



NOAA/GFDL Model Development Database Interface

(for AR5 Quality Control Process tracking)

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Outline

- Delightful comparisons -
IPCC AR4 versus IPCC AR5
- MDBI in a nutshell
- Role of Curator
- Let's QC!
- Target

Delightful comparisons

AR4 versus AR5

GFDL-CM2.1

GFDL-CM2.5

GFDL-CM3

GFDL-HIRAM-C180

GFDL-HIRAM-C360

GFDL-ESM2M

GFDL-ESM2G

GFDL-CM2.0/CM2.1



GFDL-Models (for AR4)

GFDL-Models (for AR5)

Delightful comparisons AR4 versus AR5

About 12Tb

**Definitely not less
than 300Tb ;)**

Published Data size
[AR4]

Estimated Data size
[AR5 publishing]

Delightful comparisons

AR4 versus AR5

CMOR

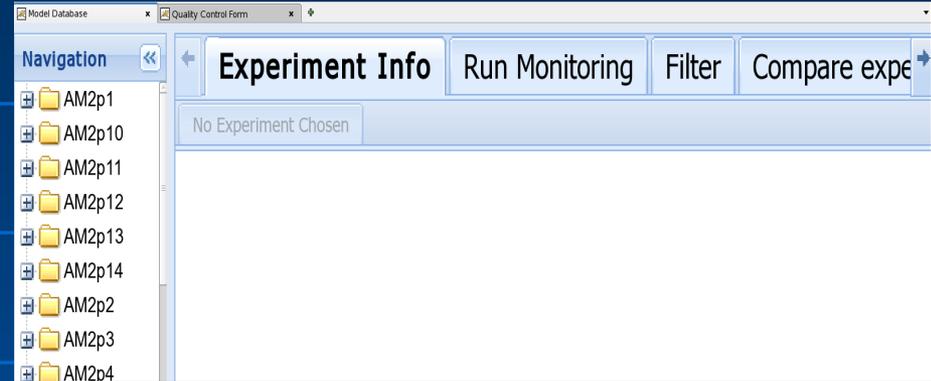
FREMetar
(GFDL's in-house tool)

How did we standardize
(CF/CMIP) our model output
for publishing?
(AR4)

How are we standardizing
(CF/CMIP) our model output
for publishing?
(AR5)

Delightful comparisons

AR4 versus AR5



MDDBI interface!

QC status tracking and more ..

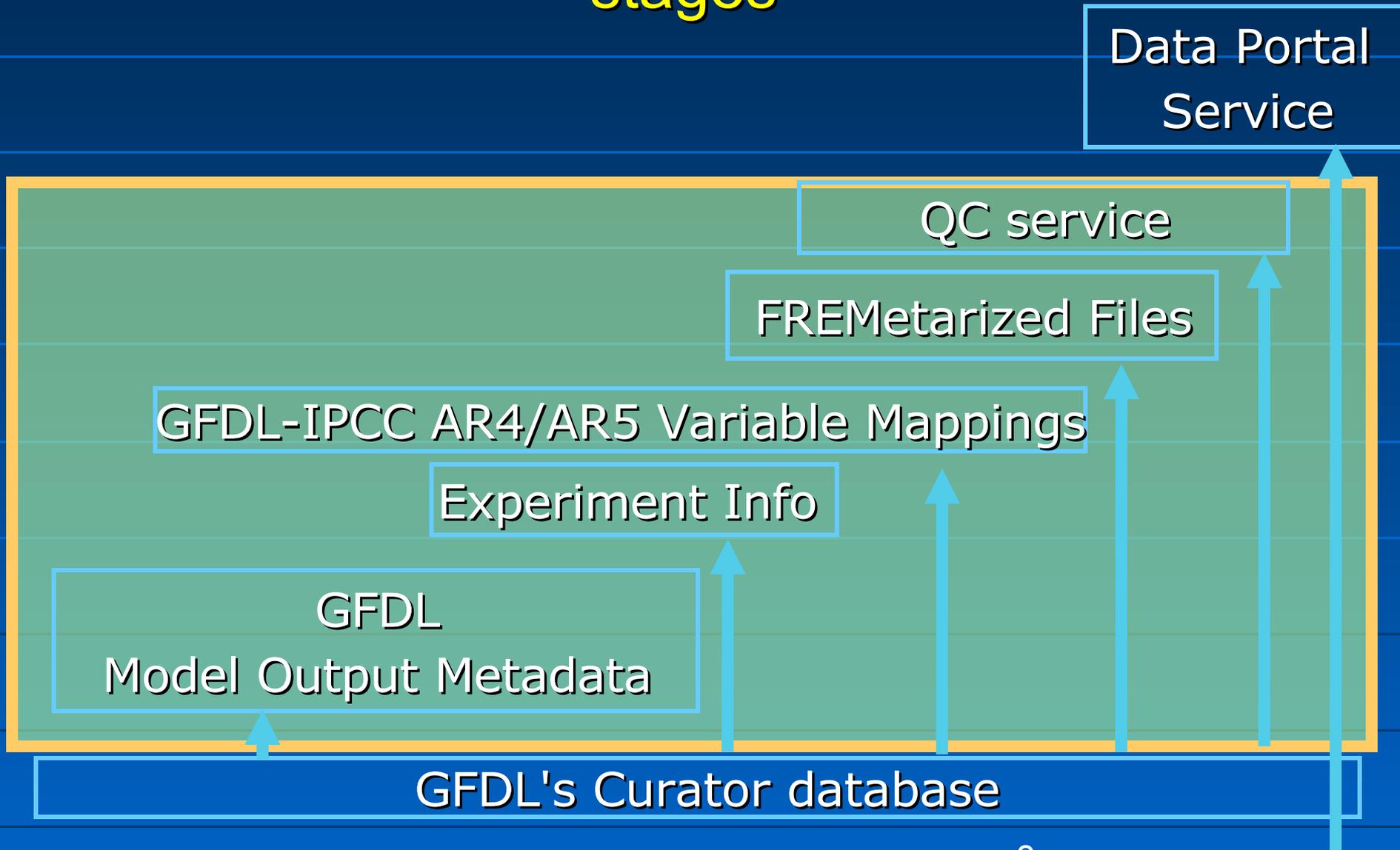
QC tracking process?
(AR4)

