



COPS is the Intensive Observation Period of the Priority Program 1167 "Quantitative Precipitation Forecast" of the German Research Foundation (DFG)

Long term data archive

COPS / GOP / D-PHASE

5th COPS workshop
26.-28. March 2007, Stuttgart

Claudia Wunram
Hannes Thiemann
cops@zmaw.de





Data archive

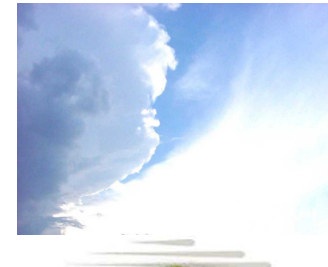


Long term data archive for
COPS, GOP and D-PHASE

hosted at
World Data Centre for Climate (WDCC)

run by the group
“Model and Data” (M&D)

at
Max Planck Inst. for Meteorology (MPI),
in
Hamburg, Germany.

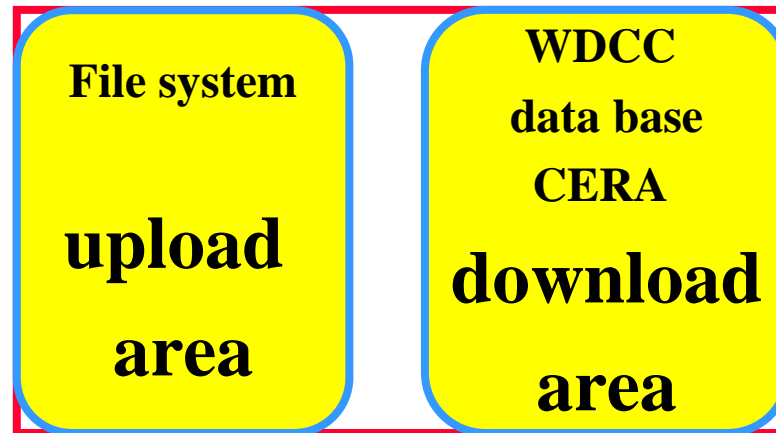




Long term data archiving

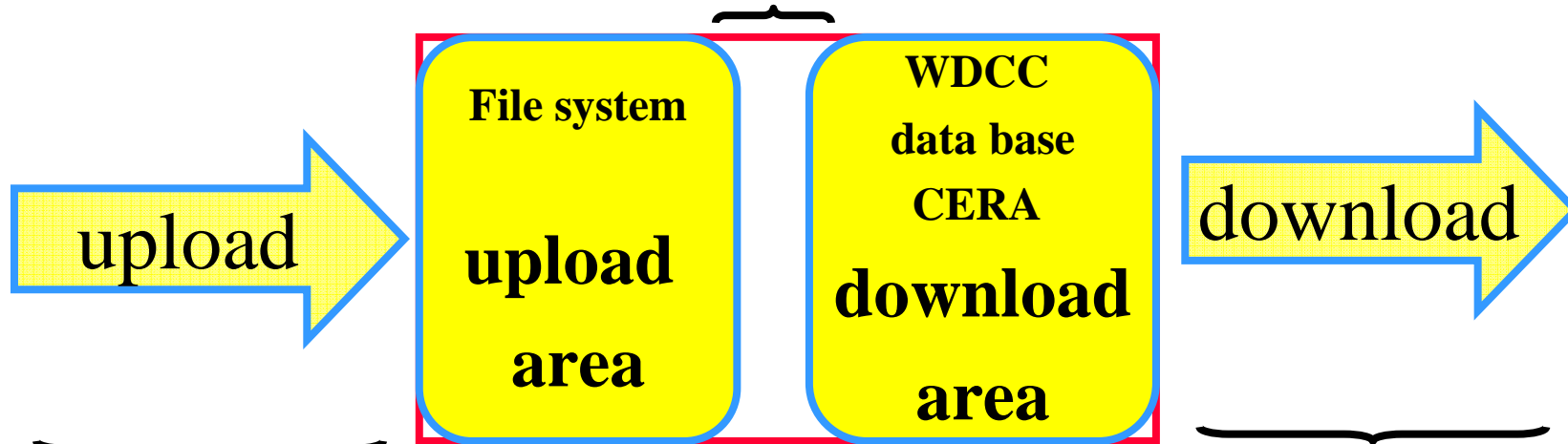
- archive instrument data,
model data,
quicklooks and alerts
- For observation periods:
 - GOP: JAN 07 – DEC 07
 - COPS: JUN 07 – AUG 07
 - DPHASE: JUN 07 – NOV 07
- define data archiving structure and meta data layout







