



Supplement of

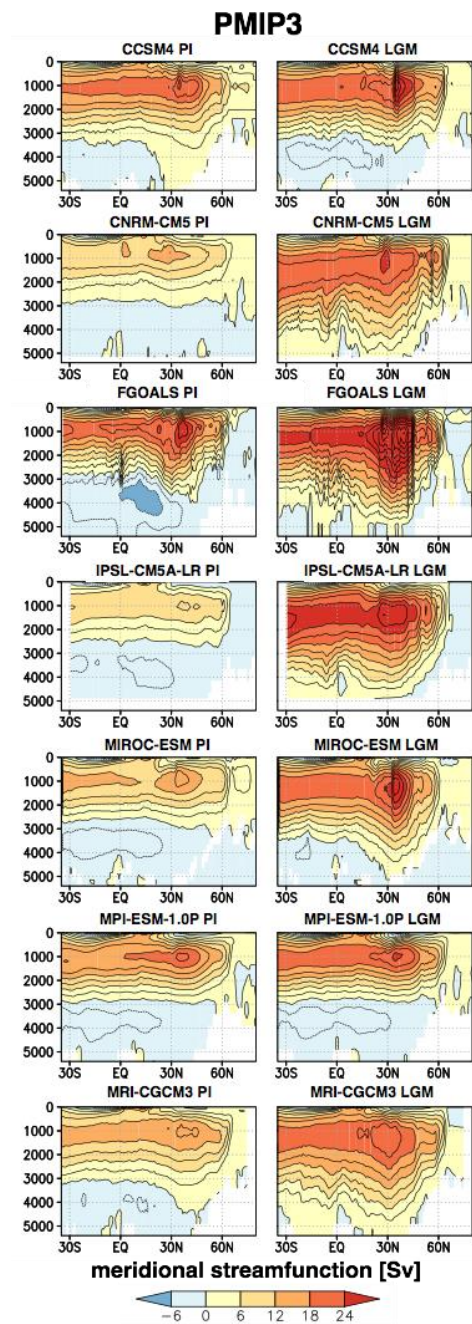
The PMIP4 Last Glacial Maximum experiments: preliminary results and comparison with the PMIP3 simulations

Masa Kageyama et al.

Correspondence to: Masa Kageyama (masa.kageyama@lsce.ipsl.fr)

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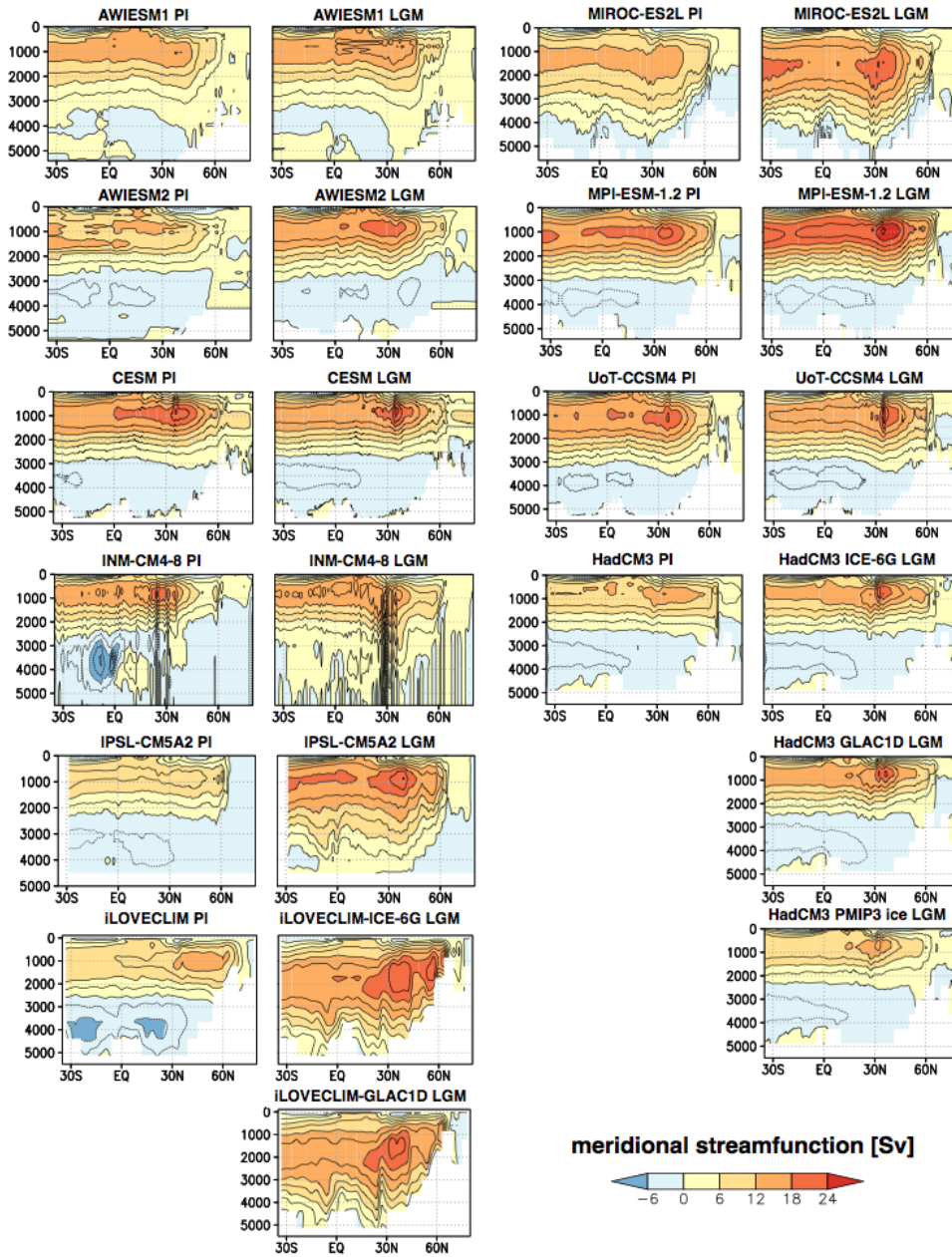
Supplementary material



