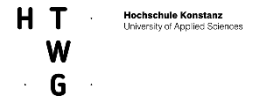
▼ Spatial coverage

- Europe (59)
- Global (97)

▼ Temporal coverage

- Future (57)
- Past (145)
- Present (56)

▼ Sector



Home Search Datasets Applications Toolbox Support Live Climate Atlas

26.06.2024

Daten und Informationen für Konzepte
der Copernicus Climate Data Store

Der Copernicus Climate Data Store - Datenangebot



Search results

A new CDS soon to be launched - expect some disruptions and watch this page for latest. Thank you.

- All
- Applications
- Datasets**
- Providers

- Sort by
- Relevancy**
 - Title
-
- Product type
-
- Variable domain
-
- Spatial coverage
-
- Temporal coverage
-
- Sector
-
- Provider

Essential climate variables for water sector applications derived from climate projections

Dataset Climate projections Global Atmosphere (surface)

This dataset contains 4 Essential Climate Variables (ECV) for the 18 bias adjusted Global Climate Models (GCM) from CMIP5: daily precipitation rate, and daily mean, maximum and minimum temperatures. The data are bias adjusted using the Distribution Based Scaling (DBS) method versus the global reference dataset HydroGFD2.0, both bias adjustment method and global reference dataset developed by the...

Near surface meteorological variables from 1979 to 2019 derived from bias-corrected reanalysis

Dataset Global Atmosphere (surface)

This dataset provides bias-corrected reconstruction of near-surface meteorological variables derived from the fifth generation of the European Centre for Medium-Range Weather Forecasts (ECMWF) atmospheric reanalyses (ERA5). It is intended to be used as a meteorological forcing dataset for land surface and hydrological models. The dataset has been obtained using the same methodology used to deriv...

In situ temperature, relative humidity and wind profiles from 2006 to March 2020 from the GRUAN reference network

Dataset In-situ observations Global Atmosphere (upper air)

The Global Climate Observing System (GCOS) Reference Upper-Air Network (GRUAN) is an international reference observing network, established in 2006, of sites measuring essential climate variables above Earth's surface, designed to fill an important gap in the current global observing system. GRUAN measurements are providing high-quality climate data records from the surface, through the tropospher...

CMIP5 monthly data on single levels

Dataset Global Atmosphere (surface) Atmosphere (upper air) Climate projections

This catalogue entry provides monthly climate projections on single levels from a large number of experiments, models, members and time periods computed in the framework of fifth phase of the Coupled Model Intercomparison Project (CMIP5). The term "single levels" is used to express that the variables are computed at one vertical level which can be surface (or a level close to the surface) or a ded...



Der Copernicus Climate Data Store - Datenangebot



Search results



A new CDS soon to be launched - expect some disruptions and watch this page for latest. Thank you.

heat wave

All Applications Datasets Providers

- Sort by
- Relevancy
- Title
- Product type
- Variable domain
- Spatial coverage
- Temporal coverage
- Sector
- Provider

Showing 1-20 of 36 results for heat wave

Heat waves and cold spells in Europe derived from climate projections

Dataset Health Europe Climate projections Atmosphere (surface)

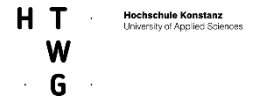
The dataset contains the number of hot and cold spell days using different European-wide and national/regional definitions developed within the C3S European Health service. These heat wave and cold spell days are available for different future time periods and use different climate change scenarios. A heat wave or cold spell is a prolonged period of extremely high or extremely low temperature for...

Climate extreme indices and heat stress indicators derived from CMIP6 global climate projections

Dataset Global Land (biosphere) Climate indices Climate projections

The dataset provides climate extreme indices related to temperature and precipitation as defined by the Expert Team on Climate Change Detection and Indices (ETCCDI), as well as selected heat stress indicators (HSI). The indices are provided for historical and future climate projections (SSP1-2.6, SSP2-4.5, SSP3-7.0, SSP5-8.5) included in the Coupled Model Intercomparison Project Phase 6 (CMIP6) a...

