



BALTEX Meteorological Data Centre Status and Future

Michael Lautenschlager
World Data Center Climate
Model and Data / Max-Planck-Institute for Meteorology

BALTEX WS, Hamburg September 20th, 2006
St. Petersburg December 6th – 8th, 2006





Status:



Transfer from DWD to WDCC: November 2003

Complete BMDC had been archived on CD: 263 MB with data until Dec. 2001

Data delivery: Estonia up to 2003 / Lithuania up to 2003 / Sweden still in operation (data are archived in original files, no integration into DWD structure)

User requests: 1 request in 2003

BMDC DWD CD: archived in WDCC in experiment BALTEX_MDC_31-03-2003 and split into individual data sets containing national contributions (one data table per country)



CERA - entry information for BALTEX_MDC_31-03-2003 - Mozilla Firefox

http://cera-www.dkrz.de/WDCC/ui/Entry.jsp?acronym=BALTEX_MDC_31-03-2003

CIS LEO EnglishGerman D... Wetter Online eBay Deutschland idealo.de Alice DSL Angebote Aktuelle Nachrichten ...

CERA entry information for BALTEX_MDC_31-03-2003

General Information

Acronym	BALTEX_MDC_31-03-2003
Name	Baltex Meteorological Data Centre (BMDC) from 31.03.2003
Type	experiment
Progress	not given
Project	BALTEX: The Baltic Sea Experiment (BALTEX) The Baltic Sea drainage basin extends over 14 countries. International cooperation is a central prerequisite for the success of BALTEX. Scientists at institutes, universities and operational services of the following countries have contributed to BALTEX: Austria, Belarus, Canada, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, The Netherlands, Poland, Russia, Sweden, United Kingdom, United States of America. For more information please consult BALTEX homepage under http://www.gkss.de/baltex
Summary	These datasets contain data provided by the BALTEX countries until 31.03.2003. Each country provides its own set of meteorological parameters. The datasets are ZIP format, one for each country. The dataset BMDC_README contains the complete information (README and BMDC_structure) as provided on the CD. The data has been delivered on CD by Deutscher Wetterdienst, Abteilung Klima und Umwelt. To use the data please register as BALTEX user (as described on the Baltex homepage http://www.gkss.de/baltex/data.html).
Keyword(s)	observational data
Creation date	23/01/2004
Review date	23/01/2004
Future review date	23/01/2014

[Back to top...](#)

Quality

Accuracy report	not filled
Completeness report	complete content of the CD provided by Deutscher Wetterdienst, Abteilung Klima und Umwelt.

<http://www.gkss.de/baltex>

CERA - Datasets for experiment BALTEX_MDC_31-03-2003 - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://cera-www.dkrz.de/WDCC/ui/DatasetList.jsp?acronym=BALTEX_MDC_31-03-2003

CIS LEO EnglishGerman D... Wetter Online eBay Deutschland idealo.de Alice DSL Angebote Aktuelle Nachrichten ...

Sort by Name Go

	Name	Progress
☐	blr.tar.gz	in work
☐	BMDC_README	in work
☐	country_info.tar	in work
☐	cze.tar.gz	in work
☐	deu.tar.gz	in work
☐	dnk.tar.gz	in work
☐	est.tar.gz	in work
☐	fin.tar.gz	in work
☐	IFM_ferries.tar.gz	in work
☐	intas.tar.gz	in work
☐	kal.tar.gz	in work
☐	ltu.tar.gz	in work
☐	lva.tar.gz	in work
☐	nor.tar.gz	in work
☐	pol.tar.gz	in work
☐	rus.tar.gz	in work
☐	SST_finland.tar.gz	in work
☐	svk_tar_gz	in work
☐	swe_tar_gz	in work

