

Climate Data for Our Future – Acquired, Analysed, Archived

A research scheme for the long-term archival storage of weather and climate data,
funded by the DFG (German Research Foundation)



Hochschule
Bonn-Rhein-Sieg
University of Applied Sciences

universität  **bonn**



We **acquire** weather data to make better predictions and to set up more detailed climate models.

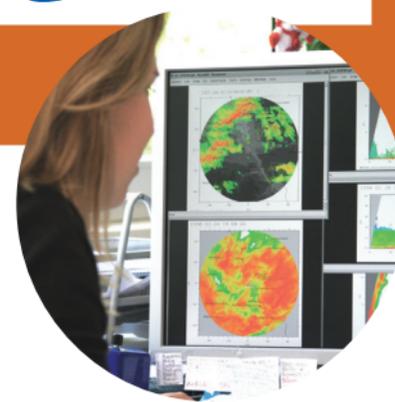
We **analyse** the data to enable researchers to easily use and supplement it.

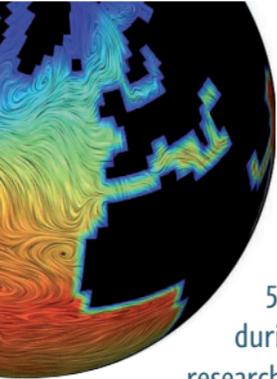
We examine the quality of the data and **archive** it for future generations.

A DFG-funded partnership between

- the Bonn-Rhine-Sieg University of Applied Sciences
- the University of Bonn
- the Deutsches Klimarechenzentrum GmbH

DFG





A System for the Future

When will lightning strike again? Will there be tropical temperatures in this area in 50 years? What were temperatures like during the last ice age? Weather and climate researchers are trying to find answers to these questions. Their findings are based on measured data – temperature, atmospheric pressure, atmospheric humidity and much more. The more comprehensive and detailed the data, the more reliable the findings. However, the researchers lack a set standard to publish and secure the valuable data for the long term.

This is the starting point of the joint research project carried out by the Bonn-Rhine-Sieg University of Applied Sciences, University of Bonn and the German Climate Computing Centre (Deutsches Klimarechenzentrum GmbH): we are developing an automated workflow system

to systematically collect, examine and publish weather and climate data according to set quality standards and rules. In this way scientists have easier access to the data, which will facilitate data collection and ensure data reliability.

The problem is: if the weather data is only published on the website of a research institute, a meteorologist is unlikely to ever find it. The solution to the problem is: previous data collection results can be easily researched and compared to one's own current data using the standardised database. This enables researchers to draw on previous research work, evaluate and compare their own data with other observations and climate model data.

Once the project has been completed, the new workflow system will be made available as open source software to scientists worldwide.

Acquired,
analysed,
archived –
our Workflow »



From the Atmosphere into the Database

» Our system starts with weather data: meteorologists at the University of Bonn process data on the rainfall, temperature, atmospheric pressure and humidity – to begin with in the “Northern Black Forest” region.



» The data is available and then made suitable for long-term archiving. The researchers supplement important information, such as the method or location of data collection.



» Has everything been entered correctly? Before the data is finally stored on the servers of the World Data Center for Climate, it undergoes a quality test that is carried out in several steps.



» The inspected test series is provided with a unique identifier. The data is stored and permanently available to scientists.



The Weather and Climate Storage System

Our standard procedure contributes to reviewing and improving weather forecasts and climate models. Forecasts are made more reliable from one generation to the next. Meteorologists are enabled to issue severe weather warnings in time and to draw people's attention to the consequences of climate change.

Using our system, scientists worldwide gain access to a web-based platform that enables them to comfortably enter and find the data. The system ensures high data quality and long-term use for tomorrow's research.

The screenshot shows a web browser window titled "Atarrabi Publication Agent" with the URL "http://atarrabi.wdc-climate.de". The page content includes a navigation menu with items 1 through 9, where "6. Coverage" is selected. Below the menu, a message asks the user to check location and spatial coverage. The "Location" section has a search box containing "North" and a list of results: "North America", "Northern Black Forest" (highlighted), "Northern Black Forest, Germany", "Northern Mariana Islands", and "Northern Hemisphere". Below this, the "Experiment spatial coverage" section contains input fields for Latitude (Min: 48.275, Max: 51.057) and Longitude (Min: 7.864, Max: 14.04), and Altitude (Min: 203, Max: 407) in meters. A "Show in map" button is present. The "Temporal coverage" section has input fields for "Experiment start date" (01/03/2008) and "end date" (01/03/2008). A "Map view" section on the right shows a map with a rectangular bounding box. At the bottom, there are buttons for "cancel", "save & exit", "back", and "next".

Atarrabi Publication Agent
http://atarrabi.wdc-climate.de

New STD-DOI publication

1. Entity | 2. General | 3. Authors | 4. Contributors | 5. Relations | 6. Coverage | 7. Details | 8. DOI contact | 9. Submission
Please check the location reference and the spatial coverage and enter/change if necessary:

Location

North

North America
Northern Black Forest
Northern Black Forest, Germany
Northern Mariana Islands
Northern Hemisphere

Latitude: 48.5993 - 48.7109 Longitude: 8.2015 - 8.5198

Experiment spatial coverage

Latitude		Longitude		Altitude	
Min	48.275	Min	7.864	Min	203
Max	51.057	Max	14.04	Max	407

Show in map

Temporal coverage

Day Month Year			Day Month Year				
Experiment start date	01	03	2008	end date	01	03	2008

Map view

cancel save & exit back next

How to Contact Our Project Partners



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<http://umwelt.wikidora.com>

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