Generates
sequential
time series



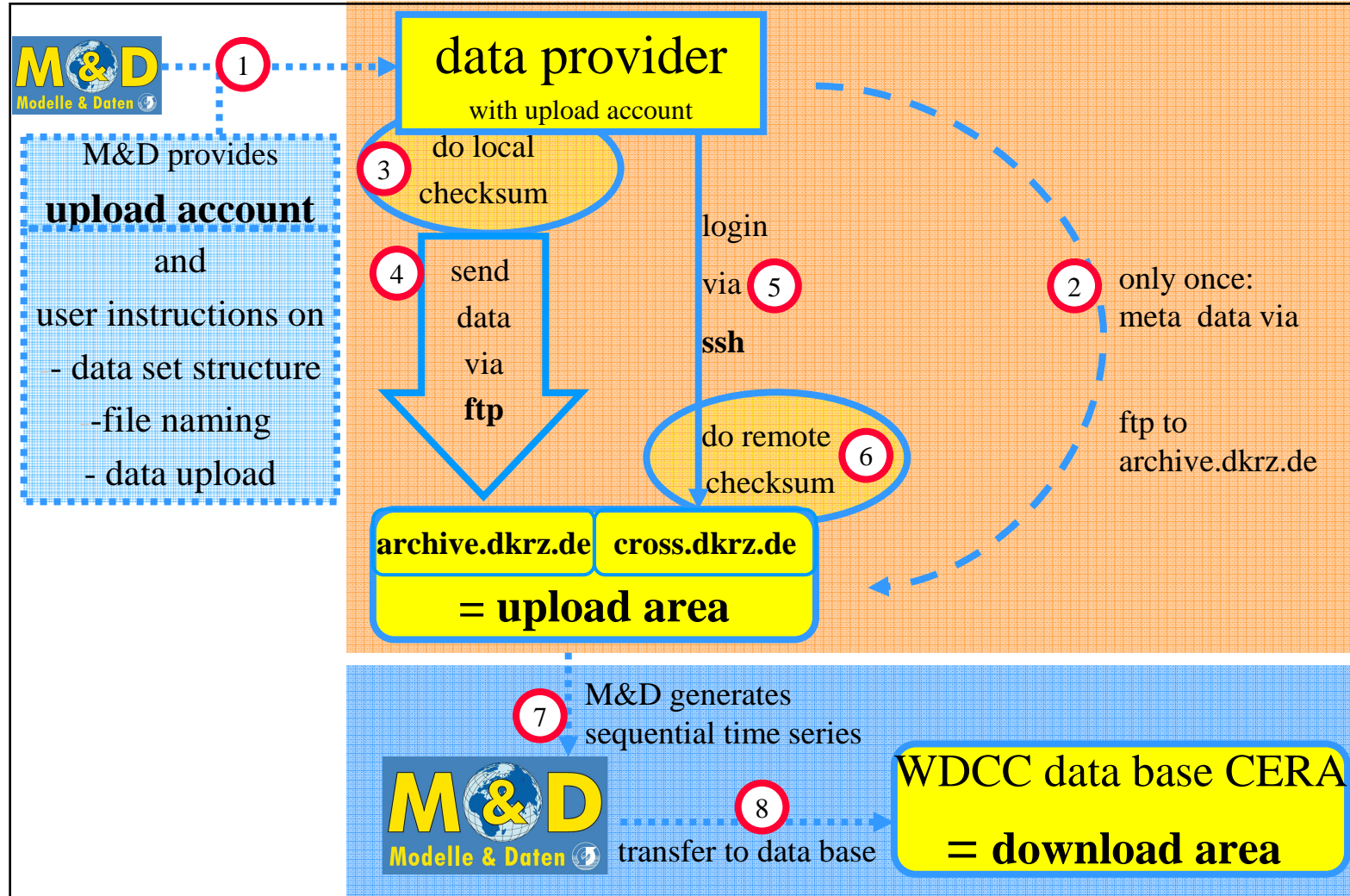
upload files
=
single time step

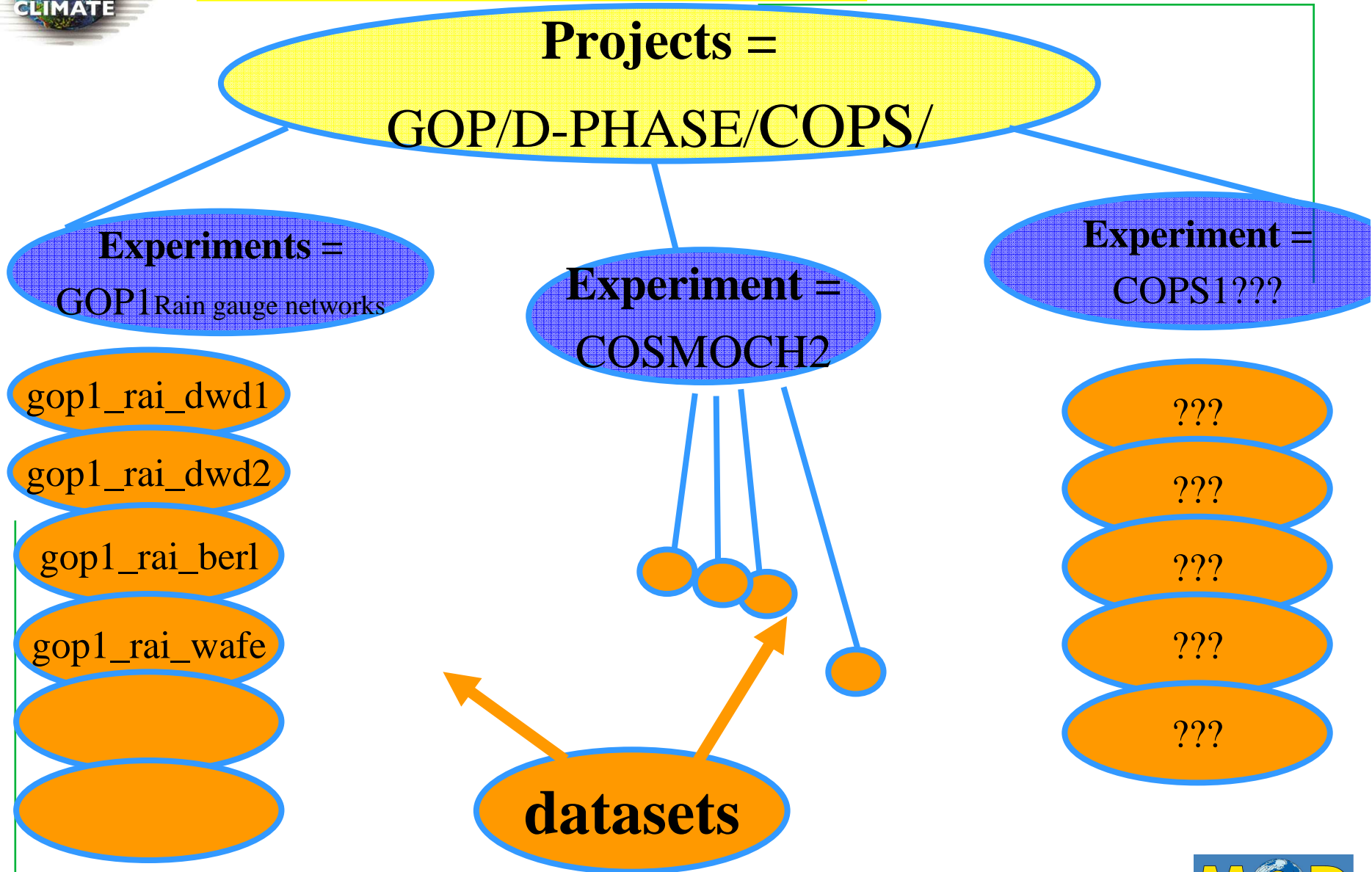
Upload data structure
defines the access options
for downloading