6 MB (zipped binary file)

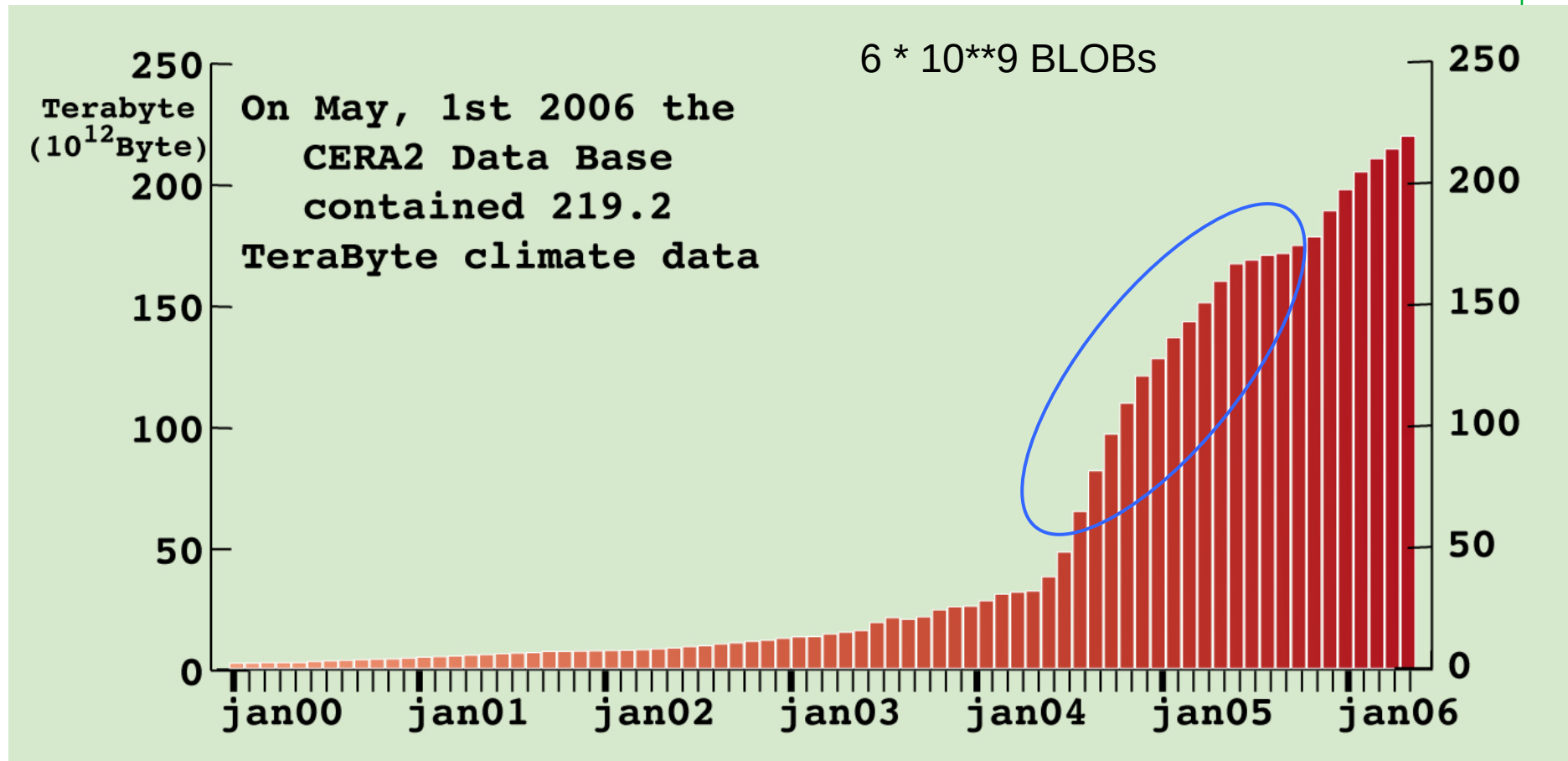
56 MB (zipped binary file)

Fertig



Data Import into WDC Climate

ECHAM5/MPI-OM IPCC AR4 Scenarios (ca. 110 TB)



Data matrix of model experiment

Model variables →

Model Run Time ↓

	T2M	Precip	SLP	2D variables	.	.	Temp	Water vapour	3D variables	.	.
T1											
T2											
T3											
...											
Tn											
...											
Tend											

