

VOM MEERESBODEN ZUR ATMOSPHÄRE

THREDDS Data Server a simplified way to discover and access scientific data at GEOMAR

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Franziska Weng, Lisa Paglialonga, Hela Mehrtens, Andreas Lehmann



- Everyday problem in scientific work (F.A.I.R.)
 - exchange data with others (group, institute, external)
 - publish data (review or final)
 - make data/science visible
- Possible solutions/resources available (no complete list...)
 - store data on personal storage
 - out of house (commercial) repositories
 - in-house repositories
- Approach using IHREDDS Data Server (TDS)
 - standardize dataset with sufficient metadata and PID
 - make dataset available and accessible (OPeNDAP, HTTP, WMS, WCS)
 - in-house available with computing infrastructure

It is a web server that provides metadata and data access (using OeNDAP, OGC webservices, HTTP, ...) and is developed and supported by Unidata (UCAR)

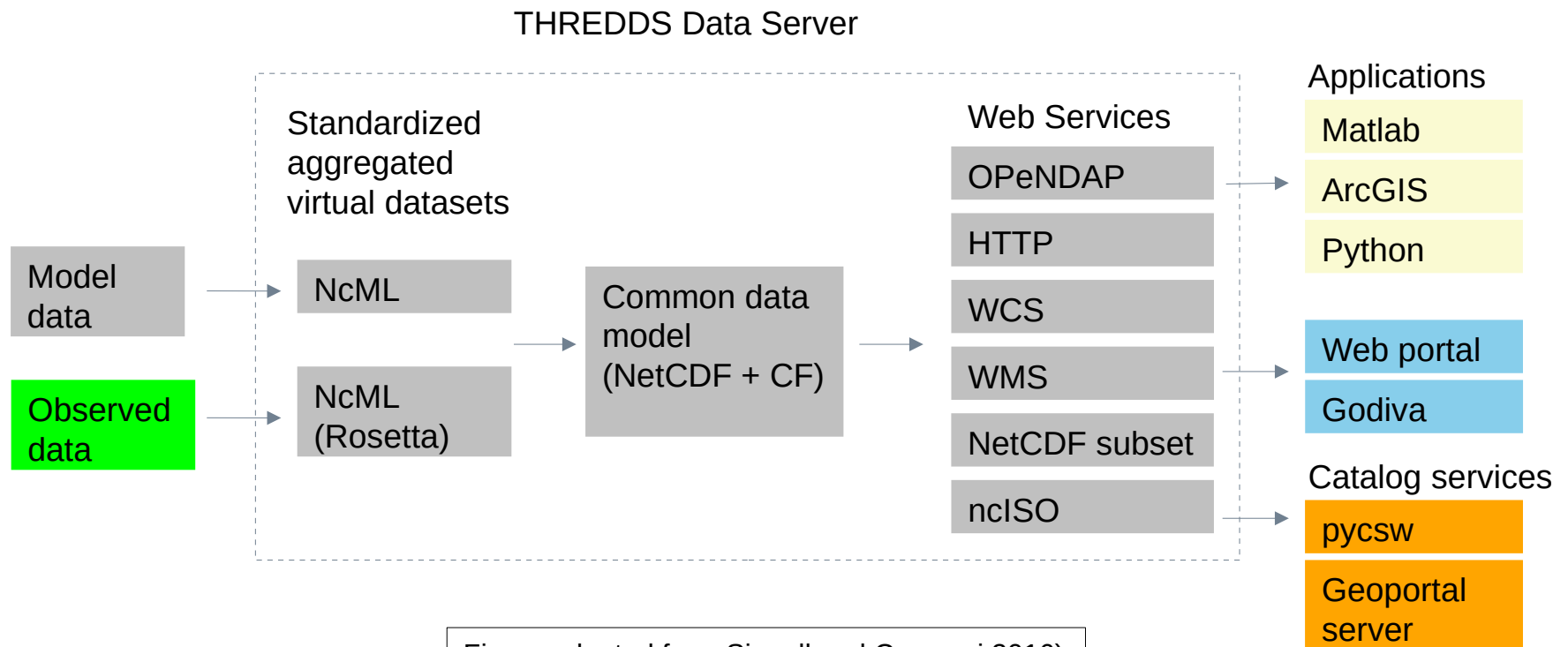
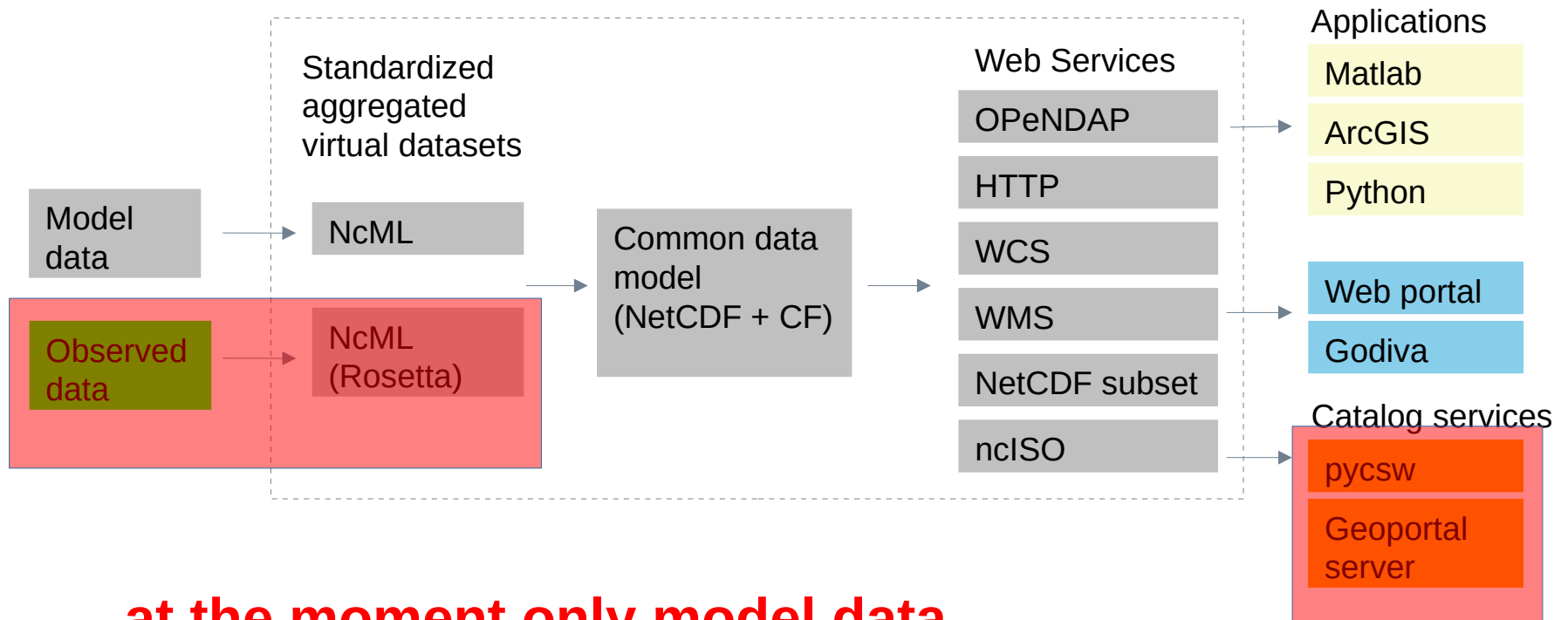