Supplementary Figure S1: Atlantic Meridional Streamfunction (Sv) in the PMIP3 PI and LGM experiments, for the

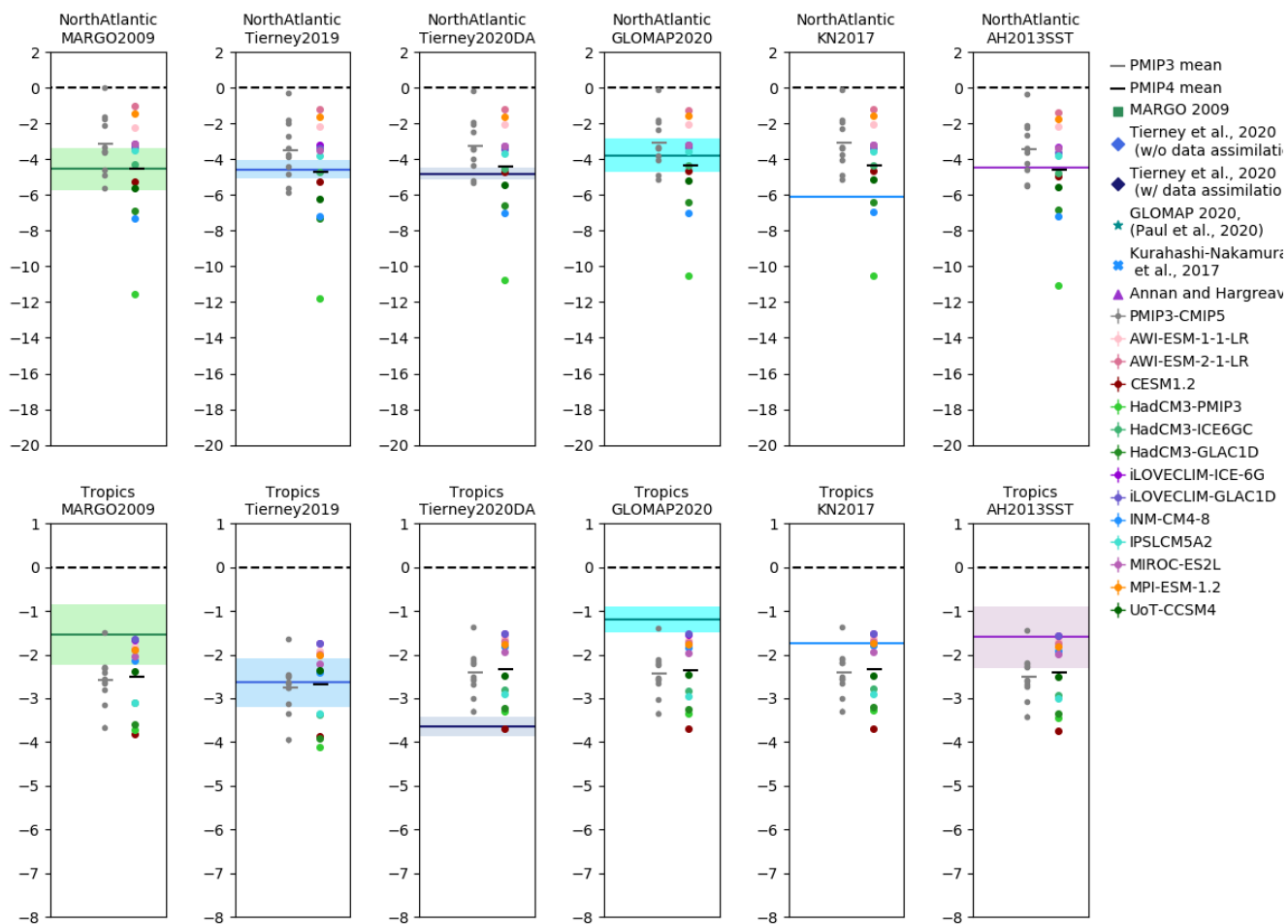
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PMIP4



