# CMIP5 'Paleo' Simulations on ESGF

| Brief Description | Case Details | Diagnostics | | | | | Length of Run Diagnostics | |
|---|---|---|---|---|---|---|---|---|
| **CCSM4 1° Mid-Holocene 6ka simulation**<br>**Case Name:** b40.mh6ka.1deg.003<br>**Data Availability:** CESM \| CMIP5 | Details | 1281-1300 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries |
| **CCSM4 1° Last Millennium 850-1850 simulation**<br>**Case Name:** b40.lm850-1850.1deg.001<br>**Data Availability:** CESM \| CMIP5 | Details | 1821-1850 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (850-1049) |
| **CCSM4 1° Last Millennium 1850-2005 simulation**<br>**Case Name:** b40.lm1850-2005.1deg.001<br>**Data Availability:** CESM | Details | 1986-2005 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (1850-2000) |
| **CCSM4 1° Last Millennium 1850-2005 simulation w/annual orbital**<br>**Case Name:** b40.lm1850-2005.1deg.002<br>**Data Availability:** CESM | Details | 1986-2005 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR (1850-1905) | Ocean Timeseries (1850-1965) |
| **CCSM4 1° Last Glacial Maximum 1499-1900 simulation**<br>**Case Name:** b40.lgm21ka.1deg.003<br>**Data Availability :**CMIP5 | Details | 1881-1900 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (1499-1855) |
| **CCSM4 1° Mid-Pliocene Warm Period (ca 3 Ma) simulation**<br>**Case Name:** b40.plio.FV1.003<br>**Data Availability:** Pending | Details | 481-500 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries |

- Brady, E.C., B.L. Otto-Bliesner, J.E. Kay, and N. Rosenbloom, 2013: Sensitivity to glacial forcing in the CCSM4. *Journal of Climate*, 26, 1901-1924.

# CMIP5 'Paleo' Simulations on ESGF

| Brief Description | Case Details | Diagnostics | | | | | Length of Run Diagnostics | |
|---|---|---|---|---|---|---|---|---|
| **CCSM4 1° Mid-Holocene 6ka simulation**<br>**Case Name:** b40.mh6ka.1deg.003<br>**Data Availability:** CESM \| CMIP5 | Details | 1281-1300 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries |
| **CCSM4 1° Last Millennium 850-1850 simulation**<br>**Case Name:** b40.lm850-1850.1deg.001<br>**Data Availability:** CESM \| CMIP5 | Details | 1821-1850 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (850-1049) |
| **CCSM4 1° Last Millennium 1850-2005 simulation**<br>**Case Name:** b40.lm1850-2005.1deg.001<br>**Data Availability:** CESM | Details | 1986-2005 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (1850-2000) |
| **CCSM4 1° Last Millennium 1850-2005 simulation w/annual orbital**<br>**Case Name:** b40.lm1850-2005.1deg.002<br>**Data Availability:** CESM | Details | 1986-2005 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR (1850-1905) | Ocean Timeseries (1850-1965) |
| **CCSM4 1° Last Glacial Maximum 1499-1900 simulation**<br>**Case Name:** b40.lgm21ka.1deg.003<br>**Data Availability :**CMIP5 | Details | 1881-1900 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (1499-1855) |
| **CCSM4 1° Mid-Pliocene Warm Period (ca 3 Ma) simulation**<br>**Case Name:** b40.plio.FV1.003<br>**Data Availability:** Pending | Details | 481-500 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries |

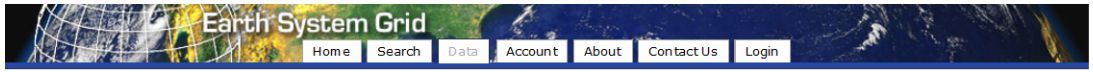

- Brady, E.C., B.L. Otto-Bliesner, J.E. Kay, and N. Rosenbloom, 2013: Sensitivity to glacial forcing in the CCSM4. *Journal of Climate*, 26, 1901-1924.
- Landrum, L., B.L. Otto-Bliesner, E.R. Wahl, A. Conley, P.J. Lawrence, N. Rosenbloom, and H. Teng, 2013: Last Millennium climate and its variability in CCSM4. *Journal of Climate*, 26, 1085-1111.