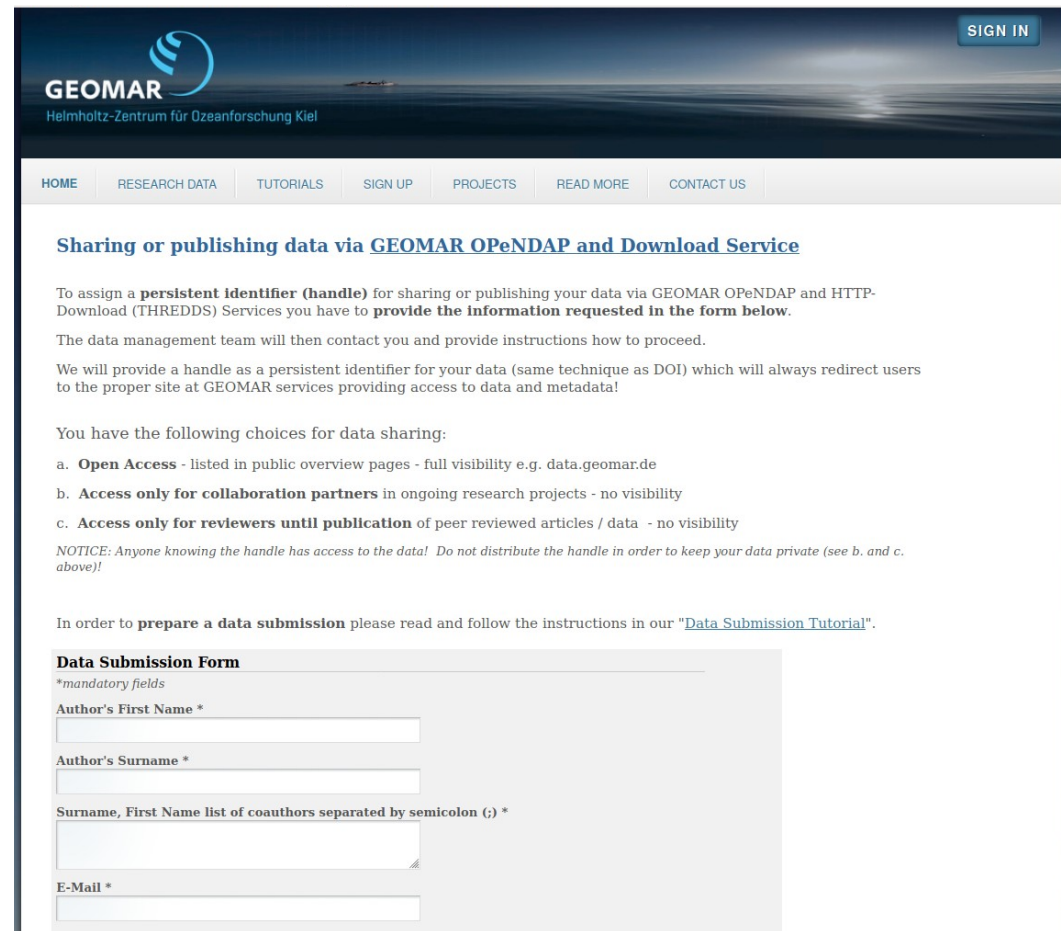
Figure adapted from Signell and Camossi 2016)