Supplementary Figure S2: Atlantic Meridional Streamfunction (Sv), for the PI and LGM, for the PMIP4 models.

Data-model comparison summary CMIP5-PMIP3 vs CMIP6-PMIP4



Supplementary Figure S3: model-data comparison over the North Atlantic and Tropical oceans.

Table S1. Statistics on the LGM – PI mean annual surface air temperature anomalies, for the PMIP3 and PMIP4 ensembles.

Units: °C.

| PMIP phase | Region | Minimum | Average | Maximum |
|------------|------------------------------------------|---------|---------|---------|
| PMIP3 | Globe | -5.72 | -4.71 | -2.70 |
| PMIP4 | Globe | -7.17 | -4.77 | -3.26 |
| PMIP3 | Southern extratropics (South of 30°S) | -5.79 | -3.82 | -2.42 |
| PMIP4 | Southern extratropics (South of 30°S) | -8.15 | -4.77 | -1.27 |
| PMIP3 | Tropics (30°S-30°N) | -3.92 | -2.80 | -1.66 |
| PMIP4 | Tropics (30°S-30°N) | -4.0 | -2.68 | -1.77 |
| PMIP3 | Northern extratropics (North of 30°N) | -12.65 | -9.48 | -4.99 |
| PMIP4 | Northern extratropics (North of 30°N) | -12.58 | -8.83 | -5.18 |

Table S2: Global and regional (30° latitude bands) averages of the LGM – PI MAT anomalies over land and oceans, in °C.

| Model | PMIP phase | Globe | 60-90°N | 30-60°N | 0-30°N | 30°S-0 | 30-60°S | 60-90S |
|------------------|------------|-------|---------|---------|--------|--------|---------|--------|
| CESM | PMIP3 | -4.85 | -13.03 | -8.11 | -2.68 | -2.36 | -3.93 | -7.98 |
| CNRM | PMIP3 | -2.70 | -7.38 | -4.16 | -1.72 | -1.59 | -1.80 | -4.19 |
| FGOALS-g2 | PMIP3 | -4.63 | -14.78 | -8.59 | -3.32 | -2.72 | -1.89 | -4.21 |
| GISSE2-p1 | PMIP3 | -4.92 | -17.67 | -8.71 | -3.27 | -2.54 | -2.37 | -3.84 |
| GISSE2-p2 | PMIP3 | -5.19 | -18.87 | -9.13 | -3.32 | -2.68 | -2.61 | -4.22 |
| IPSL | PMIP3 | -4.64 | -11.37 | -7.96 | -3.62 | -2.98 | -2.35 | -5.55 |
| MIROC | PMIP3 | -5.40 | -17.11 | -11.17 | -2.74 | -2.16 | -2.74 | -9.04 |
| MPI-p1 | PMIP3 | -4.41 | -12.87 | -7.15 | -2.70 | -2.32 | -2.51 | -7.46 |
| MPI-p2 | PMIP3 | -4.67 | -13.94 | -7.79 | -2.88 | -2.42 | -2.51 | -7.57 |
| MRI | PMIP3 | -4.71 | -11.21 | -6.16 | -2.87 | -2.77 | -4.18 | -10.36 |
| AWIESM1 | PMIP4 | -3.75 | -10.20 | -6.02 | -1.79 | -1.74 | -2.75 | -8.27 |
| AWIESM2 | PMIP4 | -3.81 | -9.29 | -5.62 | -1.89 | -1.87 | -2.94 | -9.84 |
| CESM1-2 | PMIP4 | -6.80 | -16.98 | -9.09 | -3.96 | -4.05 | -6.51 | -12.82 |
| HadCM3-PMIP3 | PMIP4 | -7.16 | -18.69 | -11.96 | -4.32 | -3.76 | -5.16 | -11.06 |
| HadCM3-ICE6GC | PMIP4 | -5.92 | -16.97 | -9.32 | -3.60 | -3.20 | -4.08 | -9.27 |
| HadCM3-GLAC1D | PMIP4 | -6.46 | -16.52 | -9.32 | -3.91 | -3.77 | -5.47 | -10.82 |
| iLOVECLIM-ICE-6G | PMIP4 | -3.28 | -6.61 | -4.81 | -2.05 | -1.55 | -3.19 | -6.24 |
| iLOVECLIM-GLAC1D | PMIP4 | -3.26 | -6.70 | -4.71 | -2.03 | -1.54 | -3.16 | -6.29 |
| INM-CM4-8 | PMIP4 | -3.73 | -11.23 | -8.49 | -2.98 | -1.43 | -0.69 | -2.84 |
| IPSLCM5A2 | PMIP4 | -4.63 | -10.96 | -8.16 | -3.63 | -2.94 | -2.44 | -5.00 |
| MIROC-ES2L | PMIP4 | -4.02 | -12.44 | -7.78 | -2.44 | -1.87 | -2.19 | -5.35 |
| MPI-PMIP4 | PMIP4 | -3.90 | -10.33 | -6.30 | -2.22 | -1.89 | -2.73 | -7.54 |
| UT-CCSM4 | PMIP4 | -5.27 | -12.81 | -8.01 | -2.55 | -2.61 | -5.34 | -10.43 |

