

The PMIP3 Database...

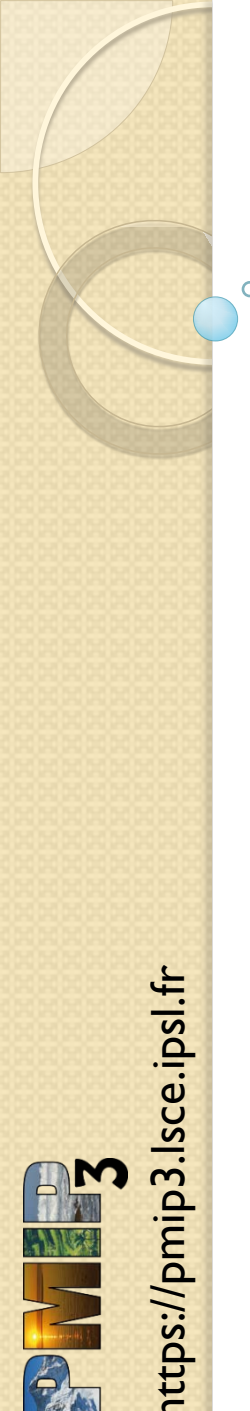
Quick summary...
... and latest news

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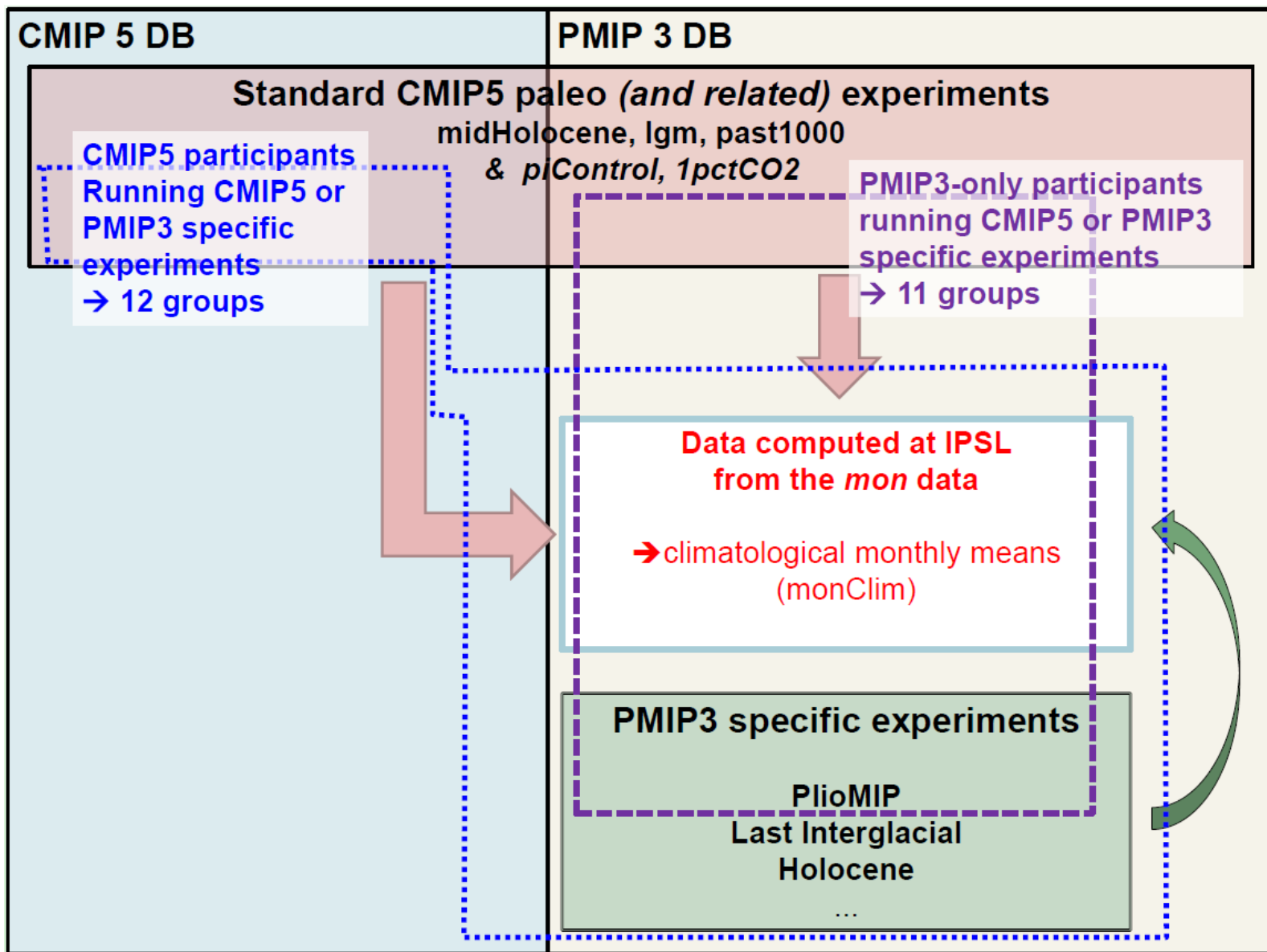
<https://pmip3.lsce.ipsl.fr/>



