README of DKRZ /pool/data/icon-xpp, Date: 2024-11-29

[1] TITLE OF THE DATA COLLECTION
Input Data for ICON-XPP (eXtended Predictions and Projections) Configuration

[2] PATH TO THE DATA COLLECTION
/pool/data/icon-xpp
this folder is mirrowed to:
- DWD Computer RCL: /hpc/uwork/icon-sml/icon-xpp-pool
- ECMWF Computer ATOS: tbd

[3] CONTACT PERSON FOR THE DATA COLLECTION
Trang Van Pham, Deutscher Wetterdienst (DWD), trang.pham-van@dwd.de

[4] DATA USAGE LICENSE AND CITATION REQUIREMENTS
- For the CMIP7 forcing data:
To our knowledge, the CMIP7 data license has not yet been officially released. It is
expected to be published soon at CMIP Data Citation and Licenses
(https://wcrp-cmip.org/cmip-data-citation-and-licenses/). Typically, CMIP data are made
available under the CC-BY-4.0 license. We will update this section with the official
license information and data citation requirements as soon as they become available.

- For other icon-xpp input data: citation will be updated!

[5] DESCRIPTION OF THE DATA COLLECTION
This icon-xpp data collection contains input data to perform simulations with the
ICON-XPP configurations. ICON-XPP (ICON-eXtended Predictions and Projections; Müller
and Lorenz, 2024) is a newly implemented configuration of the ICON model. This global
coupled model system contains the atmosphere ICON-NWP model (Zängl et al., 2015),
the ocean model ICON-O (Korn, 2017, Korn et al., 2022) and the Hydrological Discharge
model HD (Hagemann & Ho-Hagemann, 2021). ICON-XPP has been developed for
climate predictions and climate projections.

Under this icon-xpp data pool raw CMIP7 forcings data (https://wcrp-cmip.org/cmip7/cmip7-data-request/)
↪ are interpolated onto icon-xpp grid (R2B5 (ca. 80 km) for
he atmosphere and R2B7 (ca. 20 km) for the ocean).

The data files will be mostly external forcings for a climate model like: aersosol, ozone, land use, etc.
↪ The data are global and time range will span from historical period 1850
to future scenarios 2100.

This data collection will be later expanded to meet CMIP requirements. In the future, it is also expected
↪ to include forcing data for pre-CMIP8 and future CMIP versions.

[6] DATA USAGE SCENARIO
This data collection can be used for CMIP7 experiments and for related
ICON-XPP studies. Target communities are research institutions
and universities involved in climate modeling and Earth system sciences.

[7] DATA CREATION METHODS
instead of:
- Folder XXXXX : Selected CMIP7 forcing data (non-interpolated) downloaded from
https://wcrp-cmip.org/cmip7/cmip7-data-request/
- Folder YYYYY: CMIP7 forcing data interpolated to the ICON-XPP grid R2B5/R2B7
(atmosphere/ocean) using WHATMETHOD.

write this:
In each data folder, there is a separate readme file, in which, detailed information about the data can
↪ be found.

[8] DATA FORMAT AND VOLUME
The expected volume of the entire data collection is 80 TB. Initially, the data collection will be in the
↪ setup phase, and its volume will gradually increase over time.
The file format is NetCDF.

[9] DURATION OF DATA STORAGE
Storage resources have currently been granted until 2029-11-30. An extension of the
grant will be requested for storing the pre-CMIP8 and subsequent CMIP data
collections.

[10] ISSUES
So far, none known.

[11] REFERENCES
Hagemann, Stefan & Ho-Hagemann, Ha T.M. (2021). The Hydrological Discharge Model
- a river runoff component for offline and coupled model applications (5.1.0).
Korn, P., 2017: Formulation of an unstructured grid model for global ocean dynamics.
Journal of Computational Physics, 339, 525- 552,
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Korn, P., and Coauthors, 2022: ICON-O: The ocean component of the ICON Earth System
model-Global simulation characteristics and local telescoping capability. J. Advances
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Müller, Wolfgang; Lorenz, Stephan, 2024, "Source code and scripts for publication "The
ICON-based coupled Earth System Model for Climate Predictions and Projections (ICON
XPP); https://doi.org/10.17617/3.UUIIZ8, Edmond, V1

Zängl, G., D. Reinert, P. Ripodas, and M. Baldauf, 2015: The ICON (ICOsahedral
Non-hydrostatic) modeling framework of DWD and MPI-M: Description of the
non-hydrostatic dynamical core. Quart. J. Royal Meteorological. Soc., 141, 563-579,
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