# PMIP WG - Past2Future: insights from a constantly varying past

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## Group description

Paleoclimate modellers have for many years argued the importance of paleoclimate simulations as a means of increasing understanding of the climate system. However, it is only since the fifth iteration of the climate model inter-comparison project (CMIP5) that simulations of paleoclimates have been officially included. This endeavour created the first coherent ensemble of climate models run for past climates, recent historical, control and future scenarios. This fostered the first multi-model, multi-state analyses of both how climate variability changed as the climate changed in the past, and how we can future projections can quantitatively benefit from this knowledge.

For CMIP6, the number of paleoclimate intervals has been expanded (to include Pliocene, Eemian, Last glacial maximum, mid Holocene and Last Millennium) and all model versions used must also run increased carbon dioxide and historical simulations, enabling us to to move towards consideration of patterns of climate change and modes of variability in past and future as well as continuing the well established focus relating to global climate change.

This working group seeks to help climate scientists make the best use of the fact that CMIP6/PMIP4 includes so many models and time periods. This is a great source of information that represents a lot of effort by researchers from across the world - and then donated to the rest of the community. However it is such a large and complicated dataset that gleaning those insights can be a challenge. This working group exists to make analyses using multiple models, multiple time periods easier to undertake. The working group has put together a series of resources that provide easy access to some standard model fields, links to relevant paleo-observations, methdologies for performing analysis, examples of prior studies using them, and even some software for researchers to undertake initial analyses.

## About The Group

This working group was created by merging two PMIP3 WG: Past to Future and PaleoVAR (Variability and Mean State). The aim of the merger is to encourage researchers to look across multiple past and future climates in the PMIP ensemble. This is something that is especially useful for modes of variability, where the behaviour in future projections is often poorly constrained.

- Aims and Scope
- Members and mailing list
- Meetings
- Planned Analyses

# Resources

### Inputs

- What model runs might be relevant?
- Model outputs for inspection and download?
- Where to find the data?

### Methods

- Methods for combining data and models

### Focus areas, projects and subgroups

- LGM sensitivity subgroup

### Examples

- Papers on model evaluation
- Papers analysing climate variability
- Papers relating past and future

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