What is the PMIP3/CMIP5 database?

- A **HUGE** and **standardized** collection of files
 - CMIP5 DB, March 2012 : about 1 Pb data
 - the DB is **distributed** on different servers over the world, with the Earth System Grid Federation (ESGF) tools
 - Files are stored on *Data Nodes*
 - Files can be found on *Gateways* or *Peer to Peer Front Ends* (P2P FE)
 - System can be slow... Be patient!
 - <http://dods.ipsl.jussieu.fr/jripsl/synchro-data>
- Some PMIP3 files are part of the IPCC5/CMIP5 Database so we sometimes talk about the **PMIP3/CMIP5 Database**
- The PMIP3 experiments are **standardized**
 - experimental design → PMIP3 web site
- The data files are **standardized**
 - CMOR2 library
 - Data Reference Syntax (DRS)

PMIP3 & CMIP5 → PMIP3/CMIP5 DB



Standardizing the files

- The data files are **standardized** with the **CMOR2 library**, so that the data can be easily exchanged and compared
 - Model output data + CMOR2 + **CMOR tables** → standardized output
 - CMIP5: ~1100 variables in 19 CMOR2 tables
 - PMIP3 subset : ~470 variables in 7 CMOR2 tables
 - PMIP3_Amon PMIP3_day PMIP3_fx PMIP3_Llmon PMIP3_Lmon PMIP3_Olmon PMIP3_Omon
 - **climatological monthly means (monClim variables)** are automatically computed at IPSL from Xmon data supplied by the modeling groups: Amon → Aclim, Omon → Oclim, ...
- files are in NetCDF format and follow the CF (Climate and Forecast) convention
- the file names and directories follow the **DRS**
 - « CMIP5 Data Reference Syntax (DRS) » document
- 1 variable / file, variables can be split along the time axis
- the variables are grouped in **datasets**
 - Warning! Datasets have **versions**

Why is CMORizing important?

- CMORizing...
 - ... takes some time ☹
 - ... but will save a lot of time in the long run ☺
- Files are easy to recognize and compare
 - `tas_Amon_IPSL-CM5A-LR_piControl_r1i1p1_180001-279912.nc`
 - `tas_Amon_MIROC-ESM_midHolocene_r1i1p1_233001-242912.nc`
 - `institution = "JAMSTEC ..."`
 - `references = "Watanabe et al. "`
 - `tracking_id = "44ad96a3-54a5-4d86-a104-fb83fdf227d6"`
- ALL PMIP3 data should be CMORized!
 - ... including PlioMIP ☺
- PMIP3 specific CMOR tables
 - http://www2-pcmdi.llnl.gov/cmor/tables/copy3_of_cmip5-tables/