download files
=
time series



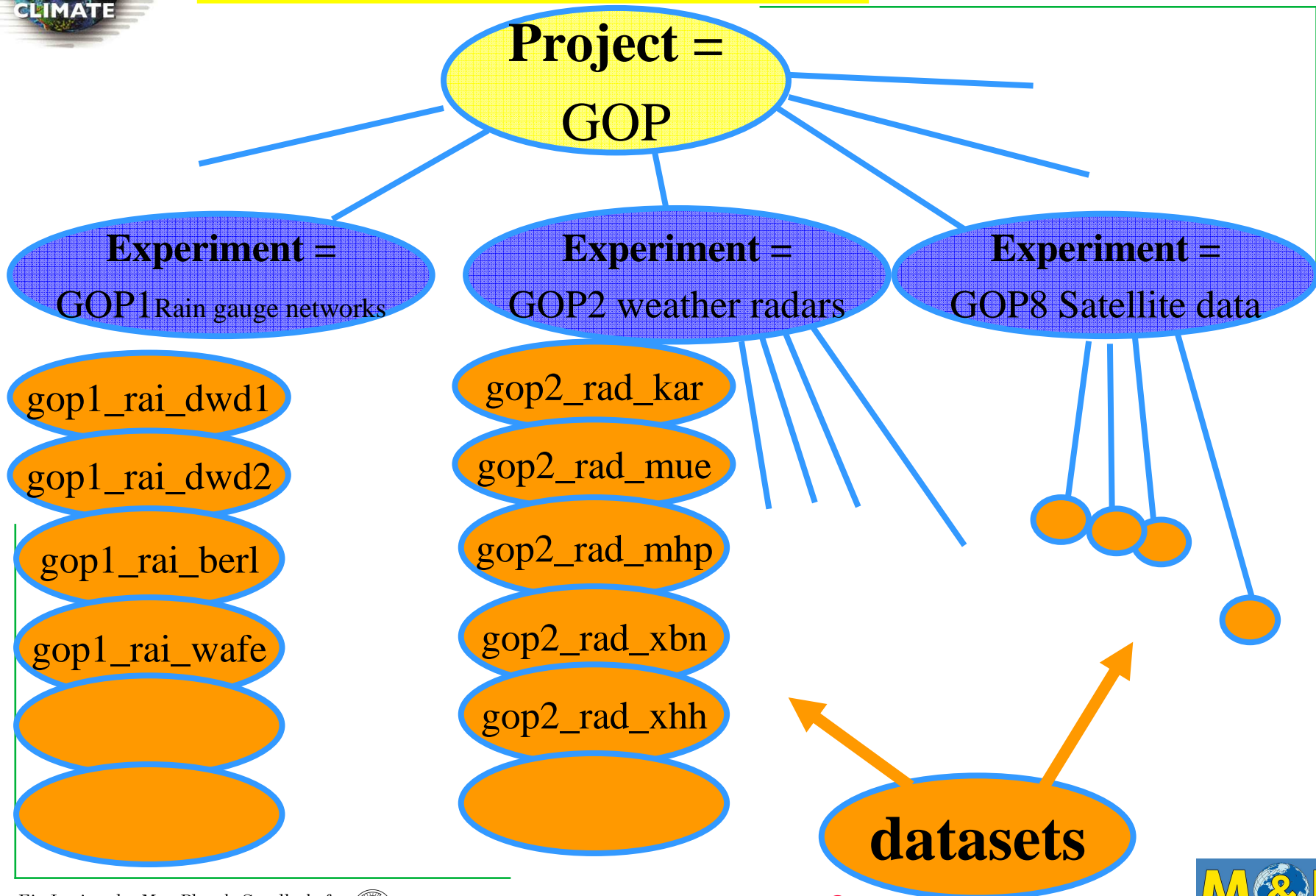
upload





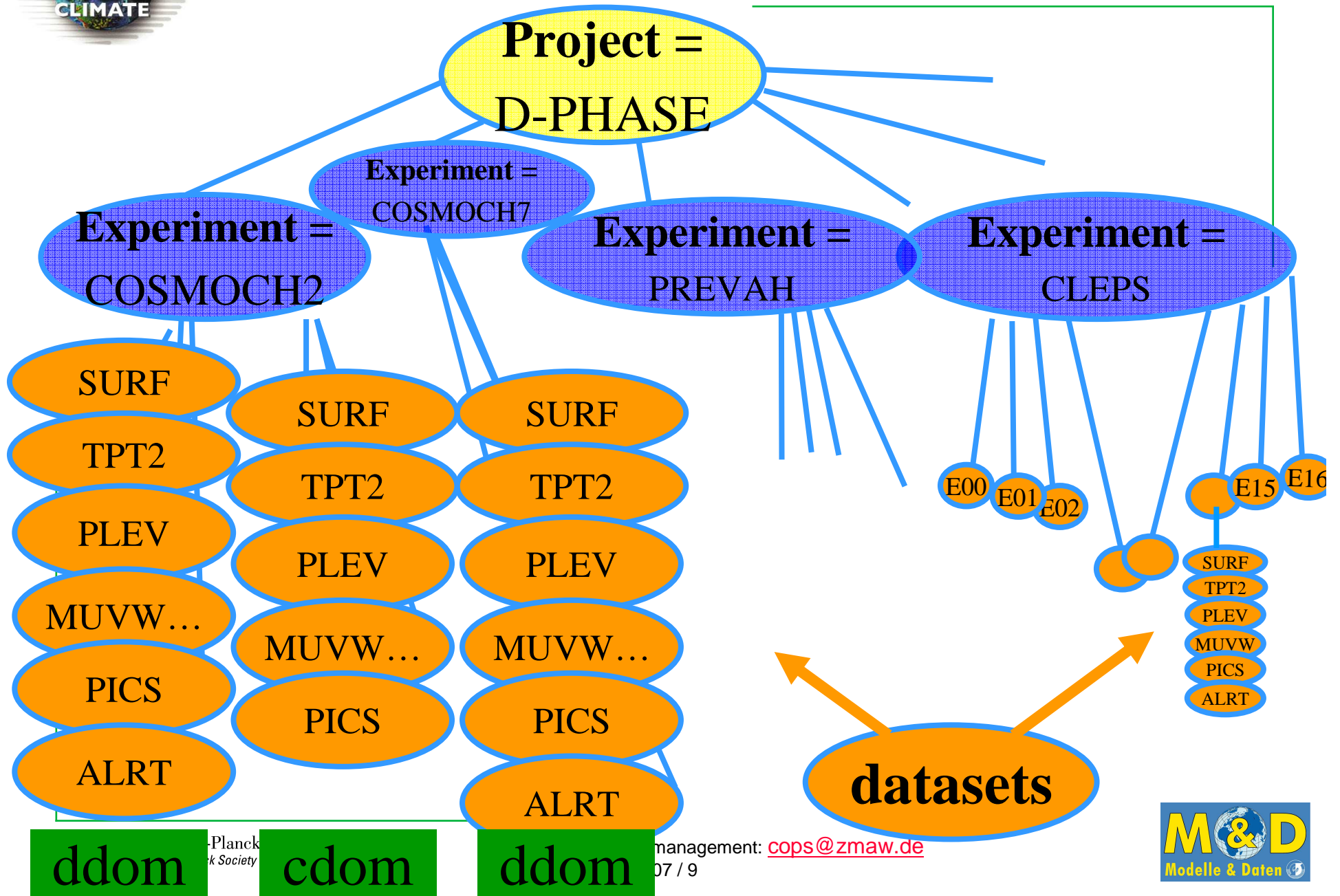


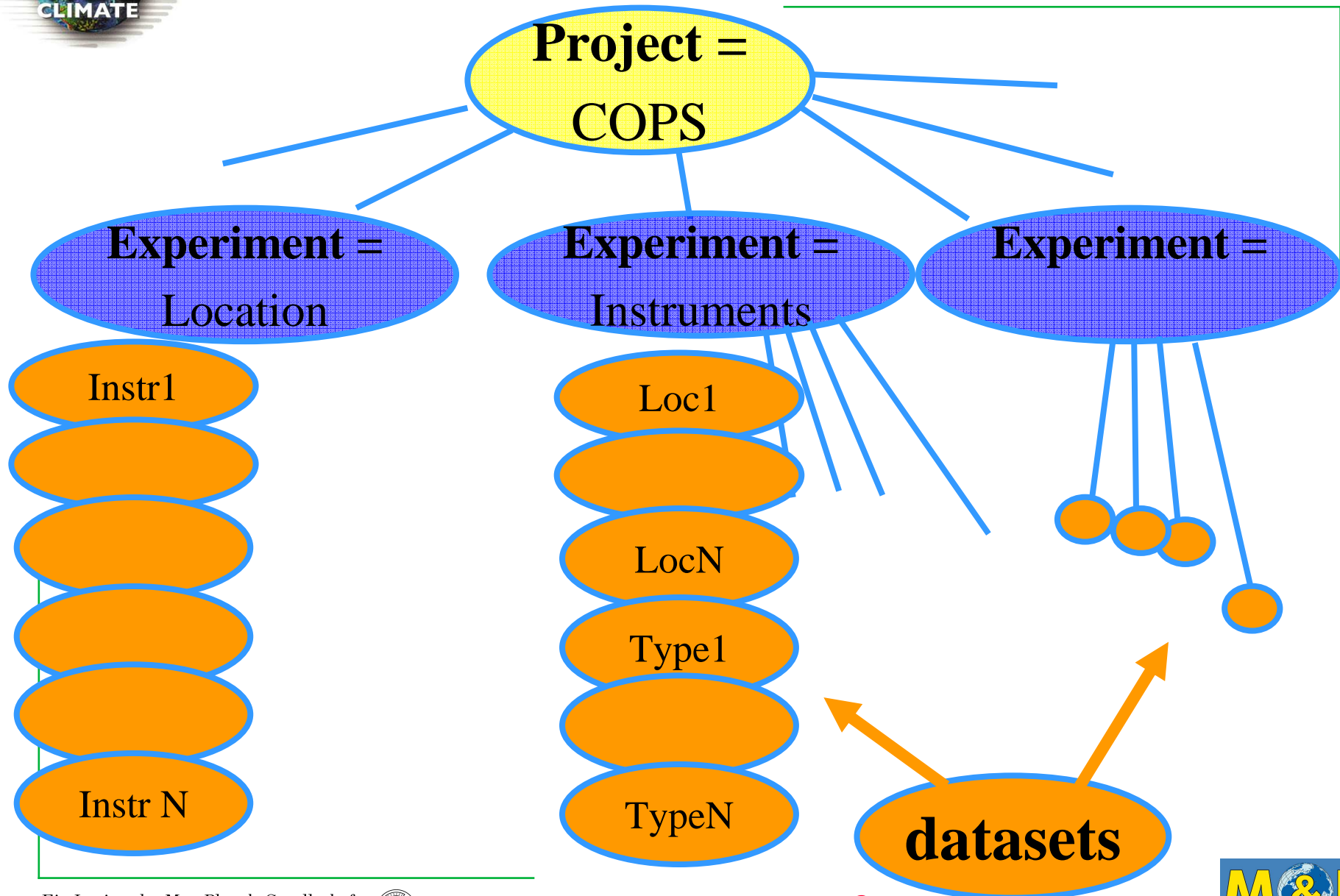
Data set definition GOP





Data set definition D-PHASE







CERA interface



• browse / login

News

08.04.2006
IPCC-DDC (AR4) data available

27.02.2006
IPCC-AR4, Ocean Data available

20.02.2006
csv output for netCDF data

27.06.2005
IPCC-AR4 20C3M: change of acronyms at 27-Jun-2005.

Detailed News...