THREDDS Data Server



- standard netcdf data (recommended at the moment)
- metadata information to datafiles/dataset
 - title (if publication available add doi to title)
 - Institution
 - creator_name
 - creator_email
 - creator_url („orcid creator“)
 - license
 - keywords (comma seperated list)
 - summary (info on the dataset, repositories, scripts used for post-processing)
 - history (specific info for individual datafiles)

- Data and scripts ready?
- Metadata ready?
- Data submission form



GEOMAR
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Sharing or publishing data via **GEOMAR OPeNDAP and Download Service**

To assign a **persistent identifier (handle)** for sharing or publishing your data via GEOMAR OPeNDAP and HTTP-Download (THREDDSS) Services you have to **provide the information requested in the form below**.

The data management team will then contact you and provide instructions how to proceed.

We will provide a handle as a persistent identifier for your data (same technique as DOI) which will always redirect users to the proper site at GEOMAR services providing access to data and metadata!

You have the following choices for data sharing:

- Open Access** - listed in public overview pages - full visibility e.g. data.geomar.de
- Access only for collaboration partners** in ongoing research projects - no visibility
- Access only for reviewers until publication** of peer reviewed articles / data - no visibility

NOTICE: Anyone knowing the handle has access to the data! Do not distribute the handle in order to keep your data private (see b. and c. above)!

In order to **prepare a data submission** please read and follow the instructions in our "[Data Submission Tutorial](#)".

Data Submission Form

**mandatory fields*

Author's First Name *

Author's Surname *

Surname, First Name list of coauthors separated by semicolon (;) *

E-Mail *

with these informations a
landing page

is generated using an
unique handle

[https://data.geomar.de/downloads/
20.500.12085/a3b523be-dc00-479a-
8706-0b6b74c759d5/](https://data.geomar.de/downloads/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/)

Data access: Supplementary Dataset landingpage









hdl:20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4 > DATA powered by h5ai

Supplementary Dataset

[Handle ID](#) [Related Publication](#) [OceanRep](#) [THREDDS](#) [ISO XML](#)

Handle for this dataset:
[hdl:20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4](https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4)

Please cite this dataset as:
Patara, Lavinia , Böning, Claus W. , and Tanhua, Toste  (2020). *Supplementary Data to "Multi-decadal changes in Southern Ocean ventilation since the 1960s driven by wind and buoyancy forcing"* [Supplementary Dataset].
[hdl:20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4](https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4)
[Copy Data Citation](#)

Supplement to:
Patara, Lavinia , Böning, Claus W. , and Tanhua, Toste  (2020). Multi-decadal changes in Southern Ocean ventilation since the 1960s driven by wind and buoyancy forcing. *Journal of Climate*, 1-53. doi:10.1175/JCLI-D-19-0947.1

The above information originates from https://oceanrep.geomar.de/cgi/inspect/eprint/51248/CM_4EP3/geomar-eprint-51248.txt