Current status

	Institute	Country	0k piControl	6k midHolocene	21k Igm	LM past1000 (1000 years)	1% CO ₂ fpcCO2 (140 years)
1	AWI	Germany	Completed	Completed	Completed		
2	BCC	China	CMIP5 (500)	CMIP5 (100)		CMIP5	CMIP5
3	BCCR	Norway	Running Summer 2012	Running Summer 2012	Running Summer 2012	Running Summer 2012	Start April 2012 May 2012
4	CAU-GEOMAR	Germany	Completed	Completed			Running
5	CNRM-CERFACS	France	CMIP5 (850)	CMIP5 (200)	Running April 2012		CMIP5
6	FUB	Germany	PMIP3 (400)		PMIP3 (600)		
7	NOAA-GFDL	USA	CMIP5 (470)		Start Spring 2012		CMIP5
8	NASA-GISS	USA	CMIP5 (1163)	Completed	Completed	CMIP5	
9	IPSL	France	CMIP5 (1000)	CMIP5 (500)	CMIP5 (200)	Running April 2012	CMIP5
10	KNMI or ICHEC ?	Netherlands	Completed	Completed			?
11a	LASG-IAP LASG-CES	China	CMIP5 (500)	Completed	Completed		CMIP5
11b			CMIP5 (501)	Completed ?	Started ? End ?		
11c			Completed			Completed	
12	LOVECLIM	Belgium France Netherlands	Completed	Completed	Completed	Completed	
13	MIROC	Japan	CMIP5 (531)	CMIP5 (100)	CMIP5 (100)	CMIP5	CMIP5
14	MPI-M	Germany	CMIP5 (1156)	CMIP5 (100)	CMIP5 (100)	CMIP5	CMIP5
15	MRI	Japan	CMIP5 (500)	CMIP5 (100)	Running April 2012	Not started July 2012?	CMIP5
16	NCAR	USA	CMIP5 (501)	CMIP5 (301)	CMIP5 (101)	CMIP5	CMIP5
17	OSUVic	USA	Completed	Running May 2012	Running May 2012		Not started April 2012
18	CSIRO-QCCCE	Australia	CMIP5 (500)	CMIP5			CMIP5
19	UK Groups (UBRIS/LEEDS/EDINB URGH - Hadley)	UK	CMIP5 (497)	CMIP5 (-ES: 102 -CC: 35)	Not started Spring 2012	Running Summer 2012	CMIP5
20	UNSW	Australia	PMIP3 (1000)	PMIP3 (500)	Running June 2012	PMIP3	PMIP3
21	UofT	Canada	Running June 2012		Running June 2012		



WARNING!

- Some runs listed as 'in the DB', may be incomplete
- Some data can be wrong

➔ Get in touch with the group!

UNSW
FUB



	CMIP5 DB	PMIP3 DB	Completed not CMORized	Soon completed
0k	13	2	6	2
6k	9	1	7	2
21k	4	1	4	9
LM	5	1	2	4
1% CO ₂	11	1	0	3

Latest news

- PMIP3 data available on the BADC gateway
 - <http://cmip-gw.badc.rl.ac.uk/>
- Replacement of the gateways with the faster P2P system
 - <http://esgf-node.ipsl.fr/>
- Value added products in the PMIP3 DB
 - Xclim data generated from Xmon data with **cdo**
 - ymonmean → Multi-year monthly mean
 - ymonvar → Multi-year monthly variance
 - 88 Gb so far, but the crude process needs to be refined
- LAS Server to visualize data on the IPSL P2P server

What now? We are not there yet...

- Update web site – wiki
- Finish and CMORize experiments
- Identifiers for non-CMIP5 experiments
- Dealing with data on irregular grids
- Getting up-to-date data
- Finding data nodes for non-CMIP5 experiments
- Model documentation with METAFOR
 - <http://q.cmip5.ceda.ac.uk/cmip5/centres/>
- Centralized Quality Control !
- ..