QC tracking process?
(AR5)

MDBI(Model Dev DB Interface) in a nutshell

- A transparent view of the Curator database in a user-friendly way
- ExtJS Javascript framework/Java Server pages
- Secure/Restricted access to the interface/experiment metadata
- Functions to provide several services like -
View Experiment XML, PostProcessed data info,
Filter Experiments, Run-monitoring,
Platform-Environment, **QC/PUBLISHED DATA INFO**, etc..

Role of Curator DB at different(every?) stages



Let's QC!

Get started!: LOGIN to the MDBI interface

Login to the interface

The screenshot shows a web interface with a navigation pane on the left and a main content area on the right. The navigation pane is titled "Navigation" and contains a list of folders and files. The main content area has a top navigation bar with buttons for "Experiments", "Generate XML", "Login", and "Help". Below the navigation bar, the text "You are not logged in" is displayed, followed by a message in parentheses: "(browsing as Guest - Please use your initials (eg:ysm) and NEMS password to login.)". There are two input fields: "User Name:" with the value "a1r" and "password:" with a masked password "*****". A "Login" button is located to the right of the password field.

Navigation

- CM3_configuration
- ESM2p1
- GFDL-CM3
- GFDL-ESM2M
- GFDL-HIRAM-C180
 - c180_hiram_H2
- LM2p0
- LM2p5
- LM2p6
- LM2p7
- LM3p1

Experiments **Generate XML** **Login** **Help**

You are not logged in

(browsing as Guest - Please use your initials (eg:ysm) and NEMS password to login.)

User Name:

password:

Let's QC! (contd..)

Navigate to the “correct” experiment on the experiment tree available on the MDDBI page.
(check experiment description and global attributes)

Choose experiment, check global attributes

The screenshot shows the Model Database interface. On the left is a 'Navigation' pane with a tree view of folders. The folder 'GFDL-HIRAM-C180' is expanded, and 'c180_hiram_H2' is selected, indicated by a blue arrow. Below the navigation pane is a 'Reset Search' button. The main area has a top navigation bar with 'Experiment Info' (selected), 'Run Monitoring', and 'Filter'. Below this is another bar with 'Description' (selected), 'Administration', 'Platform Environment', and 'Compc'. The main content area displays the following information:

Triple ID
Experiment id: exper_id_2ev8OZbKol
Realization id: realiz_id_mBpNS4Z8do
run id:run_id_XsMMu0NGOW

GLOBAL ATTRIBUTES

title: NOAA GFDL GFDL-HIRAM-C180, AMIP (run 1) experiment output for CMIP5 AR5"
Institute_id: NOAA GFDL
Source: GFDL-HIRAM-C180 2010 atmosphere: HIRAM (HIRAMP1,C180L32); land: LM3 (LM3p7_cHIRAM,C180)
Contact: gfdl.climate.model.info@noaa.gov
project_id: CMIP5
experiment_id: amip
realization: 1
Conventions: CF-1.4
references: The GFDL Data Portal (<http://nomads.gfdl.noaa.gov/>) provides access to NOAA/GFDL's publicly available model input and output data sets

I want to QC this experiment

Let's QC! (contd ..)

Then? – Go to the Publishing panel to look up for Variables categorized by the CMIP tables (Amon, Omon etc)

Publishing Panel

Experiment Info

Run Monitoring

Filter

Compare experiments

Procedures

Compile Procedures

Input Files

Post Processing

Run Descriptions

PP Files

Publishing

MODEL: GFDL-HIRAM-C180
EXPERIMENT: c180_hiram_H2

CMIP5/CFMIP5
Tables

Information/Forms

**Status for
Quality
Control**

Amon

[Quality Control Form](#)
[FREMetarized Data](#)
[Published Data](#)

Not QCed yet

3hr

[Quality Control Form](#)
[FREMetarized Data](#)
[Published Data](#)

Not QCed yet

Let's QC! (contd ..)