Data

| Name | Last modified | Size |
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| <input type="checkbox"/> Data_Fig02_Patara_JClim.nc | 2020-11-26 09:37 | 997 KB |
| <input type="checkbox"/> Data_Fig03_Patara_JClim.nc | 2020-11-26 09:37 | 48 KB |
| <input type="checkbox"/> Data_Fig04_Patara_JClim.nc | 2020-11-26 09:37 | 36 KB |
| <input type="checkbox"/> Data_Fig05_Patara_JClim.nc | 2020-11-26 09:37 | 66 KB |
| <input type="checkbox"/> Data_Fig06_Patara_JClim.nc | 2020-11-26 09:37 | 292 KB |
| <input type="checkbox"/> Data_Fig07_Fig506_Patara_JClim.nc | 2020-11-26 09:37 | 578 KB |
| <input type="checkbox"/> Data_Fig08_Patara_JClim.nc | 2020-11-26 09:37 | 141.5 MB |
| <input type="checkbox"/> Data_Fig09_Fig506_Patara_JClim.nc | 2020-11-26 09:37 | 292 KB |
| <input type="checkbox"/> Data_Fig11_Patara_JClim.nc | 2020-11-26 09:37 | 2.6 MB |

Filter/Search files and folders:
Click filter icon at window top to filter displayed files/folder only on current page. Click search icon at window top to search all files and (sub)folders by pattern. Use prefix "re:" for JavaScript regular expressions, e.g. "re:\.nc" to search for all netCDF files with ".nc" extension. Space separated sequences get OR-ed.

Machine-actionable services:
THREDDS: <https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4@thredds>
ISO XML Metadata: <https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4@metadata>

Data access: Supplementary Dataset landingpage









hdl:20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4 > DATA powered by h5ai

Supplementary Dataset

[Handle ID](#) [Related Publication](#) [OceanRep](#) [THREDDS](#) [ISO XML](#)

Handle for this dataset:
[hdl:20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4](https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4)

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Patara, Lavinia , Böning, Claus W. , and Tanhua, Toste  (2020). *Supplementary Data to "Multi-decadal changes in Southern Ocean ventilation since the 1960s driven by wind and buoyancy forcing"* [Supplementary Dataset].
[hdl:20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4](https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4)
[Copy Data Citation](#)


Supplement to:
Patara, Lavinia , Böning, Claus W. , and Tanhua, Toste  (2020). Multi-decadal changes in Southern Ocean ventilation since the 1960s driven by wind and buoyancy forcing. *Journal of Climate*, 1-53. doi:10.1175/JCLI-D-19-0947.1

The above information originates from https://oceanrep.geomar.de/cgi/inspect/eprint/51248/OAI_EPS/geomar-eprint-51248.txt


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| Name | Last modified | Size |
|--|------------------|----------|
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| <input type="checkbox"/> Data_Fig01_Patara_JClim.nc | 2020-11-26 09:37 | 94.4 MB |
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| <input type="checkbox"/> Data_Fig05_Patara_JClim.nc | 2020-11-26 09:37 | 66 KB |
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| <input type="checkbox"/> Data_Fig11_Patara_JClim.nc | 2020-11-26 09:37 | 2.6 MB |



Filter/Search files and folders:
Click filter icon at window top to filter displayed files/folder only on current page. Click search icon at window top to search all files and (sub)folders by pattern. Use prefix "re:" for JavaScript regular expressions, e.g. "re:\.nc" to search for all netCDF files with ".nc" extension. Space separated sequences get OR-ed.

Machine-actionable services:
THREDDS: <https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4@thredds> 
ISO XML Metadata: <https://hdl.handle.net/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4@metadata>


Data access: Supplementary Dataset thredds catalog entries




Catalog <https://data.geomar.de/thredds/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/catalog.html>

| Dataset | Size | Last Modified |
|---|-----------------|----------------------|
|  Supplementary Data to "Multi-decadal changes in Southern Ocean ventilation since the 1960s driven by wind and buoyancy forcing" (hdl:20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4) | | -- |
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| README.docx | 32.35 Kbytes | 2020-11-26T09:40:02Z |
| README.pdf | 115.4 Kbytes | 2020-11-26T09:40:05Z |
| README.rtf | 185.1 Kbytes | 2020-11-26T09:40:07Z |

GEOMAR THREDDS Server at [GEOMAR Helmholtz Centre for Ocean Research Kiel](#) see [Info](#)
THREDDS Data Server [Version 4.6.15 - 2020-06-16T13:36:16-0600] [Documentation](#)






Catalog <https://data.geomar.de/thredds/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/DATA/catalog.html>

| Dataset | Size | Last Modified |
|--|--------------|----------------------|
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| Data Fig01 Patara_JClim.nc | 94.35 Mbytes | 2020-11-26T08:37:10Z |
| Data Fig02 Patara_JClim.nc | 996.7 Kbytes | 2020-11-26T08:37:11Z |
| Data Fig03 Patara_JClim.nc | 48.35 Kbytes | 2020-11-26T08:37:12Z |
| Data Fig04 Patara_JClim.nc | 36.42 Kbytes | 2020-11-26T08:37:12Z |
| Data Fig05 Patara_JClim.nc | 65.73 Kbytes | 2020-11-26T08:37:12Z |
| Data Fig06 Patara_JClim.nc | 291.6 Kbytes | 2020-11-26T08:37:13Z |
| Data Fig07 FigS06 Patara_JClim.nc | 577.8 Kbytes | 2020-11-26T08:37:14Z |
| Data Fig08 Patara_JClim.nc | 141.5 Mbytes | 2020-11-26T08:37:40Z |
| Data Fig09 FigS06 Patara_JClim.nc | 291.6 Kbytes | 2020-11-26T08:37:41Z |
| Data Fig11 Patara_JClim.nc | 2.620 Mbytes | 2020-11-26T08:37:42Z |