Table S3: Global and regional (30° latitude bands) averages of the LGM – PI MAT anomalies over land, in °C.

| Model | PMIP phase | Globe | 60-90°N | 30-60°N | 0-30°N | 30°S-0 | 30-60°S | 60-90S |
|------------------|------------|--------|---------|---------|--------|--------|---------|--------|
| CESM | PMIP3 | -7.53 | -13.43 | -10.60 | -3.11 | -2.62 | -3.53 | -7.70 |
| CNRM | PMIP3 | -4.52 | -7.49 | -5.92 | -2.12 | -1.94 | -2.45 | -2.14 |
| FGOALS-g2 | PMIP3 | -7.27 | -14.39 | -10.21 | -4.01 | -3.28 | -3.21 | -4.61 |
| GISSE2-p1 | PMIP3 | -8.51 | -17.65 | -11.90 | -3.86 | -3.33 | -3.38 | -5.78 |
| GISSE2-p2 | PMIP3 | -8.67 | -18.86 | -11.67 | -3.86 | -3.46 | -3.57 | -6.10 |
| IPSL | PMIP3 | -7.55 | -12.26 | -10.72 | -3.95 | -3.30 | -3.59 | -6.42 |
| MIROC | PMIP3 | -9.74 | -16.23 | -14.02 | -3.20 | -2.73 | -2.98 | -5.16 |
| MPI-p1 | PMIP3 | -8.18 | -13.63 | -10.63 | -3.57 | -3.09 | -3.37 | -8.21 |
| MPI-p2 | PMIP3 | -8.71 | -15.01 | -11.41 | -3.82 | -3.20 | -3.22 | -8.34 |
| MRI | PMIP3 | -6.98 | -11.63 | -8.23 | -3.32 | -3.11 | -4.65 | -8.56 |
| AWIESM1 | PMIP4 | -6.62 | -11.85 | -8.76 | -1.83 | -1.60 | -2.33 | -7.63 |
| AWIESM2 | PMIP4 | -6.69 | -11.17 | -8.56 | -2.21 | -1.82 | -2.57 | -8.63 |
| CESM1-2 | PMIP4 | -9.49 | -16.61 | -12.19 | -4.75 | -4.31 | -6.38 | -10.22 |
| HadCM3-PMIP3 | PMIP4 | -11.84 | -18.65 | -14.66 | -5.83 | -4.95 | -5.70 | -7.44 |
| HadCM3-ICE6GC | PMIP4 | -10.10 | -17.60 | -12.62 | -4.68 | -4.43 | -4.66 | -10.60 |
| HadCM3-GLAC1D | PMIP4 | -10.40 | -17.01 | -12.12 | -5.16 | -4.82 | -5.49 | -6.13 |
| iLOVECLIM-ICE-6G | PMIP4 | -4.67 | -7.83 | -5.67 | -2.53 | -1.71 | -3.60 | -5.60 |
| iLOVECLIM-GLAC1D | PMIP4 | -4.80 | -7.70 | -5.51 | -2.51 | -1.71 | -3.72 | -5.16 |
| INM-CM4-8 | PMIP4 | -7.33 | -12.95 | -11.42 | -3.58 | -1.83 | -2.45 | -3.98 |
| IPSLCM5A2 | PMIP4 | -7.60 | -11.71 | -10.96 | -4.07 | -3.55 | -3.77 | -6.01 |
| MIROC-ES2L | PMIP4 | -6.88 | -12.69 | -10.44 | -2.94 | -1.89 | -2.85 | -5.50 |
| MPI-PMIP4 | PMIP4 | -7.15 | -11.72 | -9.37 | -2.87 | -2.28 | -3.34 | -5.63 |
| UT-CCSM4 | PMIP4 | -7.10 | -13.45 | -9.59 | -2.58 | -2.47 | -4.30 | -9.09 |