CERA WWW-Gateway

Search CERA database:

- Browse experiments
- Find entries by name
- Find entries by code

Utilities:

- Code lists
- Date / record converter - For use with jblob or the old applet-based UI
- Jblob - A command-line based tool for data download
- Postprocessing - A collection of tools for data processing and visualisation

Software maintenance: Software updates will be done from 8:00 to 10:00 CET on Mondays, therefore the CERA user interface might be unavailable for user access over this period of time. If you have comments, suggestions, bug reports or any other problems when using this interface, please contact data@dkrz.de.

User Account

Username

Password

Login

Documentation

Recent changes

Known Issues

M&D Data Section

V2.1.2 / 04-Apr-2006

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



Select project

Browse CERA Experiments

Select keyword(s) and/or project

- CCCma CGCM2
- CCSR/NIES
- CCSR/NIES CGCM
- CGCM2.3.2
- CGCM3.1
- chart/map
- chemical tracer
- climate optimum
- climate prognosis
- climate simulation

Select keyword(s) Clear selection

- DPHASE
- DPHASE DRY RUN**
- DRAKKAR
- ECMWF Re-Analysis Project
- ENSEMBLES
- ERA15
- ERA40
- FORCE_RM
- GEBCO
- GKSS

Select project Clear selection Project information

Experiments

- AVHRR
- Baltex Meteorological Data Centre (BMDC) from 31.03.2003
- CC01CI01 - CTL: THE CONTROL INTEGRATION
- CC01GG01 - GHG: THE GREENHOUSE GAS INTEGRATION
- CC01GS01 - GHS: THE SULPHATE AEROSOL AND GREENHOUSE GAS INTEGRATION
- CC01GS02 - GHS: THE SULPHATE AEROSOL AND GREENHOUSE GAS INTEGRATION
- CC01GS03 - GHS: THE SULPHATE AEROSOL AND GREENHOUSE GAS INTEGRATION
- CEOP Inter-Continental Transferability Study: daily mean values of Canadian Regional Climate Model (OURANOS, Canada)
- CEOP Inter-Continental Transferability Study: daily mean values of Climate version of the DWD "Lokalmodell"
- CEOP Inter-Continental Transferability Study: daily mean values of ECPC Regional Spectral Model
- CEOP Inter-Continental Transferability Study: daily mean values of Global Environmental Multiscale Limited Area Model
- CEOP Inter-Continental Transferability Study: Model Output Location Time Series (MOLTS) data provided by GKSS/CLM

Select experiment

DPHASE_DRYRUN

Select keyword(s)

Clear selection

Select project

Clear selection

Project information

Experiments

- DPHASE_DRYRUN_CLEPS
- DPHASE_DRYRUN_COSMOCH2
- DPHASE_DRYRUN_COSMOCH7
- DPHASE_DRYRUN_DIMOSOP
- DPHASE_DRYRUN_FEWS
- DPHASE_DRYRUN_INMSREPS
- DPHASE_DRYRUN_ISACMOL
- DPHASE_DRYRUN_LAMI28
- DPHASE_DRYRUN_LAMI7
- DPHASE_DRYRUN_MM5_1
- DPHASE_DRYRUN_MM5_3
- DPHASE_DRYRUN_MM5_9
- DPHASE_DRYRUN_MOGREPS
- DPHASE_DRYRUN_PREVAH

Select data set

Related CERA entries for DPHASE_DRYRUN_CLEPS

Show: Datasets Dataset groups Additional info | Sort by: Name Descending Update display

	Name	Type	Progress
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_ALERT	dataset	in work
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E00_SURF	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E00_TPT2	dataset	in work
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E01_FIX	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E01_PLEV	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E01_SURF	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E01_TPT2	dataset	in work
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E02_FIX	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E02_PLEV	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E02_SURF	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E02_TPT2	dataset	in work
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E03_FIX	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E03_PLEV	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E03_SURF	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E03_TPT2	dataset	in work
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E04_FIX	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E04_PLEV	dataset	metadata only
<input type="checkbox"/>	DOPDRY_DDOM_CLEPS_E04_SURF	dataset	metadata only

View meta data



World Data Center
for Climate, Hamburg



Not logged in (Login) | Process List

CERA UI Home | WDCC Home

Go to: [General info](#) | [Parameters](#) | [Quality](#) | [Locations & Coverage](#) | [Distribution](#) | [Contacts & References](#) | [Parent entries](#) | [More display formats](#)

Always quote experiment citation when using data!

Entry information for dataset DOPDRY_DDOM_CLEPS_E00_TPT2

General Information

Acronym	DOPDRY_DDOM_CLEPS_E00_TPT2
Name	DOPDRY_DDOM_CLEPS_E00_TPT2
Type	dataset
Progress	in work
Summary	CLEPS Ensemble model mean. This dataset contains total precip.(061.002) and 2-m temp. (011.002).
Creation date	19/02/2007
Review date	19/02/2007
Future review date	20/05/2007
Download permission	No

Please login to add this dataset to your process list.

Back to top...

View meta data

Parameters

Topic	Code	Details
D-PHASE_TYPE_TPT2	-1 (NONE): n/a	

[Back to top...](#)

Quality

Accuracy report	not filled
Completeness report	data may contain gaps in the chronological order.
Consistency report	not filled
Horizontal accuracy	not filled
Vertical accuracy	not filled

[Back to top...](#)

Locations & Coverage

Location	D-PHASE region (DDOM); Latitude: 43.0 to 50.0; Longitude: 2.0 to 18.0; Reference Date: 2007
Spatial coverage	Latitude: 2.0 to 18.0; Longitude: 43.0 to 50.0; Altitude: 0.0 not filled to 0.0 not filled
Temporal coverage	1/6/2007 - 30/11/2007 (calendrical)

[Back to top...](#)

Distribution

Data size (bytes)	12225600
Format	GRIB1; records separated

View meta data

Distribution

Data size (bytes)	12225600
Format	GRIB1; records separated
Access	disc: Db Blob pointer
Fees	not filled
Access constraint	work group only
Use constraint	work group only

[Back to top...](#)

Contacts & References

Contact Type	Institute	Person	Details
metadata	Servicio IdroMeteorologico	Andrea Montani	
originator	Servicio IdroMeteorologico	Andrea Montani	

Reference Type	Title	Publication date	Details
No references available on this level, please see associated entries (i.e. experiments, dataset groups, datasets).			

Please note: More contacts and references may be available with related entries.