Raw data file in DKRZ Archive

2 D: small BLOBS (180 KB)

3 D: large BLOBS (3 MB)

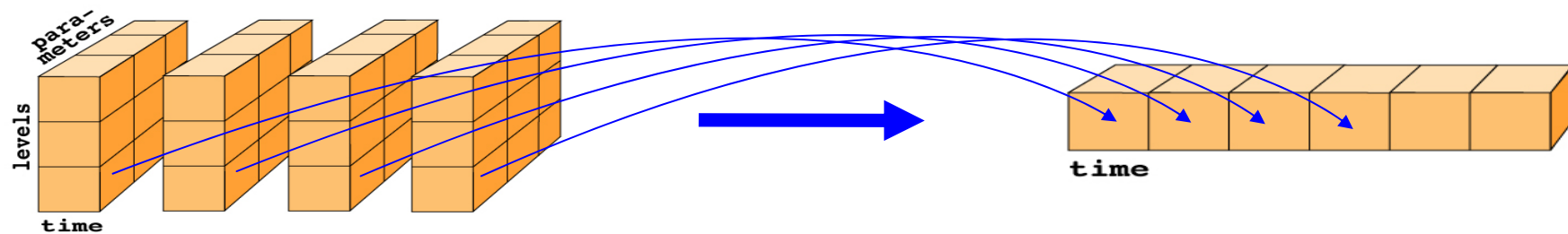
Raw data file: direct model output (1.3 – 16.2 GB)

Each column is one BLOB Table in CERA-DB

Climate Model Data Structures

CERA Statistics 08.08.2006

size: 237.2681 TB
experiments: 712
datasets: 84988
blobs 5035268341



original data structure (4-D)

Application related data structure (2-D)



IPCC AR4 ECHAM5/MPI-OM data portal
as an example implementation of a
WDCC contribution to a future BALTEX
data management system.





ipcc wg1 - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://www.mad.zmaw.de/IPCC/ipcc.wg1.html

CIS - Recent news Abwesenheiten-M&... LEO EnglishGerman ... Reuters Wetter Online eBay Deutschland idealo.de

IPCC ECHAM5-MPI-OM experiments

First Model Simulations for the New IPCC Report Completed

The first model simulations for the fourth IPCC Report, scheduled for early 2007, have been successfully completed by scientists from Max Planck Institute for Meteorology (MPI—M) and the Group "Model and Data" at the German Climate Computing Centre (DKRZ). In this Assessment Report No 4 (AR4) of the Intergovernmental Panel on Climate Change, IPCC (see also www.ipcc.ch), the actual knowledge on the state and the change of climate is integrated.

The simulations realized with a new climate model developed at MPI-M can be characterized as follows:

1. Reconstruction of an "undisturbed" pre—industrial climate
2. Climate change experiments forced with observed atmospheric greenhouse gas and aerosol concentrations since the middle of the 19th century
3. Scenario experiments of climate change based on different assumptions on future greenhouse gas and aerosol concentrations
4. CO2 sensitivity experiments (1% per year increase)

IPCC WDCC

IPCC AR4 HH

Experiments

Variables

First Results

IPCC DDC

IPCC TAR

Fertig





User Interface 3: Direct Access

Max-Planck-Institut für Meteorologie
Max Planck Institute for Meteorology



ipcc table of experiments - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://www.mad.zmaw.de/IPCC/ipcc.tab.html

CIS - Recent news Abwesenheiten-M&... LEO EnglishGerman ... Reuters Wetter Online eBay Deutschland idealo.de

IPCC Experiments

Name	Mean		Period	Description
	6-hour	monthly		
EH5-T63L31_OM-GR1.5L40_CTL	6H	MM	2150-2655	Pre-industrial control experiment
EH5-T63L31_OM-GR1.5L40_20C_1	6H	MM	1860-2000	20th century with anthropogenic forcing (greenhouse gases, sulfate) initialized in year 2190 of CTL
EH5-T63L31_OM-GR1.5L40_20C_2	6H	MM	1860-2000	2. realisation (initialized in year 2215 of CTL)
EH5-T63L31_OM-GR1.5L40_20C_3	6H	MM	1860-2000	3. realisation (initialized in year 2240 of CTL)
				Commitment experiment with