Ocean surface wave indicators for the European coast from 1977 to 2100 derived from climate projections



Der Copernicus Climate Data Store - Datenangebot

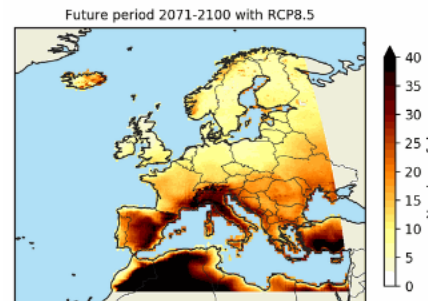


Overview Download data Documentation

The dataset contains the number of hot and cold spell days using different European-wide and national/regional definitions developed within the C3S European Health service. These heat wave and cold spell days are available for different future time periods and use different climate change scenarios.

A heat wave or cold spell is a prolonged period of extremely high or extremely low temperature for a particular region. However, there is a lack of rigorous definitions for heat waves and cold spells. This dataset combines multiple definitions and allows the user to compare European-wide definitions with national/regional definitions.

First, the temperature statistics are calculated, either for the season winter and summer or for the whole year, based on a bias-adjusted EURO-CORDEX dataset. Then, the statistics are averaged for 30 years as a smoothed average from 1971 to 2100. This results in a timeseries covering the period from 1986 to 2085. Finally, the timeseries are averaged for the model ensemble and the standard deviation to this ensemble mean is provided.



DATA DESCRIPTION	
Data type	Gridded
Projection	Regular latitude-longitude grid.
Horizontal coverage	European region (Extent: ~ 27N - 72N, ~22W - 45E)
Horizontal resolution	0.1° x 0.1°
Temporal coverage	From 1986 to 2085
Temporal resolution	Year (season average)
File format	NetCDF 4
Conventions	Climate and Forecast (CF) Metadata Convention v1.6, Attribute Convention for Dataset Discovery (ACDD) v1.3
Update frequency	No updates expected.

MAIN VARIABLES		
Name	Units	Description
Cold spell days	days	Number of cold days in a year using specific definitions.
Heat wave days	days	Number of hot days in a year using specific definitions.



Der CoKLIMAx Datenkatalog



Aufbereitete CDS-Datenkatalog auf der CoKLIMAx-Projektseite:

[Copernicus Daten in der Praxis](#)

The screenshot shows the homepage of the 'Copernicus Daten in der Praxis' website. At the top, there is a navigation bar with links: 'Copernicus Daten in der Praxis', 'Home', 'Über CoKLIMAx', 'Projektpartner', 'News', 'Daten und Anwendungen', and 'Mehr-'. The main header features a large image of a car in the rain with the title 'Copernicus Daten in der Praxis' and the subtitle 'Der Katalog des Copernicus Climate Data Store (CDS)'. Below this is a blue banner with the CoKLIMAx and Copernicus logos, and the text: 'Erkunden Sie das Datenangebot des CDS, veranschaulicht durch Anwendungsbeispiele aus der Praxis. Der Katalog wird fortlaufend aktualisiert und durch neue Anwendungen ergänzt.' The main content area is titled 'Herzlich willkommen im CoKLIMAx Datenkatalog' and includes a paragraph about the catalog's content, a section on 'Essentielle Klimavariablen (ECVs)', and a note about interactive data examples. At the bottom, there are four icons representing 'Wärme', 'Wasser', 'Vegetation', and 'Essentielle Klimavariablen (ECVs)', each with a corresponding data storage icon.