[Back to top...](#)

Superordinate entries

DOPDRY_DDOM_CLEPS_TPT2 (dataset_group)

Show details for selected entry

Download data



World Data Center
for Climate, Hamburg


[CERA UI Home](#) | [WDC Home](#)

Process list for claudia_wunram

Delete selected		Clear selection		Sort by date	Sort by name
	Dataset	Size	Request	Date	
<input type="checkbox"/>	 DOPDRY_CDOM_COSMOCH2_PICS	282146439	61634	23-03-2007	
<input type="checkbox"/>	 DOPDRY_DDOM_COSMOCH2_SURF	11894592276	60798	13-03-2007	
<input type="checkbox"/>	 DOPDRY_DDOM_COSMOCH2_SURF	11894592276	60789	13-03-2007	
<input type="checkbox"/>	 CLM_C20_1_D2_dc_DURSUN	3681759744	60374	07-03-2007	
<input type="checkbox"/>	 CLM_C20_1_D2_dc_DURSUN	3681759744	60373	07-03-2007	
<input type="checkbox"/>	 CLM_D2_f_HHL	8115980	60309	07-03-2007	
<input type="checkbox"/>	 CLM_C20_1_D2_1hc_RAIN_GSP	88362233856	60300	07-03-2007	
<input type="checkbox"/>	 CLM_C20_1_D3_1hc_RAIN_TOT	68061718080	60299	07-03-2007	
<input type="checkbox"/>	 DOPDRY_DDOM_MOGREPS_E01_FIX	8760	60228	06-03-2007	
<input type="checkbox"/>	 CLM_D2_f_FR_LAND	249728	60167	05-03-2007	
<input type="checkbox"/>	 DOPDRY_DDOM_ISACMOL_TOT2	12488574	50771	27-02-2007	

Download data

CERA WWW-Gateway - Dataset Order Form (Step 1 of 3)

Information about selected dataset

Dataset acronym / name	DOPDRY_CDOM_COSMOCH2_PICS
Temporal coverage	0-0-0 to 0-0-0 (not applicable)
Total number of records	40 (27 available for download)

Please note: The progress information of this dataset currently is 'Work on this entry has started. Metadata has been filled into the database. If data belonging to this entry will be filled into the database we have already started to do this. A review addressing metadata and data is outstanding. Please check metadata and data carefully before using data.', therefore the end date of the temporal coverage might be inaccurate.

Temporal structure

Period #	1/1
Period start	2007-02-26 00:00 (YYYY-MM-DD HH:MM)
Period end	2007-03-02 21:00 (YYYY-MM-DD HH:MM)
Aggregation	3 hour(s)
Number of records	40

Download data



belonging to this entry will be filled into the database we have already started to do this. A review addressing metadata and data is outstanding. Please check metadata and data carefully before using data.', therefore the end date of the temporal coverage might be inaccurate.

Temporal structure

Period #	1/1
Period start	2007-02-26 00:00 (YYYY-MM-DD HH:MM)
Period end	2007-03-02 21:00 (YYYY-MM-DD HH:MM)
Aggregation	3 hour(s)
Number of records	40
UTC time difference	0.0

<< Prev Next >>

Select download type

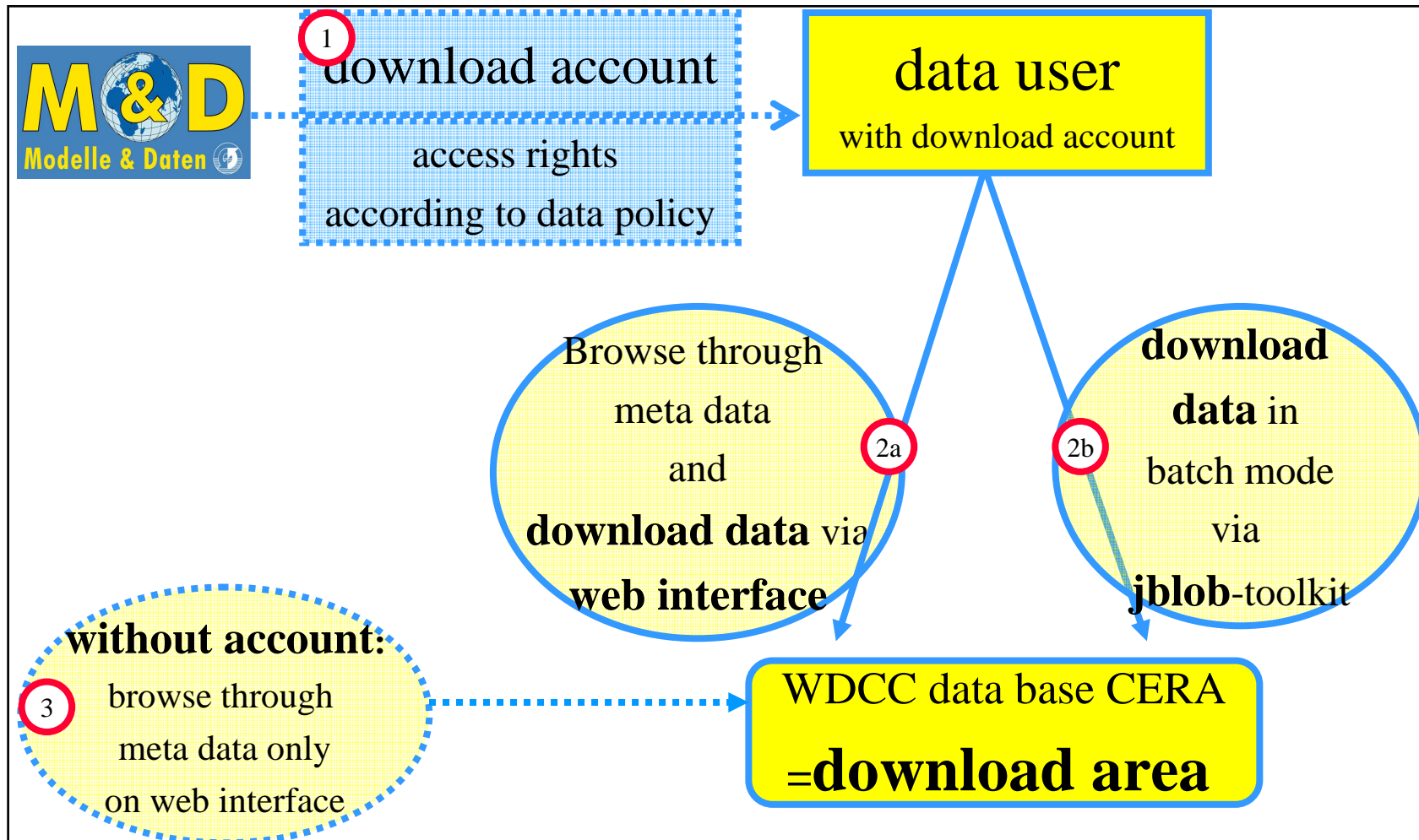
Type	Complete dataset
Time period start	
Time period end	

Choose timespan in time serie

Download data set

Temporal selection based on record numbers instead of dates is available [here](#).