Fertig

IPCC WDCC
IPCC AR4 HH
Experiments
Variables
First Results





ipcc table of variables - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://www.mad.zmaw.de/IPCC/ipcc.par.html

CIS - Recent news Abwesenheiten-M&... LEO EnglishGerman ... Reuters Wetter Online eBay Deutschland idealo.de



IPCC WDC
IPCC AR4 HH

Experiments

Variables

First Results

DKRZ

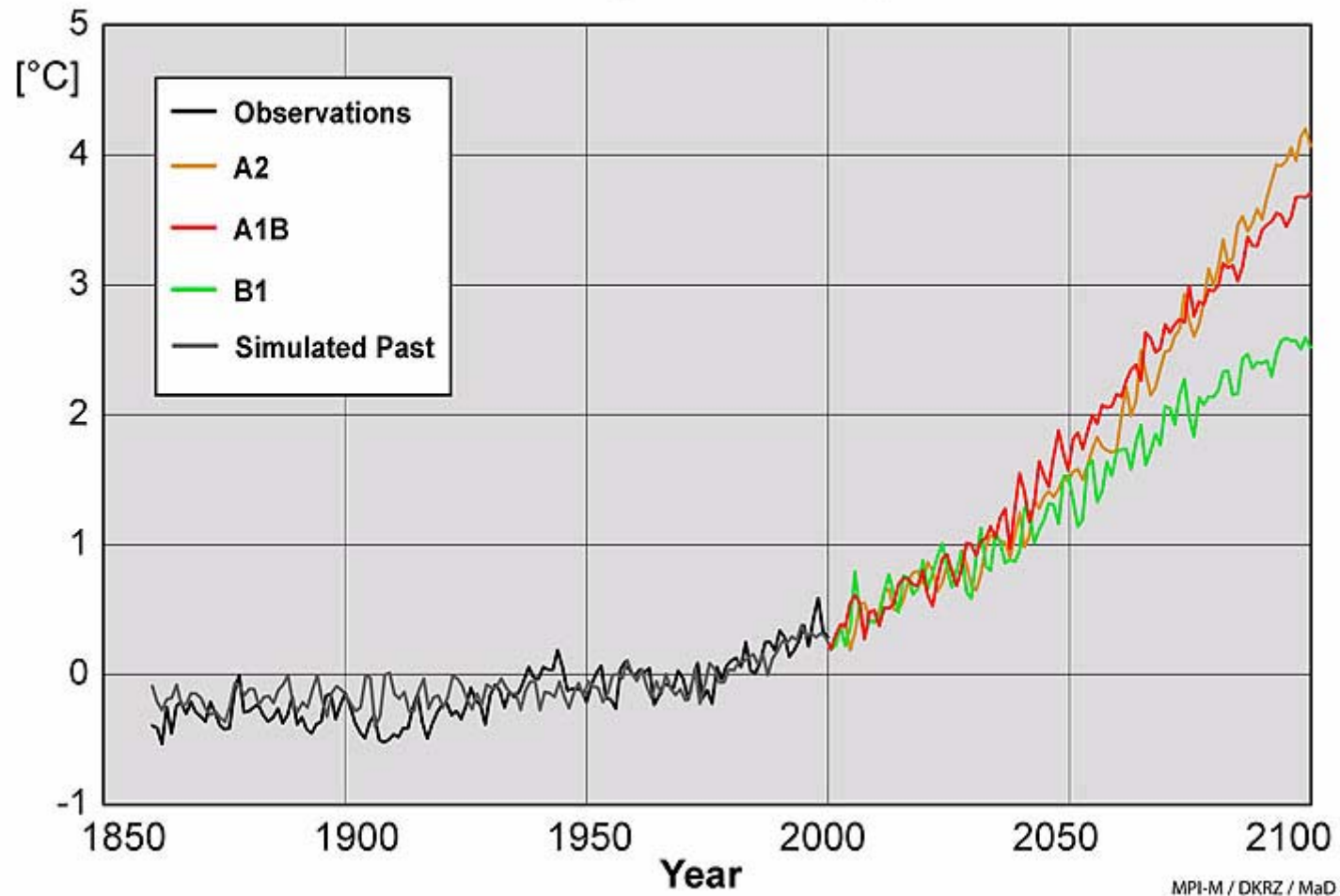
Variables ECHAM5

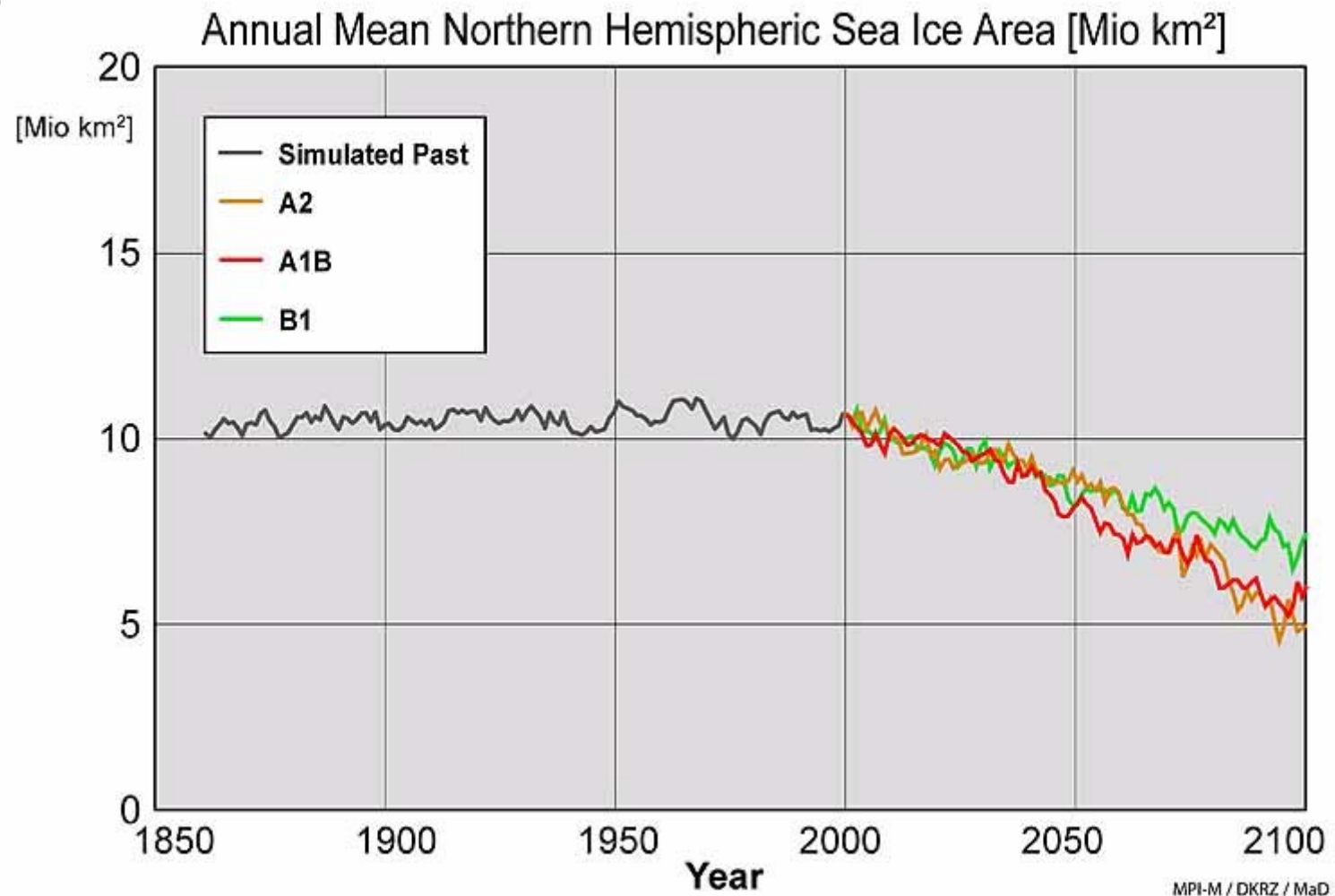
CODE	Levels	Internal Name	Type	Long Name	Unit	PCMDI
91	1	TRFLIAC	g m	LW flux over ice	[W/m**2]	
92	1	TRFLWAC	g m	LW flux over water	[W/m**2]	
93	1	TRFLLAC	g m	LW flux over land	[W/m**2]	
94	1	SOFLIAC	g m	SW flux over ice	[W/m**2]	
95	1	SOFLWAC	g m	SW flux over water	[W/m**2]	
96	1	SOFLLAC	g m	SW flux over land	[W/m**2]	
97	1	FRIAC	g m	ice cover (fraction of grid box)	[]	
102	1	TSI	g	surface temperature of ice	[K]	
103	1	TSW		surface temperature of water	[K]	

