PMIP4 Papers

There are many researchers involved with PMIP4, so we expect that there will be many papers associated with it. There is no desire for PMIP to restrict or proscribe the manuscripts that researchers work upon. However there is clearly a role for some synthesis across various PMIP4 which may need a bit of coordination and support. Functionally we see that there is a pyramid of research activities with 3 different tiers of synthesis and coordination needed.

1. The lowest tier is individual authors or modelling research groups writing manuscripts focussing specifically on what interests them within particular model runs. Involvement from the wider PMIP4 community will probably only slow down the creation these mansucripts
2. The second tier consists of papers that look at aspects of climate across multiple models within a specific time period. The initial papers in this category are likely coordinated by the relevant working group - to ensure both that the whole community is invovled and that the paper is completed fairly quickly.
3. The third tier is research that looks at multiple models across multiple time periods. The first one or two manuscripts at this level will be coordinated to provide an initial synthesis of PMIP4. Once all the data is uploaded onto the ESGF, we hope that further research teams self-organise around interesting topics. The PMIP4 leadership can assist with this, if the authors request help.

Note for proper assessment in IPCC AR6 papers should be submitted by September 2019, and certainly no later than the end of December 2019 to allow for citation in IPCC AR6.

Tier 2 & 3 Papers (as of May 2019)

Experiment(s)	**Subject**	**Contact**	**Working Group**	**Notes**
lig127k	Interglacial warmth	Bette Otto-Bleisner	QUIGS	*meeting in July to write*
midPliocene-eoi400	Large-scale features	Alan Haywood (Leeds)	PlioMIP	*1st from PlioMIP2 plans*
midPliocene-eoi400	Vegetation/climate interactions	Qiong Zhang (Stockholm)	PlioMIP	*2nd from PlioMIP2 plans*
lgm	Global patterns and Benchmarking	Sandy Harrison & Masa Kageyama		
midHolocene	no collaborative paper underway	-		
past1000				

Planned P2FVar Analyses

There were several collaborations that emerged during the UCL Workshop (May 2019). Briefly these were:

1. **How do the dynamics of the monsoons change throughout the Holocene?** This will

mainly analyse Holocene transient simulations coming out of France and Germany, and compare them to proxy records (mainly speleothems). There was a focus on low-frequency variability. This effort is closely connected to the PACMEDY consortium, and lead by Roberta D'Agostino.

2. **Methodological developments for emergent constraints**. Thinking about priors for Bayesian analysis. This effort was spearheded by Stockholm in combination with BlueSkiesResearch. I will
3. **Transient behaviour of AMOC**. This group had two possible foci, the last millennium simulations or other Holocene transient runs. There is so far no multi-model paper focused on AMOC behaviour in all the past1000 runs. Elements of this research have been published elsewhere though (say in single model papers) and there are data availability issues. A paper comparing transient runs performed outside of PMIP to proxy data shall be worked on (led by UCL with MPI and IPSL involved).
4. **Local, interannual variability**. This built on some work by Chris and Kira analysing changes in interannual variability across PMIP3 simulations. An additional stream of analysis showed that the modes of climate variability appear fairly consistent across multiple climate staes (with a focus on mediterranean climates). This is being coordinated by Heidelberg, with contributions from Arizona, AWI, UCL & Yale.

Personal Contributions

Please add your interest in leading or contributing to research on individual topics relating to Past2Future and/or variability below...