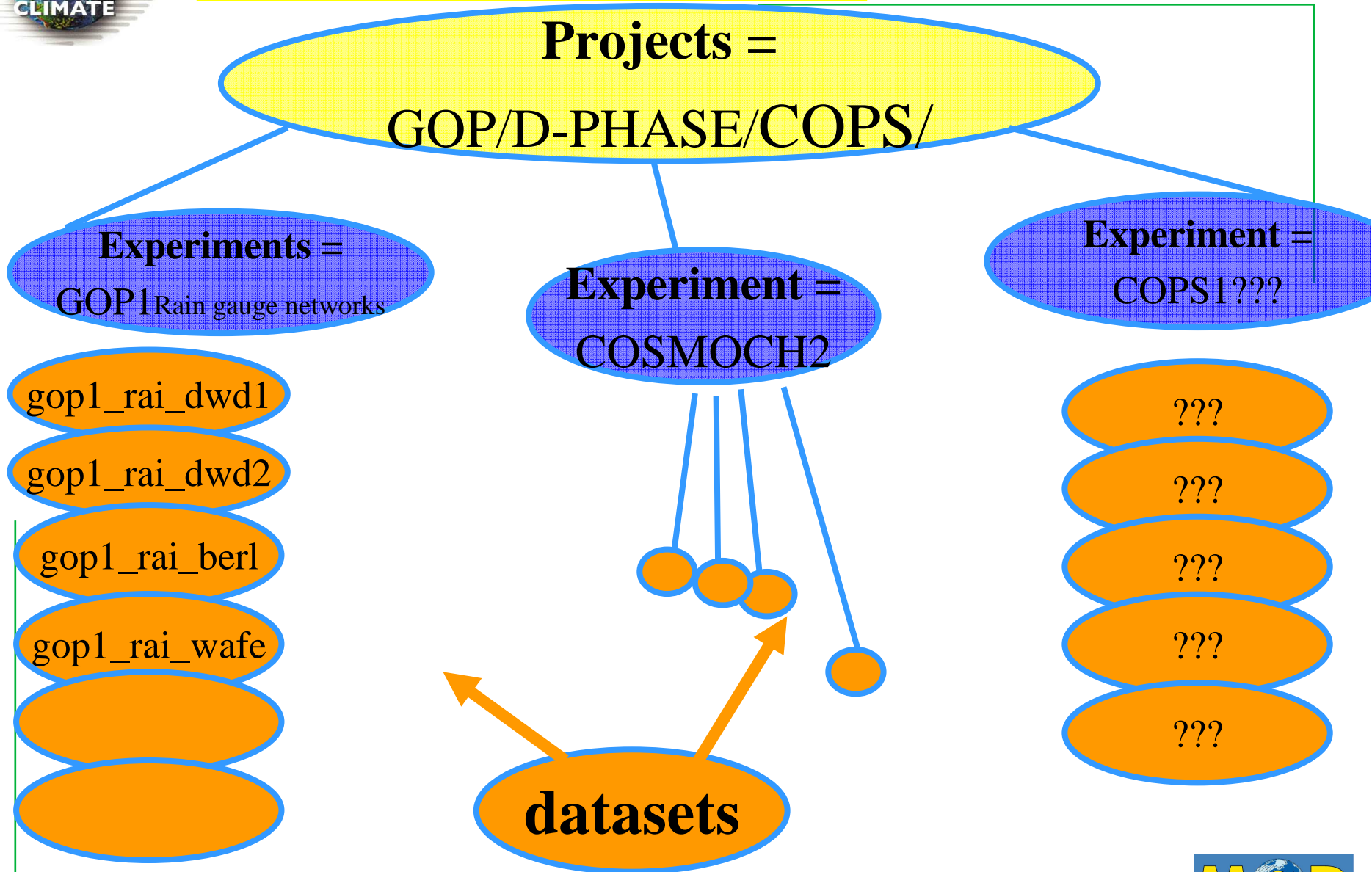
Next: [select processing option\(s\) >>](#) or [click here to download the complete dataset now](#).



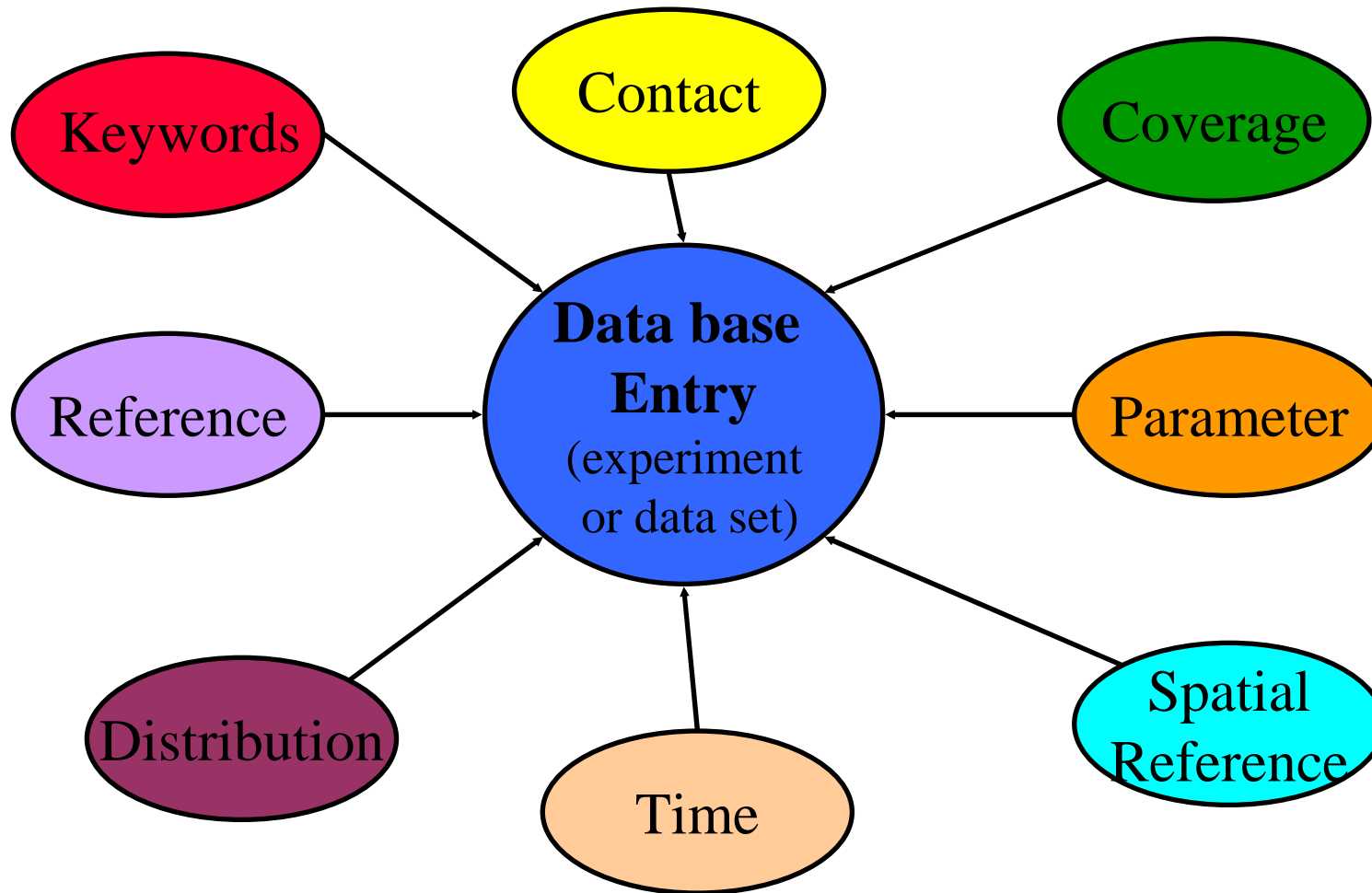


To find the appropriate data in the data base you need some meta data description





Meta data information



To help you along we provide a meta data description tool that generates xml-files

	experiments	data sets
GOP	9	~ 100
D-PHASE	60	~1600
COPS		> 100 * X

standard is needed

Metadata related to EXPERIMENTS for observation or model data in COPS/GOP/DPHASE 2007

Form Data Help

ADDITIONAL INFORMATION :

Welcome to the meta data GUI for COPS/GOP/DPHASE.
This form may be used to generate xml-files for the description of data base EXPERIMENTs.
How to use this form:

- ** Generate different xml-files with this form for the various EXPERIMENTS and name the xml-output of this form according to the EXPERIMENT that you describe here.
- ** Find the names of the EXPERIMENTs in the "Selection List" below.
- ** Click in the grey text fields to get additional information on the value to be filled in.
- ** Click in the new information (=upper) window to get back to the main information (this page).
- ** Subforms will open on click on the respective button
- ** In case of problems contact cops@zmaw.de

