Project: MPIESM (linked to former name COSMOS) Max-Planck-Institute Earth System Model initial, boundary condition, and model configuration data

Project acronym for link in /pool/data: MPIESM

Principal investigator (long-term responsible contact): Michael Botzet

Applicant (if not the same as above): Karl-Hermann Wieners

Allocation period: 04/2022 - 03/2027

Allocation Period	04/2022 - 03/2027
Volume	0.7 TB
Expected Volume Change	-
License allows usage on DKRZ resources	yes

Project overview

This project comprises the input and model state data required for common MPIESM setups and intercomparisons projects, created and compiled by different MPIESM developers and users.

Data generated by MPI-M is provided under the CC-BY-NC-SA 4.0 license (https://creativecommons.org/licenses/by-nc-sa/4.0/). Their usage is restricted accordingly.

There is no specific citation available for this data set. Individual subsets (such as CMIP6 data) come under their own citation, detailed in the files' metadata.

Details of the MPIESM model are described in

Mauritsen, T. et al. (2019), Developments in the MPI-M Earth System Model version 1.2 (MPI-ESM1.2) and Its Response to Increasing CO2, J. Adv. Model. Earth Syst.,11, 998-1038, doi:10.1029/2018MS001400

Data content

MPIESM model state (restart) data is provided for all CMIP6 CMIP and ScenarioMIP experiments by DKRZ and MPI-M to allow reproduction of results.

MPIESM input data is provided as climatology or time-series, either globally/zonally uniform or as spatial distribution data, in different horizontal (T31, T63, T127 and T255) and vertical or spectral-band resolutions. It also contains instructions and scripts for generating compatible data from source input, and configuration data for the model setup, in particular for model coupling.

Data is provided in NetCDF format, except for the scripts and some text files (e.g. Land Cover Types, Measuring Station Lists). Contents (variable selection) and format (gridding) of the data files is specific to MPIESM requirements,

For recent data, only restart and coupling data is stored in MPIESM, while input data for the different model components (ECHAM6, MPIOM) is stored in their respective /pool/data project. Older data typically employs 'tar' archives, holding both input and restart information.

Range of planned scientific data usage

Access to this data is essential for all users of MPIESM in the versions provided by MPI-M. Though MPIESM applications will increasingly be ported to ICON, for the upcoming years many institutions associated with DKRZ will depend on it (see https://mpimet.mpg.de/en/science/models/mpi-esm)

Model use requires consent to our software license agreement

(https://mpimet.mpg.de/fileadmin/projekte/ICON-ESM/mpi-m_sla_201202.pdf)

Data Storage Usage Plan

The current data volume is about 0.5 TB. Extension of restart data to additional activities related to CMIP6 may need to be considered