GEOMAR THREDDS Server at [GEOMAR Helmholtz Centre for Ocean Research Kiel](#) see [Info](#)
THREDDS Data Server [Version 4.6.15 - 2020-06-16T13:36:16-0600] [Documentation](#)


Data access: Supplementary Dataset thredds catalog entries

 Catalog <https://data.geomar.de/thredds/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/catalog.html>

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|  DATA/ | | -- |
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| README.rtf | 185.1 Kbytes | 2020-11-26T09:40:07Z |

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THREDDS Data Server [Version 4.6.15 - 2020-06-16T13:36:16-0600] [Documentation](#)

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| Data Fig05 Patara_JClim.nc | 65.73 Kbytes | 2020-11-26T08:37:12Z |
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| Data Fig08 Patara_JClim.nc | 141.5 Mbytes | 2020-11-26T08:37:40Z |
| Data Fig09 FigS06 Patara_JClim.nc | 291.6 Kbytes | 2020-11-26T08:37:41Z |
| Data Fig11 Patara_JClim.nc | 2.620 Mbytes | 2020-11-26T08:37:42Z |

GEOMAR THREDDS Server at GEOMAR Helmholtz Centre for Ocean Research Kiel see [Info](#)
THREDDS Data Server [Version 4.6.15 - 2020-06-16T13:36:16-0600] [Documentation](#)

Data access: Supplementary Dataset access NetCDF data with Godiva2 viewer

GEOMAR THREDDS Server

THREDDS Data Server

Catalog <https://data.geomar.de/thredds/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/DATA/catalog.html>

Dataset: DATA/Data_Fig08_Patara_JClim.nc

- Data format: netCDF
- Data size: 141.5 Mbytes
- Data type: GRID
- Naming Authority: de.geomar
- ID: 20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/DATA/Data_Fig08_Patara_JClim.nc

Documentation:

- Multi-decadal changes in Southern Ocean ventilation since the 1960s driven by wind and buoyancy forcing (doi:10.1175/JCLI-D-19-0947.1)
- Multi-decadal changes in Southern Ocean ventilation since the 1960s driven by wind and buoyancy forcing (<http://oceanrep.geomar.de/51111/>)
- **summary:** Enhanced Southern Ocean ventilation in recent decades has been suggested to be a relevant modulator of the observed change in the 1960s to the 2010s. A global 1/4° configuration of the NEMO-LIM2 ocean sea-ice model including the inert tracer CFC-12 (a proxy of CFC variability of wind stress and/or the buoyancy forcing is suppressed on interannual time scales, are used to unravel the mechanisms driving the 1960s to the 2010s. All simulations suggest a multi-decadal fluctuation of Southern Ocean ventilation, with a decrease until the 1980s-1990s and effects of wind stress and buoyancy forcing. Until the 1980s increased buoyancy gains caused the ventilation decrease, whereas the subsequent meridional overturning circulation. Wind stress emerges as the main driver of ventilation changes, even though buoyancy forcing modulates overall respond similarly to the atmospheric forcing. This study suggests that Southern Ocean ventilation is expected to increase as long as

Access:

1. **OPENDAP:** thredds/dodsC/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/DATA/Data_Fig08_Patara_JClim.nc
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6. **NCML:** thredds/ncml/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/DATA/Data_Fig08_Patara_JClim.nc
7. **UDDC:** thredds/uddc/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/DATA/Data_Fig08_Patara_JClim.nc
8. **ISO:** thredds/iso/20.500.12085/58557ef2-321b-4cc9-b1b1-322eaf0d85b4/DATA/Data_Fig08_Patara_JClim.nc

Dates:

- 2020-11-26T08:37:40Z (modified)
- 2020-12-01 (issued)

Projects:

- Future Ocean

Creators:

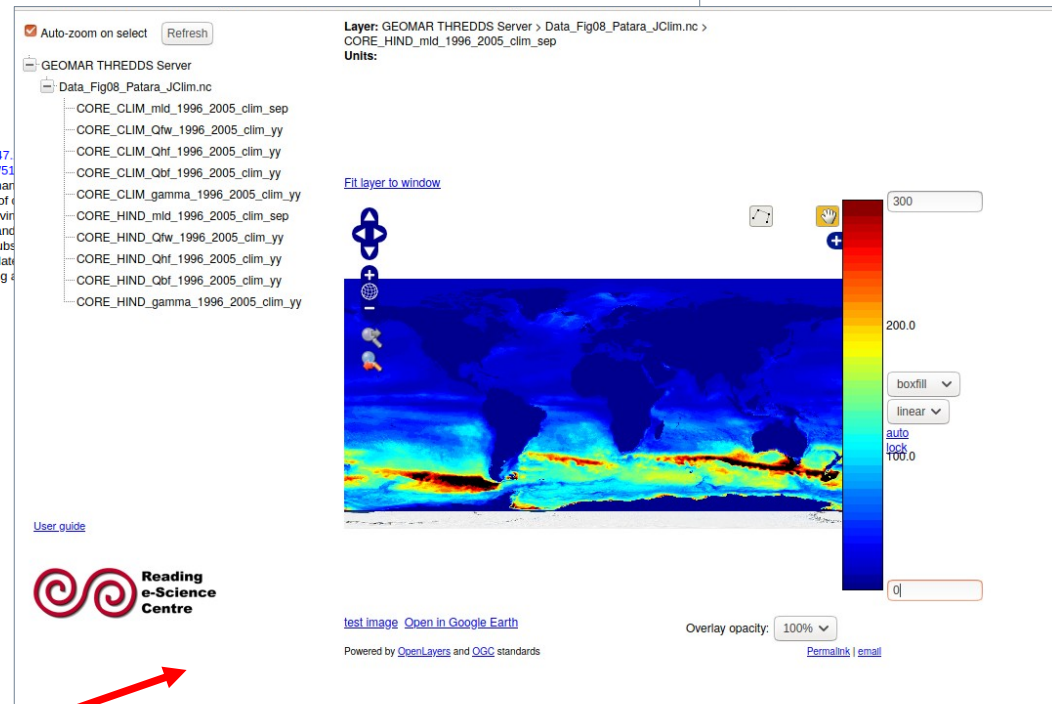
- Patara, Lavinia
 - email: missing
 - <https://orcid.org/0000-0003-4093-3609>
- Böning, Claus W.
 - email: missing
 - <https://orcid.org/0000-0002-6251-5777>
- Tanhua, Toste
 - email: missing
 - <https://orcid.org/0000-0002-0313-2557>

Publishers:

- AMS (American Meteorological Society)
 - email: missing
 - missing

Viewers:

- Godiva2 (browser-based)
- NetCDF-Java ToolsUI (webstart)
- NetCDF-Java ToolsUI (webstart)



Auto-zoom on select Refresh

Layer: GEOMAR THREDDS Server > Data_Fig08_Patara_JClim.nc > CORE_HIND_mid_1996_2005_clim_sep
Units:

GEOMAR THREDDS Server

- Data_Fig08_Patara_JClim.nc
 - CORE_CLIM_mid_1996_2005_clim_sep
 - CORE_CLIM_Qtw_1996_2005_clim_yy
 - CORE_CLIM_Qhf_1996_2005_clim_yy
 - CORE_CLIM_Qbf_1996_2005_clim_yy
 - CORE_CLIM_gamma_1996_2005_clim_yy
 - CORE_HIND_mid_1996_2005_clim_sep
 - CORE_HIND_Qtw_1996_2005_clim_yy
 - CORE_HIND_Qhf_1996_2005_clim_yy
 - CORE_HIND_Qbf_1996_2005_clim_yy
 - CORE_HIND_gamma_1996_2005_clim_yy

Fit layer to window

User guide

Reading e-Science Centre

test image Open in Google Earth

Powered by OpenLayers and OGC standards

Overlay opacity: 100%

Permalink | email

Data access: data exchange landingpage



powered by h5ai

Data: BSIOM_ERAS

Handle ID Restricted THREDDS

LEGAL NOTICE: THESE RESEARCH DATA AND ITS RESOURCE LOCATORS ARE EXCLUDED FROM GENERAL DISTRIBUTION. PLEASE NOTE THAT YOU NEED OWNER'S PERMISSION TO COPY OR USE THESE DATA.

Contact:
alehmann@geomar.de

Handle for this dataset:
[hdl:20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5](https://hdl.handle.net/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5)

Data

| Name | Last modified | Size |
|---|------------------|----------|
| forcing_ERAS | 2020-11-05 09:58 | 351.0 MB |
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| <input type="checkbox"/> BSIOM_ERASforcing_1d_20200101_20201231_oce_OXY.nc | 2020-11-08 19:12 | 1.8 GB |
| <input type="checkbox"/> BSIOM_ERASforcing_1d_20200101_20201231_oce_SAL.nc | 2020-12-08 13:10 | 1.5 GB |
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Filter files/folders:
Click search icon at window top and type to filter displayed files/folders. Space separated sequences get OR-ed. Searches will be treated as JavaScript regular expressions if you prefix them with "re".