0: Contact 0: Coverage 0: Keywords

Metadata related to EXPERIMENTS for observation or model data in COPS/GOP/DPHASE 2007

Selection List The experiment is related to the project:

Selection List Experiment Acronym

Entry Name (free text, beginning with data set acronym from above field. experiment_acronym+free text= max. 160 characters)

Metadata related to DATASETS for observation or model data in COPS/GOP/DPHASE

Form Data Help

ADDITIONAL INFORMATION :

Welcome to the meta data GUI for COPS/GOP/DPHASE.
This form may be used to generate xml-files for the description of data base DATASETS.
How to use this form:

- ** Generate different xml-files with this form for the various DATASETS and name the xml-output of this form according to the DATASET that you describe here.
- ** Find the names of the DATASETS in the "Selection List" below.
- ** Click in the grey text fields to get additional information on the value to be filled in.
- ** Click in the new information (=upper) window to get back to main information (this page).
- ** Subforms will open on click on the respective button
- ** In case of problems contact cops@zmaw.de

0: Contact	0: Coverage	0: Distribution	0: Grid_desc
0: SpaceRef	0: Parameter	0: Time	

Metadata related to DATASETS for observation or model data in COPS/GOP/DPHASE 2007

Selection List The dataset is related to the EXPERIMENT:

Selection List Choose the appropriate Dataset Acronym for your upload file

for experiments



Metadata related to EXPERIMENTS for observation or model data in COPS/GOP/DPHASE 2007

Form Data Help

ADDITIONAL INFORMATION :
Welcome to the meta data GUI
This form may be used to generate metadata for experiments
How to use this form:
** Generate different xml-files with different parameters
name the xml-output of this form
** Find the names of the EXPERIMENTS
** Click in the grey text fields to open the selection dialog
** Click in the new information fields to open the selection dialog
** Subforms will open on click of the subform buttons
** In case of problems contact the support team

The experiment is related to the project:
Select a value :
COPS
GOP
DPHASE

Experiment Acronym
Select a value :

gop1
gop2
gop3
gop4
gop5
gop6
gop7
gop8
dphase_dryrun_arome
dphase_dryrun_arpalmol
dphase_dryrun_claps
dphase_dryrun_cosmoch2
dphase_dryrun_cosmoch7
dphase_dryrun_csreps
dphase_dryrun_gemlam10
dphase_dryrun_gemlam25
dphase_dryrun_inmsreps
dphase_dryrun_isacmol
dphase_dryrun_lami28
dphase_dryrun_lami7

Selection List The experiment is related to the project:
Selection List Experiment Acronym

Entry Name (free text, beginning with data set acronym from above field. experiment name (max. 255 characters)

Selection values



Form Data Help

ADDITIONAL INFORMATION :

Welcome to the meta data GUI for COPS/GOP/DPHASE.
This form may be used to generate xml-files for the description of data base DATASETS.

How to use this form:

- ** Generate different xml-files with this form for the various DATASETS and name the xml-output of this form according to the DATASET that you describe here.
- ** Find the names of the DATASETS in the "Selection List" below.
- ** Click in the grey text fields to get additional information on the value to be filled in.
- ** Click in the new information (=upper) window to get back to main information (this page).
- ** Subforms will open on click on the respective button
- ** In case of problems contact cops@zmaw.de

0: Contact	0: Coverage	0: Distribution	0: Grid_desc
0: SpaceRef	0: Parameter	0: Time	

Metadata related to DATASETS for observation or model data in COPS/GOP/DPHASE 2007

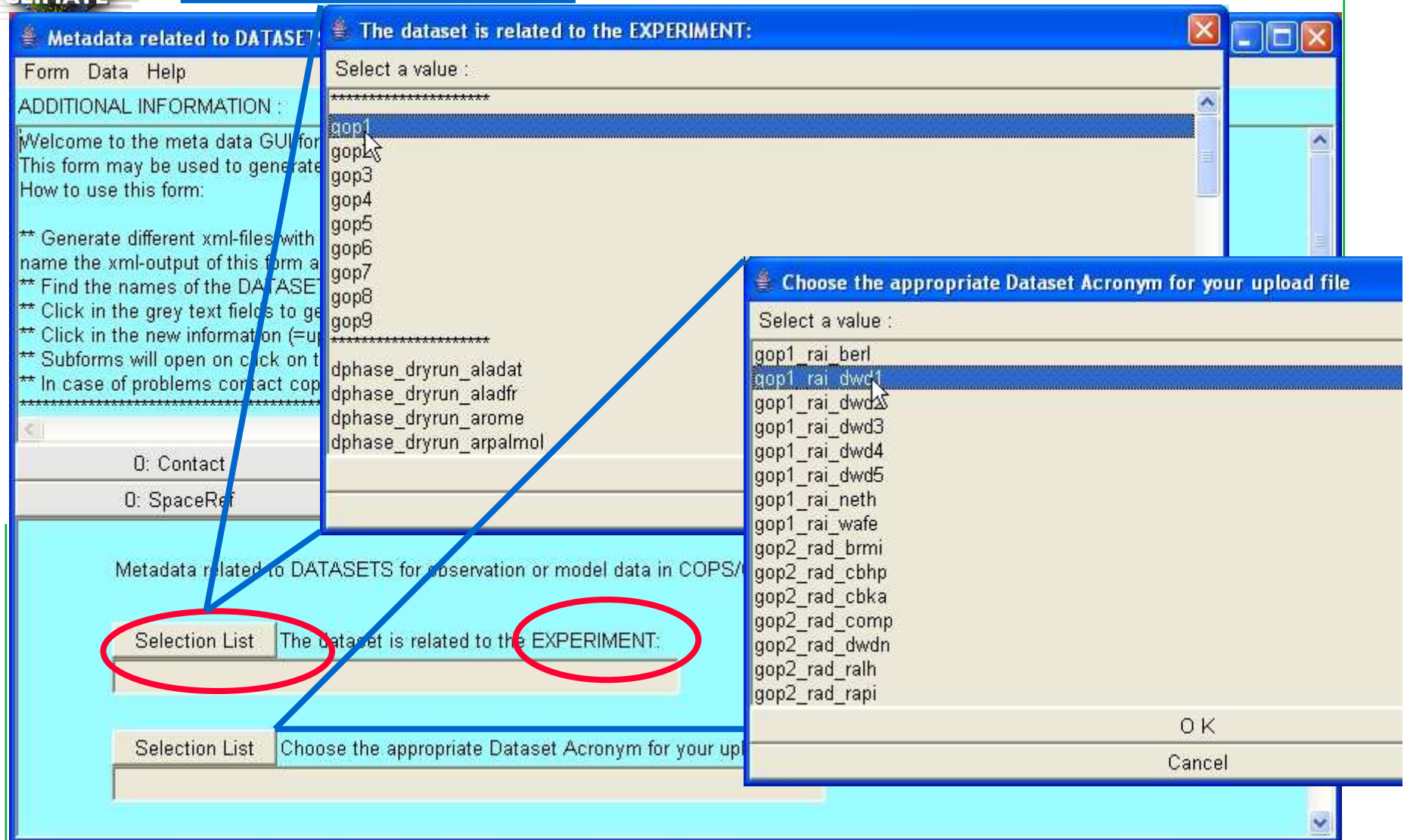
Selection List The dataset is related to the EXPERIMENT:
gop1

Selection List Choose the appropriate Dataset Acronym for your upload file:
gop1_rai_berl

Entry Name (free text, beginning with data set acronym from above field. Dataset_acronym+free text= max. 160 characters)
gop1_rai_berl: rain gauge measurements in Berlinnet

Summary
Rain gauge data from the diverse sources will be assembled, quality controlled and combined to precipitation maps for various integration times which take into account the varying temporal resolution of the data. Realtime available observations will be delivered in near-real time to be used for an "online evaluation" of the LM(k) forecasts.