Table S4: Global and regional (30° latitude bands) averages of the LGM – PI MAT anomalies over oceans, in °C.

| Model | PMIP phase | Globe | 60-90°N | 30-60°N | 0-30°N | 30°S-0 | 30-60°S | 60-90S |
|------------------|------------|-------|---------|---------|--------|--------|---------|--------|
| CESM | PMIP3 | -2.79 | -12.14 | -3.98 | -2.30 | -2.17 | -4.04 | -6.71 |
| CNRM | PMIP3 | -1.25 | -6.77 | -1.19 | -1.44 | -1.39 | -1.79 | -2.64 |
| FGOALS-g2 | PMIP3 | -2.42 | -15.71 | -4.98 | -2.82 | -2.39 | -1.88 | -1.35 |
| GISSE2-p1 | PMIP3 | -2.62 | -17.59 | -4.15 | -2.97 | -2.26 | -2.36 | -2.08 |
| GISSE2-p2 | PMIP3 | -2.95 | -18.78 | -5.36 | -3.06 | -2.40 | -2.61 | -2.50 |
| IPSL | PMIP3 | -2.55 | -9.59 | -3.56 | -3.33 | -2.83 | -2.33 | -2.74 |
| MIROC | PMIP3 | -2.51 | -19.09 | -6.15 | -2.47 | -1.96 | -2.80 | -4.88 |
| MPI-p1 | PMIP3 | -2.14 | -10.01 | -2.49 | -2.29 | -2.03 | -2.50 | -5.29 |
| MPI-p2 | PMIP3 | -2.27 | -10.24 | -2.96 | -2.43 | -2.12 | -2.51 | -5.37 |
| MRI | PMIP3 | -2.83 | -10.41 | -2.49 | -2.54 | -2.57 | -4.25 | -8.77 |
| AWIESM1 | PMIP4 | -1.95 | -4.59 | -2.39 | -1.74 | -1.71 | -2.84 | -7.02 |
| AWIESM2 | PMIP4 | -2.01 | -3.32 | -1.80 | -1.74 | -1.81 | -3.02 | -8.88 |
| CESM1-2 | PMIP4 | -4.96 | -17.42 | -4.60 | -3.55 | -3.92 | -6.60 | -14.02 |
| HadCM3-PMIP3 | PMIP4 | -4.08 | -17.68 | -7.78 | -3.56 | -3.31 | -5.18 | -8.40 |
| HadCM3-ICE6GC | PMIP4 | -3.46 | -14.73 | -4.81 | -3.06 | -2.77 | -4.08 | -7.05 |
| HadCM3-GLAC1D | PMIP4 | -3.91 | -14.29 | -5.40 | -3.28 | -3.38 | -5.53 | -9.04 |
| iLOVECLIM-ICE-6G | PMIP4 | -2.05 | -7.50 | -2.86 | -1.76 | -1.44 | -3.23 | -5.74 |
| iLOVECLIM-GLAC1D | PMIP4 | -1.91 | -8.12 | -2.80 | -1.73 | -1.43 | -3.18 | -5.08 |
| INM-CM4-8 | PMIP4 | -1.34 | -7.68 | -4.32 | -2.61 | -1.22 | -0.60 | 0.22 |
| IPSLCM5A2 | PMIP4 | -2.53 | -9.40 | -3.73 | -3.29 | -2.71 | -2.42 | -2.06 |
| MIROC-ES2L | PMIP4 | -2.20 | -12.46 | -3.88 | -2.19 | -1.84 | -2.20 | -3.71 |
| MPI-PMIP4 | PMIP4 | -1.88 | -5.77 | -2.22 | -1.90 | -1.71 | -2.74 | -6.13 |
| UT-CCSM4 | PMIP4 | -3.74 | -11.94 | -5.11 | -2.42 | -2.60 | -5.50 | -9.97 |