Machine-actionable services:
THREDDS:
<https://hdl.handle.net/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5@thredds>

Data access: data exchange access NetCDF data with Godiva2 viewer

GEOMAR THREDDS Server

THREDDS Data Server

Catalog <https://data.geomar.de/thredds/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/catalog.html>

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/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc

- Data format: netCDF
- Data size: 77.25 Mbytes
- Data type: GRID
- ID: 20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc

Documentation:

- rights: Copyright

Access:

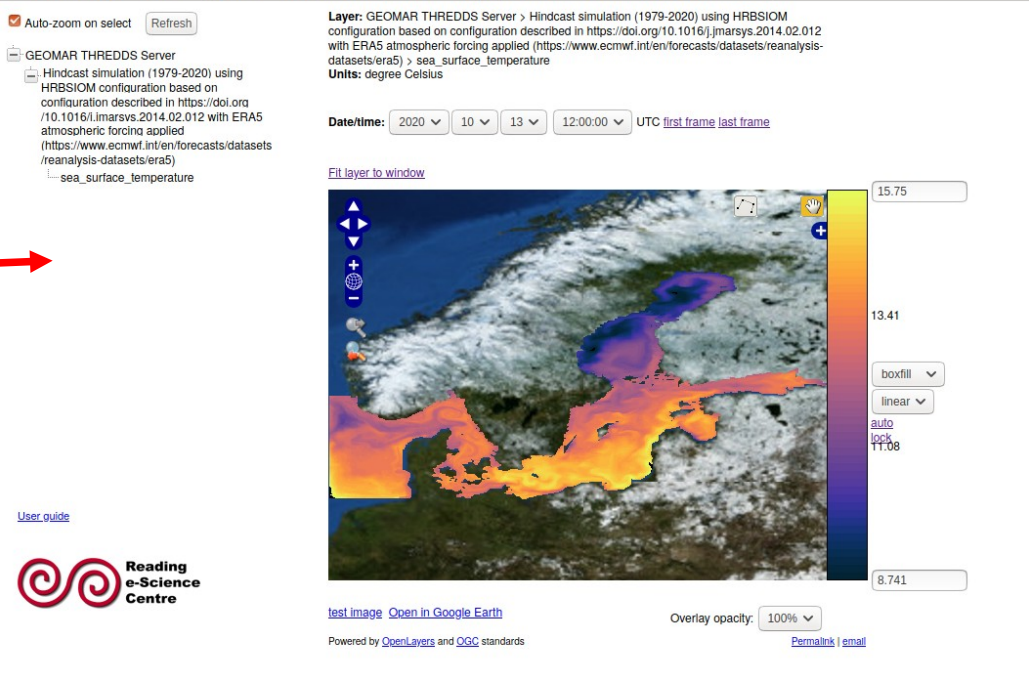
1. OPENDAP: [/thredds/dodsC/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc](https://thredds/dodsC/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc)
2. WCS: [/thredds/wcs/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc](https://thredds/wcs/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc)
3. WMS: [/thredds/wms/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc](https://thredds/wms/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc)
4. NetcdfSubset: [/thredds/ncss/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc](https://thredds/ncss/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc)
5. NCML: [/thredds/ncml/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc](https://thredds/ncml/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc)
6. UDDC: [/thredds/uddc/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc](https://thredds/uddc/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc)
7. ISO: [/thredds/iso/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc](https://thredds/iso/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SST.nc)

Dates:

- 2020-11-08T17:59:59Z (modified)

Views:

- Godiva2 (browser-based)
- NetCDF-Java ToolsUI (webstart)
- Integrated Data Viewer (webstart)



Auto-zoom on select Refresh

GEOMAR THREDDS Server

Hindcast simulation (1979-2020) using HRBSIOM configuration based on configuration described in <https://doi.org/10.1016/j.lmarsys.2014.02.012> with ERA5 atmospheric forcing applied (<https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5>) > sea_surface_temperature

Layer: GEOMAR THREDDS Server > Hindcast simulation (1979-2020) using HRBSIOM configuration based on configuration described in <https://doi.org/10.1016/j.lmarsys.2014.02.012> with ERA5 atmospheric forcing applied (<https://www.ecmwf.int/en/forecasts/datasets/reanalysis-datasets/era5>) > sea_surface_temperature

