What model runs might be relevant

There are a lot of different model runs available as part of PMIP. In fact the amount of output can be a bit overwhelming at first. On important distinction is the different between *transient* and *equilibrium* simulations. All climate models are run forwards in time and write output every month/day. So this distinction really relates to the forcing inputs, and the climate response to them. From a practical perspective, you should be looking at the long-term statistics of the equilibrium simulations, and the temporal variations in the transient simulations. There are more details and links below, but a quick division of the experiments is…

- **PMIP4/CMIP6 Equilibrium Simulations**
  - **piControl** (Preindustrial): *The control run that all the climate changes can be calculated from*
  - **abrupt4xCO2** (Instantaneous quadrupling of carbon dioxide): *An idealized global warming experiment (primarily included for calculating the climate sensitivity)*
  - **midHolocene** (6,000 yrs ago): *Useful for identifying impacts of orbital forcing*
  - **lgm** (The last glacial maximum at 21,000 yrs ago): *The archetypal cold climate state*
  - **lig127k** (Last Interglacial, 127,000 yrs ago): *Peak of the warm period prior to last glaciation*
  - **Eoi400** (Pliocene, 3,205,000 years ago): *warm conditions before any Northern Hemisphere glaciation (minimal continental drift)*
  - **DeepMIP** (Eocene & Paleocene, 50-60 million yrs ago): *Warm climates with carbon dioxide concentrations similar to end of century projections (continents drifted, PMIP-only)*
- **PMIP4/CMIP6 Transient Simulations**
  - **1pctCO2** (Carbon dioxide concentrations increase by 1% per year): *An idealized global warming experiment (primarily included for calculating the transient climate response)*
  - **historical** (1850CE onwards): *Free-running simulations of industrial era (so climate variability's phase/sign does not match observations, but its statistics should)*
  - **past1000** (last millennium, 850CE onwards): *Free-running simulations seeing 1000+ years of climate forcings*
  - **LDv1** (last deglaciation, 21,000 years ago to present): *Very-long simulation that encompasses all forcings (PMIP-only)*
- **Other Transient Simulations** *There are several other long palaeoclimate simulations that my be useful*
  - **TraCE** This simulation runs from 22,000 years before present (22ka) to 1990 CE as well as single-forcing sensitivity simulations of varying lengths. Contact Bette Otto-Bliesner
  - **iTraCE** This simulation runs from 22,000 years before present (22ka) to around 11ka as well as single-forcing sensitivity simulations of varying lengths. It also includes isotopes. Contact Bette Otto-Bliesner
  - **MPI** Simulations with both fast and slow forcings from 8000ka-present. Contact Johann Jungclaus.
  - **Kiel** Simulations of both the Holocene and the Eemian exist for the Kiel model. Contact Vyacheslav Khon.
  - **AWI** Slowly a simulation from the Last Glacial to present is being is created. Contact Gerrit Lohmann
  - **IPSL** Several simulations from 6000ka to present have recently been performed in France. Contact Pascale Braconnot and Olivier Marti.
  - **FAMOUS** An old simulation of the last glacial cycle with accelerated-forcing. Contact Robin Smith

- **EC-Earth3** Simulation from about 8ka. Contact Qiong Zhang
- **CESM1.2.1** Simulation from 11.7 onwards. Contact Zhiping Tian and Dabang Jiang
- **HadCM3** A set of transient sensitivity simulations since the deglacial. There are also series of equilibrium simulations of HadCM3 run over the last glacial cycle. A version of these does exist with water isotopes. Contact Paul Valdes
- **GISS** There are a series of equilibrium simulations of GISS-E2-1-G run during the Holocene, potentially with water isotopes. Contact Allegra LeGrande

PMIP4/CMIP6 Information

Several different experiments are being performed in PMIP4.