Fertig



IPCC SRES Scenarios: Temperature Change relative to 1961-1990







User Interface 3: Direct Access

Max-Planck-Institut für Meteorologie
Max Planck Institute for Meteorology



<http://ipcc.wdc-climate.de/>

ipcc table of experiments - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

[←](#) [→](#) [↺](#) [✕](#) [🏠](#) [🖨](#) [http://www.mad.zmaw.de/IPCC/ipcc.tab.html](#) [Go](#) [🔍](#)

[📰 CIS - Recent news](#) [📄 Abwesenheiten-M&D...](#) [🇬🇧 LEO EnglishGerman ...](#) [🌐 Reuters](#) [🌐 Wetter Online](#) [📄 eBay Deutschland](#) [📄 idealo.de](#) [»](#)

IPCC WDCC
IPCC AR4 HH
[Experiments](#)
[Variables](#)
[First Results](#)

IPCC Experiments

Name	Mean		Period	Description
	6-hour	monthly		
EH5-T63L31_OM-GR1.5L40_CTL	6H	MM	2150-2655	Pre-industrial control experiment
EH5-T63L31_OM-GR1.5L40_20C_1	6H	MM	1860-2000	20th century with anthropogenic forcing (greenhouse gases, sulfate) initialized in year 2190 of CTL
EH5-T63L31_OM-GR1.5L40_20C_2	6H	MM	1860-2000	2. realisation (initialized in year 2215 of CTL)
EH5-T63L31_OM-GR1.5L40_20C_3	6H	MM	1860-2000	3. realisation (initialized in year 2240 of CTL)
				Commitment experiment with

Fertig





DOI null - Mozilla Firefox

http://cera-www.dkrz.de/WDCC/doi/Experiment.jsp?acronym=EH5-T63L31_

CIS - Recent news Abwesenheiten-M&... LEO EnglishGerman ... Reuters Wetter Online eBay Deutschland idealo.de

DOI for Scientific and Technical Data

null

Citation

null (2005): IPCC-AR4 MPI-ECHAM5_T63L31 MPI-OM_GR1.5L40 20C3M(climate of the 20th Century experiment) run no.1: atmosphere monthly mean values MPImet/MaD Germany. [doi: null]

Publication Date

2005-09-27

Author(s)

null

Title

IPCC-AR4 MPI-ECHAM5_T63L31 MPI-OM_GR1.5L40 20C3M(climate of the 20th Century experiment) run no.1: atmosphere monthly mean values MPImet/MaD Germany

Summary

Scenario run using ECHAM5.2.02a coupled to MPI-OM Vers. 1.0 GR1.5L40, starting 1860 from pre-industrial control run (CTL). The simulation was run on a NEC-SX6 (hurrikan). Atmospheric data is stored every 6 hours. Monthly means are available, too. Ocean data are available. Related experiments: - EH5-T63L31_OM-GR1.5L40_CTL - EH5-T63L31_OM-GR1.5L40_A1B_1,2,3 - EH5-T63L31_OM-GR1.5L40_B1_1,2,3 - EH5-T63L31_OM-GR1.5L40_A2_1,2,3 - EH5-T63L31_OM-GR1.5L40_B2_1,2,3

Fertig





DOI null - Mozilla Firefox

http://cera-www.dkrz.de/WDCC/doi/Experiment.jsp?acronym=EH5-T63L31_

CIS - Recent news Abwesenheiten-M&... LEO EnglishGerman ... Reuters Wetter Online eBay Deutschland idealo.de