# PMIP3 'Paleo' Simulations on ESGF

| Brief Description | Case Details | Diagnostics | | | | | Length of Run Diagnostics | |
|---|---|---|---|---|---|---|---|---|
| **CCSM4 1° Mid-Holocene 6ka simulation**<br>**Case Name:** b40.mh6ka.1deg.003<br>**Data Availability:** CESM \| CMIP5 | Details | 1281-1300 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries |
| **CCSM4 1° Last Millennium 850-1850 simulation**<br>**Case Name:** b40.lm850-1850.1deg.001<br>**Data Availability:** CESM \| CMIP5 | Details | 1821-1850 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (850-1049) |
| **CCSM4 1° Last Millennium 1850-2005 simulation**<br>**Case Name:** b40.lm1850-2005.1deg.001<br>**Data Availability:** CESM | Details | 1986-2005 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (1850-2000) |
| **CCSM4 1° Last Millennium 1850-2005 simulation w/annual orbital**<br>**Case Name:** b40.lm1850-2005.1deg.002<br>**Data Availability:** CESM | Details | 1986-2005 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR (1850-1905) | Ocean Timeseries (1850-1965) |
| **CCSM4 1° Last Glacial Maximum 1499-1900 simulation**<br>**Case Name:** b40.lgm21ka.1deg.003<br>**Data Availability :**CMIP5 | Details | 1881-1900 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries (1499-1855) |
| **CCSM4 1° Mid-Pliocene Warm Period (ca 3 Ma) simulation**<br>**Case Name:** b40.plio.FV1.003<br>**Data Availability:** Pending | Details | 481-500 - 1°<br>Pre-Industrial Control | Atm | Ice | Land | Ocean | CCR | Ocean Timeseries |


- Brady, E.C., B.L. Otto-Bliesner, J.E. Kay, and N. Rosenbloom, 2013: Sensitivity to glacial forcing in the CCSM4. *Journal of Climate*, 26, 1901-1924.
- Landrum, L., B.L. Otto-Bliesner, E.R. Wahl, A. Conley, P.J. Lawrence, N. Rosenbloom, and H. Teng, 2013: Last Millennium climate and its variability in CCSM4. *Journal of Climate*, 26, 1085-1111.
- Rosenbloom, N.A., B. L. Otto-Bliesner, E. C. Brady, and P. J. Lawrence, 2013: Simulating the mid-Pliocene Warm Period with the CCSM4 model. *Geosci. Model Dev.,* 6, 549-561.

# CCSM3 TraCE-21ka simulation on NCAR ESG




## Simulation of the Transient Climate of the Last 21,000 Years (TraCE-21ka)

This TraCE-21ka dataset contains the monthly atmospheric output from the transient simulation with CCSM3 of the climate from the Last Glacial Maximum (LGM) to Present. These results are from a fully-coupled, non-accelerated atmosphere-ocean-sea ice-land surface simulation at the T31_gx3 resolution. The simulation starts at 22,000 years before present (22 ka) and finishes in 1990 CE. The model is forced with transient orbital parameters and greenhouse gas concentrations. Transient boundary conditions include the ICE-5G ice sheets – extent and topography, and changing paleogeography as sea level rises from its LGM low stand to modern levels. We also prescribe a transient scenario of freshwater forcing to the oceans from the retreating ice sheets. Vegetation is prognostic. More details of the boundary conditions are included in the table below.

TraCE-21ka Homepage

The data are organized in 36 segments. Each segment includes the available atmospheric variables in CMIP5 single-variable time series format. The files are in netcdf format. Note that some discontinuities may exist at single grid points when the boundary conditions or the time step changed.

Publication acknowledgement:

TraCE-21ka was made possible by the DOE INCITE computing program, and supported by NCAR, the NSF P2C2 program, and the DOE Abrupt Change and EaSM programs.

| Prefix | Years BP | ICE-5G | NH freshwater to ocean | SH freshwater to ocean | Geography change | Notes |
|---|---|---|---|---|---|---|
| trace.01 | 22000-20001 | | | | | |
| trace.02 | 20000-19001 | LGM | | | | |
| trace.03 | 19000-18501 | | North Atlantic | | | |
| trace.04 | 18500-18401 | | | | | |
| trace.05 | 18400-17501 | | Gulf of Mexico | | | |

# Upcoming Meetings

# Discussion:

- What should be the high-level Science Targets (~5) for CESM2 (~2016)?
- What model biases could limit progress?
- What metrics would be useful to assess progress?

- Science targets:
  - Relevant to several Working Groups
  - Paleo data and modeling can contribute to assessment

- Some possible Science targets:
  1. Improvement in projections of 'Global' Monsoons
  2. Improvement in projections of Sea Level
  3. More extensive understanding of Biogeochemical Cycles