Der CoKLIMAx Datenkatalog

Beispiel des Datensatzes „Heat waves“ im CoKLIMAx-Datenkatalog



Copernicus Daten in der Praxis Home Über CoKLIMAx Projektpartner News Daten und Anwendungen Mehr

Hitze- und Kältewellen über Europa | 1986-2085

Climate Change Service

Das Klima in Europa ändert sich spürbar. Ausprägungen des Klimawandels, die den menschlichen Alltag stark beeinflussen sind Hitze- und Kältewellen, welche nachgewiesenermaßen zunehmen. So werden in den vergangenen Jahren vermehrt lokale und temporäre Hitzerekorde im Sommer gebrochen. Die Folgen für unsere Umwelt: Ökosysteme und Landwirtschaft bekommen immer kürzere Erholungspausen und können schlecht oder gar nicht regenerieren - Es kommt zu Waldbränden und Dürren.

Der vorliegende Datensatz enthält Informationen zur erwarteten Länge von mehrtägigen Hitze- und Kälteereignissen in Europa basierend auf den Modelldaten des EURO-CORDEX Ensembles.

Berechnung der Hitzewellentage

Eine Hitzewelle oder Kältewelle ist ein längerer Zeitraum mit extrem hohen oder extrem niedrigen Temperaturen in einer bestimmten Region. Es fehlt jedoch an strengen Definitionen für Hitzewellen und Kälteperioden. Dieser Datensatz kombiniert mehrere Definitionen und ermöglicht es dem Benutzer, europaweite Definitionen mit nationalen/regionalen Definitionen zu vergleichen.

Basierend auf bereinigten EURO-CORDEX Modelldaten werden Temperatur-Statistiken berechnet, entweder für die Jahreszeiten Winter und Sommer oder für das ganze Jahr. Diese Temperaturstatistiken werden über 30 Jahre als geglätteter Durchschnitt von 1971 bis 2100 gemittelt. Daraus ergibt sich eine Zeitreihe, die den Zeitraum von 1986 bis 2085 abdeckt. Schließlich werden die Zeitreihen für das Modell-Ensemble gemittelt. Als Kennwert für die Variabilität des produzierten Datensatzes wird die Standardabweichung zum Ensemble-Mittelwert mit angegeben.

Relevanz

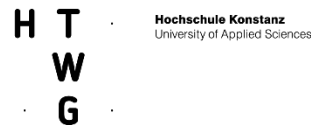
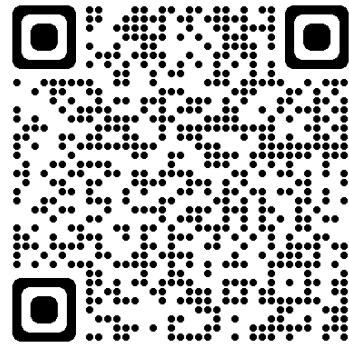
Beispielhaft sind auf der Karte die erwarteten "Heat Wave Days", also Tage die als Hitzetage definiert sind, im RCP Szenario 4.5 für die 30-Jahres-Mittelwerte zwischen 1950 und 2100. Dabei können Zeitreihen erstellt werden, in denen man den Anstieg der mittleren Anzahl an Hitzetagen über den Zeitraum betrachten kann. Im RCP Szenario 4.5 wird berücksichtigt, dass auf dem europäischen Kontinent mittlere Klimaschutzmaßnahmen getätigt werden. Das bedeutet beispielsweise eine moderate Verringerung des anthropogenen Treibhausgasausstoßes. In ganz Europa ist für RCP 4.5 ein Anstieg der mittleren Anzahl an Hitzetagen zu beobachten, wobei Extreme durch die gemittelten Werte



CoKLIMAx



UrbanGreenEye



An institution of Helmholtz-Zentrum Hereon

Projektförderung:

Das Projekt wird im Rahmen der Förderrichtlinie "Entwicklung und Implementierungsvorbereitung von Copernicus Diensten für den öffentlichen Bedarf zum Thema Klimaanpassungsstrategien für kommunale Anwendungen in Deutschland" des Bundesministeriums für Digitales und Verkehr (BMDV) gefördert.