Last Millennium

Experimental design: http://www.geosci-model-dev-discuss.net/gmd-2016-278/
PMIP4 website: https://pmip4.lsce.ipsl.fr/doku.php/exp_design:lm
Database: ESGF
Variables:

Mid Holocene

Experimental design: http://www.geosci-model-dev-discuss.net/gmd-2016-279/
PMIP4 website: https://pmip4.lsce.ipsl.fr/doku.php/exp_design:mh
Database: ESGF
Variables:

Last Glacial Maximum

Experimental design: http://www.geosci-model-dev-discuss.net/gmd-2017-18/
PMIP4 website: https://pmip4.lsce.ipsl.fr/doku.php/exp_design:lgm
Database: ESGF
Variables:

Last Deglaciation (21-9ka)

Experimental design: http://www.geosci-model-dev.net/9/2563/2016/
PMIP4 website: https://pmip4.lsce.ipsl.fr/doku.php/exp_design:index
Database: Model output mostly to be made available directly from the institutes performing the runs
Variables: ?

Eemian - Last Interglacial

Experimental design: http://www.geosci-model-dev-discuss.net/gmd-2016-279/
PMIP4 website: https://pmip4.lsce.ipsl.fr/doku.php/exp_design:lig127
Database: ESGF
Variables:

Pliocene

Experimental design: http://www.clim-past.net/12/663/2016/
USGS Website: http://geology.er.usgs.gov/egpsc/prism/7_pliomip2.html
Database: ESGF
Variables: http://geology.er.usgs.gov/egpsc/prism/7_pliomip2.html

Eocene

EECO, PETM and pre-PETM
Experimental design: http://www.geosci-model-dev-discuss.net/gmd-2016-127/
Website: http://www.deepmip.org Database: ESGF, or DeepMIP database
Variables: Outlined in Appendix A of the Experimental Design paper.

PMIP3/CMIP5 Information

PMIP Last Millenium, mid-Holocene, and LGM

The majority of PMIP model output is held in the PMIP database.

This includes model output for the three 'Tier 1' PMIP time slices: Last Millenium, mid-Holocene, and LGM.

In order to access it, contact Jean-Yves [jean-yves.peterschmitt@lsce.ipsl.fr], or see the instructions here: database.

The current status of the database is here: status.

PlioMIP mid-Pliocene

The PlioMIP data is held on a (password protected) ftp repository in Bristol.

This includes model output for the mid-Pliocene time slab.

In order to access the full outputs, contact Alan Haywood [a.m.haywood@leeds.ac.uk].

You can access a limited amount of output (monthly 2m air temperatures from each model, and ensemble and zonal means) from the Supplementary information of this paper:

http://www.clim-past.net/9/191/2013/cp-9-191-2013.html

LIGMIP last Interglaci[al/ation]

You can access a limited amount of output (monthly 2m air temperatures) from the Supplementary information of this paper: http://www.clim-past.net/9/699/2013/cp-9-699-2013.html

In order to access more data, you would have to contact the groups individually, or contact Dan Lunt [d.j.lunt@bristol.ac.uk] for an email list.

Bette Otto-Bliesner is currently collating precipitation data, so you could contact her [ottobli@ucar.edu] if you want that.

EoMIP Eocene

You can access a limited amount of output (monthly 2m air temperatures from each model, and ensemble and zonal means) from the Supplementary information of this paper: http://www.clim-past.net/8/1717/2012/cp-8-1717-2012.html

In order to access more data, you would have to contact the groups individually, or contact Dan Lunt [d.j.lunt@bristol.ac.uk] for an email list.

Other stuff

Some groups have their own online databases of model simulations:

University of Bristol BRIDGE repository:

http://www.bridge.bris.ac.uk/resources/simulations
If you click on 'Access simulations', you can gain access (netcdf and plots) to model data from a selection of published papers. In addition, you may be able to have access to other simulations, on request [to d.j.lunt@bristol.ac.uk or p.j.valdes@bristol.ac.uk]. A list of currently available groups of simulations is here:
http://www.paleo.bris.ac.uk/ummodel/list_of_simulations.html

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Permanent link:
https://pmip4.lsce.ipsl.fr/doku.php/wg:ptof:models

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