File-level QC - Say, quality control “tas”
(surface air temperature) file(s)..

File-level Quality Control

PCMDI Table: Amon

Experiment: c180_hiram_H2 (exper_id_2ev8OZbKoI)

Model: GFDL-HIRAM-C180

Back

Clicking on file name under "Source And Fremetarized Files" will display the Source File location and FREmetarized file locations for quality control.

Source File/Model Output:

Fremetarized File:

Quality Control Form (File level)

(Please check the appropriate checkboxes against the file that was quality controlled, and hit the Submit button below this form)

IPCC Variable Name: tas / GFDL Variable Name: t_ref (CF name:air_temperature)							
IPCC Units: K (CMOR Min:180.6/ CMOR Max:325.7)							
<i>(If CMOR configs do not have a min/max specified, the defaults will point to -1e+20/1e+20 respectively)</i>							
S.No.	Source And Fremetarized Files <small>(Please click on the filenames to list the fremetarized and source file locations)</small>	Min	Max	Avg	StdDev	Number of missing_values	Input For Quality Control Select/Deselect all <input type="checkbox"/>
1	tas_Amon_GFDL-HIRAM-C180_amip_r1i1p1_197901-198312.nc	198.762	314.923	286.786	15.4086	0	<input type="checkbox"/>
2	tas_Amon_GFDL-HIRAM-C180_amip_r1i1p1_1984 <small>(Click to get Source/Fremetarized file paths(TIME STAMP- 2011-03-30 10:57:13.0))</small>						<input type="checkbox"/>

Submit

File-level Quality Control

PCMDI Table: Amon

Experiment: c180_hiram_H2 (exper_id_2ev8OZbKoI)

Model: GFDL-HIRAM-C180

Back

Source File/Model Output:

/archive/bw/ornl/cmip5/c180_hiram_H2/pp/atmos/ts/monthly/5yr/atmos.197901-198312.t_ref.nc

Fremetarized File:

/archive/Bruce.Wyman/ornl/cmip5/c180_hiram_H2/cmip5/GFDL-HIRAM-C180/amip/mon/atmos/tas/r1i1p1/tas_Amon_GFDL-HIRAM-C180_amip_r1i1p1_197901-198312.nc

Quality Control Form (File level)

(Please check the appropriate checkboxes against the file that was quality controlled, and hit the Submit button below this form)

IPCC Variable Name: tas / GFDL Variable Name: t_ref
(CF name:air_temperature)

IPCC Units: K
(CMOR Min:180.6/ CMOR Max:325.7)

(If CMOR configs do not have a min/max specified, the defaults will point to -1e+20/1e+20 respectively)

S.No.	Source And Fremetarized Files <small>(Please click on the filenames to list the fremetarized and source file locations)</small>	Min	Max	Avg	StdDev	Number of missing_values	Input For Quality Control Select/Deselect all <input type="checkbox"/>
1	tas_Amon_GFDL-HIRAM-C180_amip_r1i1p1_197901-198312.nc	198.762	314.923	286.786	15.4086	0	<input type="checkbox"/>
2	tas_Amon_GFDL-HIRAM-C180_amip_r1i1p1_198401-198812.nc	198.122	315.503	286.869	15.3945	0	<input type="checkbox"/>

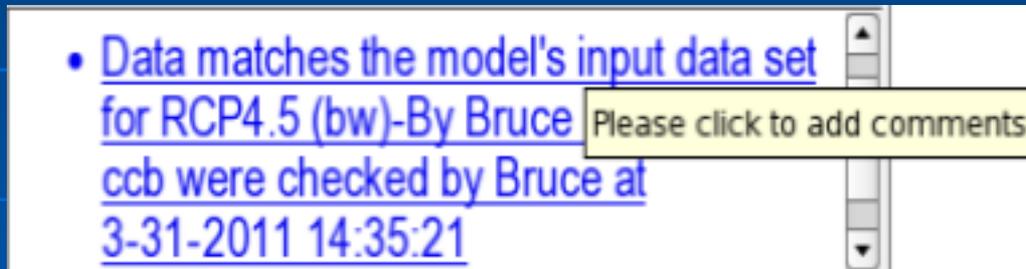
Submit

Let's QC! (contd..)



Is there a way to exchange comments on a variable- like a status update on the type of tests performed on a variable? -Yes!

Quality Control Forms (Comments exchange- Read-only!)



Target!

Model Database

Experiment Info Run Monitoring Filter Compare experiments

Procedures Compile Procedures Input Files Post Processing Run Descriptions PP Files Publishing

MODEL: GFDL-HIRAM-C180 EXPERIMENT: c180_hiram_H2		
<u>CMIP5/CFMIP5 Tables</u>	Information/Forms	Status for Quality Control
Amon	<u>Quality Control Form</u> <u>FREMetarized Data</u> <u>Published Data</u>	

Thank you!