Project

IPCC-Hamburg Climate Model Simulation (IPCC_HH)
The Intergovernmental Panel on Climate Change (IPCC) has been established by WMO and UNEP to assess scientific, technical and socio-economic information, relevant for the understanding of climate change, its potential impacts and options for adaption and migration. Continued description about the work of the IPCC will be found at the homepage (<http://www.ipcc.ch>) and (www.grida.no/climate/ipcc). As a further development the Special Report on Emission Scenarios (SRES) have been constructed, to explore future developments in the global environment with special reference to the production of greenhouse gases and aerosol precursor emissions. A set of four scenarios families (A1, A2, B1, B2) have been developed (see also <http://www.grida.no/climate/ipcc/emission/index.htm>) These data are available at the World Data Center for Climate, Hamburg. (wdc-climate.de).

Available datasets (286)

EH5_OM_20C_1_MM_1_TSOIL: deep soil temperatures (5 layers)	Dataset Information >>
EH5_OM_20C_1_MM_1_TSOIL: deep soil temperatures (5 layers)	
EH5_OM_20C_1_MM_2_TSOIL: deep soil temperatures (5 layers)	
EH5_OM_20C_1_MM_3_TSOIL: deep soil temperatures (5 layers)	
EH5_OM_20C_1_MM_4_TSOIL: deep soil temperatures (5 layers)	
EH5_OM_20C_1_MM_5_TSOIL: deep soil temperatures (5 layers)	
EH5_OM_20C_1_MM_ACLCAC: cloud cover	
EH5_OM_20C_1_MM_ACLCOV: total cloud cover	
EH5_OM_20C_1_MM_AHFCO: conductive heat flux through ice	
EH5_OM_20C_1_MM_AHFL: latent heat flux	
EH5_OM_20C_1_MM_AHFLIAC: latent heat flux over ice	
EH5_OM_20C_1_MM_AHFLIAC: latent heat flux over land	

R1.5L40_20C_1_MM can be obtained from cera-www.dkrz.de/CERA/index.html for





DOI null - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://cera-www.dkrz.de/WDCC/doi/Dataset.jsp?acronym=EH5_OM_20C_1 Go

CIS - Recent news Abwesenheiten-M&... LEO EnglishGerman ... Reuters Wetter Online eBay Deutschland idealo.de

Unit
Kelvin

Data Format
GRIB

Data Size
22168800 Bytes

Corresponding Experiment(s)
[IPCC-AR4 MPI-ECHAM5_T63L31 MPI-OM_GR1.5L40 20C3M\(climate of the 20th Century experiment\) run no.1: atmosphere monthly mean values MPImet/MaD Germany](#)

Access to data
The data contained in the dataset with acronym EH5_OM_20C_1_MM_TSOIL_1 can be obtained from the World Data Center Climate (WDCC). Please take a look at <http://cera-www.dkrz.de/CERA/index.html> for information on downloading data.

Contact
For further information please contact data@dkrz.de.

[M&D Data Section](#)