Free text



The screenshot shows a main window titled "Metadata related to DATASET" with a "Selection List" button circled in red. Two pop-up windows are open:

- Top Pop-up:** "The dataset is related to the EXPERIMENT:" with a list of options: gop1, gop2, gop3, gop4, gop5, gop6, gop7, gop8, gop9, dphase_dryrun_aladat, dphase_dryrun_aladfr, dphase_dryrun_arome, and dphase_dryrun_arpalmol.
- Bottom Pop-up:** "Choose the appropriate Dataset Acronym for your upload file" with a list of options: gop1_rai_berl, gop1_rai_dwd1, gop1_rai_dwd2, gop1_rai_dwd3, gop1_rai_dwd4, gop1_rai_dwd5, gop1_rai_neth, gop1_rai_wafe, gop2_rad_brmi, gop2_rad_cbhp, gop2_rad_cbka, gop2_rad_comp, gop2_rad_dwdn, gop2_rad_ralh, and gop2_rad_rapi.

Contact Information Related to the Dataset

Form Data Help

ADDITIONAL INFORMATION :

Select the full name of the person/institute.
If you dont find a suitable name (and institute) in the list, please contact cops@zmaw.de to announce more persons.

Type of the Contact for dataset

Select a value :

- investigator
- originator**
- metadata
- metadata reviewer

OK
Cancel

Person Name

Select a value :

- Arpagaus, Marco (Meteoswiss)
- Beheng, Klaus (UNI-KA)
- Betz, Hans-Dieter (LMU)
- Bunke, Karl (IFM-GEOMAR)
- Crewell, Susanne (UNI-K)
- Dick, Galina (GFZ)
- Engelbart, Dirk (DWD)
- Fischer, Juergen (FUB)
- Hagen, Martin (DLR)
- Hauf, Thomas (UNI-H)
- Koziar, Christian (DWD)**
- Maetzler, Christian (UB)
- Mammen, Theodor (DWD)
- Mathes, Armin (UNI_BN-MI)
- Mayer, Helmut (UNI-FR)

OK
Cancel

Contact Information Related to the Dataset

Selection List Type of the Contact for dataset

originator

Selection List Person Name

Koziar, Christian (DWD)

Generate your own template

Metadata related to DATASETS for obs

Form Data Help

- Check Form Contents
- Copy Data
- Paste Data
- Load XML Record
 - select local file
- Save As New Record
 - enter file name
- Output target
 - select example file
- Reset this Record
- Reset All Forms
- Clear Fields

1: Coverage 1: Distribution 1: Grid_desc

0: SpaceRef 0: Parameter 0: Time

Creation Date (YYYY-MM-DD)
2007.03.23

Experiment = COSMOCH2

- SURF
- TPT2
- PLEV
- MUVW...
- PICS
- ALRT

ddom cdom



We offer **more details in working group:**

- Show meta data description tool
- Explain upload to the archive
- Define file naming conventions
- Explain download

user accounts (provide your contact details)





COPS data management cops.wdc-climate.de



MODEL & DATA

M&D Home | Impressum | Contact | Sitemap | Logout | Search

News
WDC for Climate
Postprocessing (IMDI)
Projects at M&D
Boson Projekt
C3 Grid
CEOP
ENSEMBLES
ERA40
IPCC Data
PSI
SG Adaptation
STD-DOI
COPS Campaign
Past projects
Service & Support
Scient. Steering Board
About Us
Tool Bar

COPS Campaign

COPS is the Intensive Observation Period of the Priority Program 1167 "Quantitative Precipitation Forecast" of the German Research Foundation (DFG)

Welcome to the data management information site for the following measurement campaigns to be held in 2007 in the Black Forest area in Southern Germany:

[COPS](#)
[GOP](#)
[MAP/D-PHASE](#)

Download ASCII to netCDF

Download meta data tool

Soon you will find here:

- some information on the data policy of the above measurement campaigns.
- descriptions of the data management for these campaigns.
- some instructions on how to fill in the meta data description for the CERA data base.
- a download link for the meta data formular
- a template for the variable description list template

Service point:
Data providers in the frame of COPS/GOP/DPHASE will find assistance in sending a request to **cops(at)zmaw.de**

We will be happy to give advise and answer your questions concerning the upload and download of your data or the required meta data description.





Model & Data: COPS Campaign - Mozilla Firefox

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe

http://www.mad.zmaw.de/projects-at-md/cops-campaign/

Erste Schritte Aktuelle Nachrichten ...

- CEOP
- ENSEMBLES
- ERA40
- IPCC Data
- PSI
- SG Adaptation
- Publication and Citation
- COPS Campaign**
- Past projects
- Service & Support
- Scient. Steering Board
- About Us
- Tool Bar

Quick Links

- SGA (Adaption)
- CERA - Portal
- WDCC - Browse Experiments
- IPCC-DDC GCM Archive
- Present robot

http://www.mad.zmaw.de/fileadmin/extern/SGA-Files/general_info_data_archive_220307.pdf

General user info: 22.03.07 COPS-DOPHASE Claudia Wurram cops@zmaw.de

MAP/D-PHASE

NOTE: This site is under construction

Soon you will find here:

- some information on the data policy of the above mentioned projects
- descriptions of the data management for these projects
- some instructions on how to fill in the meta data
- a download link for the meta data formular

Service point:
Data providers in the frame of COPS/COP/DPHASE
cops(at)zmaw.de

We will be happy to give advise and answer your questions on the required meta data description.

Please read carefully the following [general-info-document](#) with important info to the upload and download to our system.

View here the pictures on the [upload and download schemes](#).

latest update: 2007-03-23 17:43

General information on the data upload to the WDCC-data base

Claudia Wurram cops@zmaw.de

1. Introduction

New data providers to the WDCC¹ data base (named CERA²) find it sometimes a bit confusing to find their way around. This paper will help you along.

Please note the following points on the structure of the data base:

- Data providers have to distinguish between the several areas, where to upload, check and download data. These specific areas are accessed on different machines and with different user accounts (see chap. 2 on upload and download areas).
- During the process of data delivery, data storage and data download, the data has three different names, that correspond to each other: one name is for your upload-files, one for the naming of the dataset (=time series of your files) in the data base and one for the download-files (see chap. 3 on accepted names of upload files for the three partner activities GOP (see 3.1), D-PHASE (see 3.2) and COPS (see 3.3 has to be announced after 3rd COPS WS March07).
- How to find your upload directory path on the upload area is explained in chap. 4.
- Purpose of the WDCC-data base is the long term storage of data. Users, that want to download your data later on, might not be familiar with your data at all. So a careful description of your data is very important (see chap. 5 on meta data).

The whole data flow during the upload procedure, the transfer to the data base and the options for the download access are illustrated in Fig 1 and Fig 2.

Please note that some model names and driving data names are still missing. Please announce them to cops@zmaw.de as soon as possible, if they are not given in Table 1 and Table 2.

Please note that the archiving details/naming conventions for COPS instrument data are still to be announced. More information will follow after the 3rd COPS-workshop at the end of March 2007.

¹ WDCC = World Data Center for Climate
² CERA = Climate and Environmental Retrieving and Archiving.

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- **Define data structure model** for COPS
- **Provide meta data tool** to investigators
- **Test runs for data delivery and upload are highly recommended prior to campaign start:**

- | | | | |
|-----------|---------------|--------------------------|---|
| • DPHASE: | dryrun1 | 26.2. – 5.3. 2007 | ☺ |
| | dryrun2 | 29.3. – 4.4. 2007 | |
| • COPS | dryrun | 24.4 – 30.4. 2007 | |



contact information

Service email adress:

cops@zmaw.de

User information on:

cops.wdc-climate.de





Thank you

user accounts (provide your contact details)

