# Design for the last Interglacial (at 127 ky BP) run

You will find on this page information about the experiment design for the PMIP4 last Interglacial (at 127 ky BP) experiment.

Please make sure to read the Associated publication before setting up your experiments or using the output data, and read any *how-to* sections associated with specific boundary conditions.

Get in touch with the following people if you have questions:

| Bette Otto-Bliesner | Scientific questions |
| Jean-Yves Peterschmitt | Technical questions or missing data |

## Associated publication

**The PMIP4 contribution to CMIP6 – Part 2: Two interglacials, scientific objective and experimental design for Holocene and Last Interglacial simulations**, Otto-Bliesner, B. L., Braconnot, P., Harrison, S. P., Lunt, D. J., Abe-Ouchi, A., Albani, S., Bartlein, P. J., Capron, E., Carlson, A. E., Dutton, A., Fischer, H., Goelzer, H., Govin, A., Haywood, A., Joos, F., LeGrande, A. N., Lipscomb, W. H., Lohmann, G., Mahowald, N., Nehrbass-Ahles, C., Pausata, F. S. R., Peterschmitt, J.-Y., Phipps, S. J., Renssen, H., and Zhang, Q., Geosci. Model Dev., 10, 3979-4003, doi:10.5194/gmd-10-3979-2017, 2017.

## Specifications

| | PMIP4-CMIP6 specifications |
|---|---|
| PMIP4-CMIP6 name | **lig127k** |
| Astronomical parameters | **eccentricity** = 0.039378<br>**obliquity** = 24.04°<br>**perihelion-180°** = 275.41°<br>**Date of vernal equinox** : March 21 at noon |
| Trace gases | $CO_2$ = 275 ppm<br>$CH_4$ = 685 ppb<br>$N_2O$ = 255 ppb<br>**CFC** = 0<br>$O_3$ = same as in CMIP6 piControl |
| Solar activity | Same as in CMIP6 piControl (TSI = 1360.747 W.m-2) |
| Ice sheets | Same as in CMIP6 piControl |
| Topography and coastlines | Same as in CMIP6 piControl |

|  | **PMIP4-CMIP6 specifications** |
|---|---|
| Volcanic activity | Same as in CMIP6 piControl |
| Aerosols | Modified sources, atmospheric concentrations or radiative forcing, depending on model complexity and model configuration used for DECK and historical experiments<br>cf. documenting papers: Otto-Bliesner et al, in prep and Kageyama et al, subm.<br>Access to data |
| Vegetation | Depending on model complexity and model configuration used for DECK and historical experiments:<br>Interactive vegetation **or** Interactive carbon cycle (LAI) **or** Prescribed to present-day values or lig127k values computed from off-line vegetation model<br>The methodology to represent vegetation should be the same as for the CMIP6 piControl simulation<br>cf. documenting papers: Otto-Bliesner et al, in prep and Kageyama et al, subm. |

# Collaboration

- The PMIP4-CMIP6 **lig127k** simulation is being coordinated with ISMIP6. The output from the lig127k simulation will be used by ISMIP6 to force standalone ice sheet experiments (*lastInterglacialforcedism*). This will increase our understanding of the sensitivity of the ice sheets, complementing the suite of standalone ISMIP6 ice sheet experiments.

- The PMIP4-CMIP6 **midHolocene** and **lig127k** simulations are also expected to be relevant to analyses in SIMIP's assessment of the role of sea-ice changes in climate changes and AerChemMIP's assessment of the role of dust

# Sensitivity experiments

## Sensitivity to Prescribed Vegetation

## Sensitivity to Prescribed Ice Sheets

## Simulation to explore the effects of the H11 event