

README concerning the dataset ICON available via DKRZ /pool/data resources

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T I T L E O F T H E D A T A S E T

ICON – Icosahedral Nonhydrostatic Weather and Climate Model initial and boundary condition data

P A T H T O T H E D A T A S E T

/pool/data/ICON

O W N E R / P R O D U C E R O F T H E D A T A S E T

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D A T A U S A G E L I C E N S E

The data are open for use by any DKRZ user.

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 ERA, CMIP6 data) come under their own citation, detailed in the files' metadata.

C O N T E N T O F T H E D A T A S E T

ICON data is provided either as pure structural (grid) data, or as climatology or time-series, either globally/zonally uniform or as spatial distribution data, in numerous different horizontal and vertical or spectral-band resolutions. It contains instructions and scripts for generating ICON compatible data from source input.

Boundary data for time-dependent quantities (historical) is available for at least 1850 – 2014. Several subsets (e.g. solar irradiation) comprise additional periods.

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 ICON requirements,

D A T A U S A G E S C E N A R I O S

Access to this data is essential for all users of ICON, especially the grid service. As ICON is used as the standard modelling environment, envisaged for at least for the next decade, MPI-M and many other institutions associated with DKRZ will depend on it. Unless there is an institutional agreement with DWD, model use

requires consent to the ICON license (<https://mpimet.mpg.de/fileadmin/projekte/ICON-ESM/MPI-M-ICONLizenzvertragV2.6.pdf>)

METHODS USED FOR DATA CREATION

Details of the ICON model are described in

Giorgetta, M. A. et al. (2018). ICON-A, the atmosphere component of the ICON Earth system model: I. Model description. *J. Adv. Model. Earth Syst.*, 10, 1613–1637. doi:10.1029/2017MS001242

Korn, P. (2017). Formulation of an unstructured grid model for global ocean dynamics. *Journal of Computational Physics*, 339, 525–552. doi:10.1016/j.jcp.20171246.03.009

ISSUES

No

VOLUME OF THE DATASET (AND POSSIBLE CHANGES THEREOF)

Current data volume: 49 TB, with increases expected in the future.

TIME HORIZON OF THE DATASET ON / POOL / DATA

The resources have been granted until 2026/12/31, however, the data will need to be provided permanently until further notice.