Units: degree Celsius

Date/time: 2020 10 13 12:00:00 UTC first frame last frame

Fit layer to window

15.75

13.41

8.741

boxfill

linear

auto lock TT.08


Overlay opacity: 100%

test image Open in Google Earth

Powered by OpenLayers and OGC standards

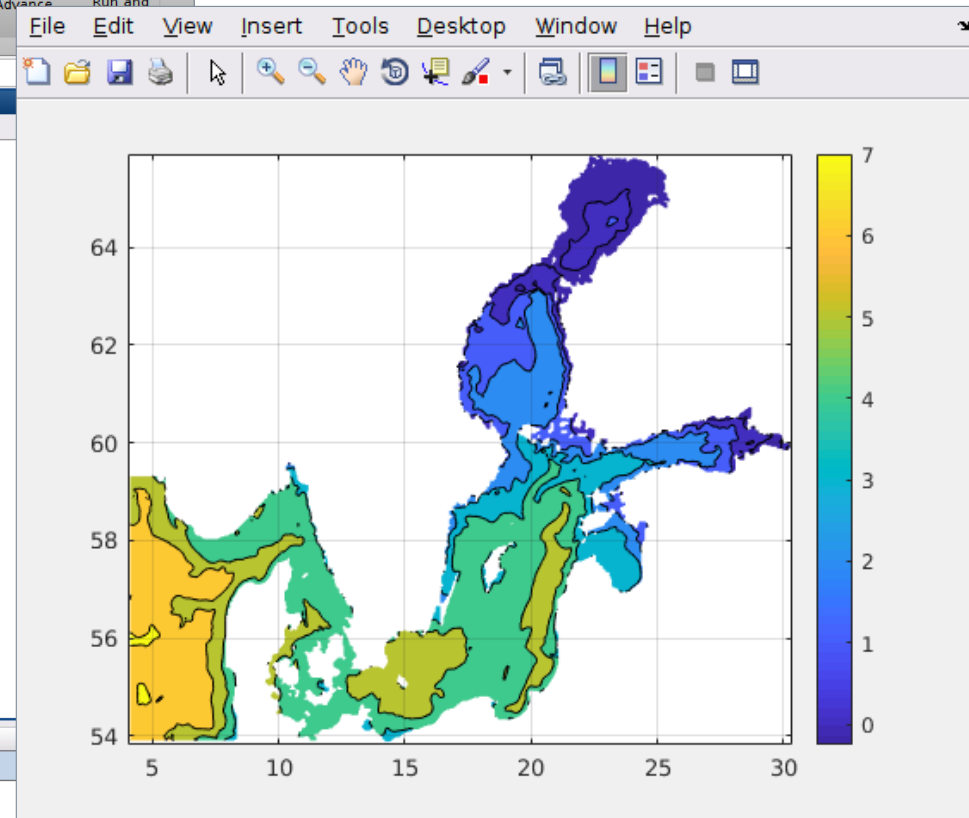
Permalink | email

User guide



Data access: data exchange access NetCDF data with Matlab

```
H... PL... APPS EDI... PU... VIEW Search Documentation Log In
New Open Save Find Files Compare Go To Comment % % % Breakpoints Run Run and Advance Run and
FILE NAVIGATE EDIT BREAKPOINTS RUN
/home / kgetzlaff / Desktop
Editor - /home/kgetzlaff/Desktop/read_BSIOM_THREDDS.m
read_BSIOM_THREDDS.m x +
1 %
2 % Matlab script to read Baltic Sea numerical model data data from THREDDS
3 % server using opendap access
4 %~~~~~
5 close all; clear all;
6 %
7 % pick up path from TDS for opendap access
8 handle_id='20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5';
9 file_name='BSIOM_ERA5forcing_id_20200101_20201231_oce_SST.nc';
10 url=(['https://data.geomar.de/thredds/dodsC/',handle_id,'/',file_name]);
11 % use netcdf commands to access data
12 ncid=netcdf.open(url,'nc_nowrite'); % open remote file
13 % read dimensions (time, longitude, latitude)
14 time=ncread(url,'time');
15 longitude=ncread(url,'longitude');
16 latitude=ncread(url,'latitude');
17 % read variable SST (Sea-Surface-Temperature)
18 sst=ncread(url,'SST'); % sea-surface-temperature [degreeC]
19 % close file
20 netcdf.close(ncid) % close remote data access
21 %
22 % plot SST for day=40 of Year 2020
23 figure('name','SST')
24 contourf(longitude,latitude,sst(:,:,40))
25 colorbar
26 grid on
27
Command Window
New to MATLAB? See resources for Getting Started.
>> read_BSIOM_THREDDS
fx >>
```



- so far:
- updated THREDDS server available
- publish/distribute/access data
- standardize and harmonize dataset collections

- to do:
- harmonize requirements for different datasets
- automate as much as possible of the workflow to minimize workload for people involved
- extend usability to observational data
- extend web service features