Fertig





Future



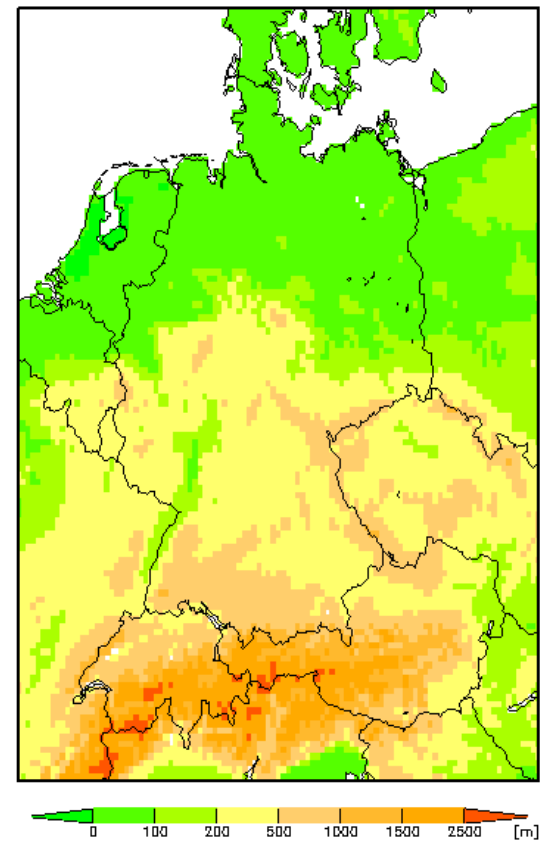
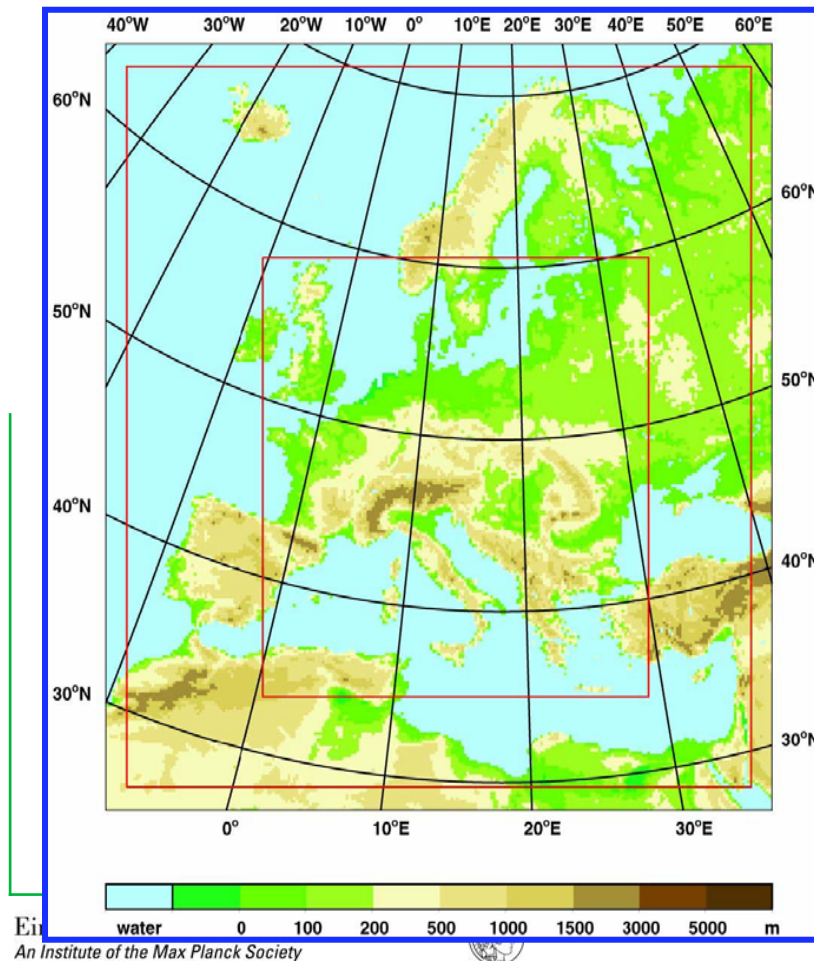
Calculation of **RCM IPCC AR4** scenarios for **Europe**:

REMO 10 km

CLM 1/6 degr.

REMO + CLM 0.44 degr.

Add another **100 – 150 TB** to WDCC DB-system





The future BALTEX data management system might be:

Federation of geographically distributed and already existing data archives

- o Meteorological measurements: UNIDART (www.dwd.de/UNIDART)

- o RCM / GCM results: WDCC (www.wdc-climate.de)

- o Additional, topic related long-term data archives





Possible implementation of BALTEX federated data system:

A) Start: Web catalogue providing information on available data sets and their access procedures

B) BALTEX data portal: web-based and searchable catalogue of available data sets including detailed access information

C) BALTEX federated data system: Web-portal including the BALTEX data catalogue and transparent data access ("one-stop-shop")

Question: If A) – C) seem to be feasible what is the time line of implementation?

