Bias-corrected d4PDF historical and non-warming counterfactual climate simulation data

1. IDENTIFICATION INFORMATION

Name	Bias-corrected d4PDF historical and non-warming counterfactual climate simulation data
DOI	doi:10.20783/DIAS.544 [https://doi.org/10.20783/DIAS.544]
Metadata Identifier	d4PDF_CDFDM_S14FD20250514121255-DIAS20221121113753-en

2. CONTACT

2.1 CONTACT on DATASET

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization
Address	3-1-3 Kannondai, Tsukuba, Ibaraki, 305-8604, Japan
TEL	029-838-8201
E-mail	iizumi.toshichika765@naro.go.jp

2.2 CONTACT on PROJECT

2.2.1 Data Integration and Analysis System

Name	DIAS Office
Organization	Japan Agency for Marine-Earth Science and Technology
Address	3173-25, Showa-Cho, Kanazawa-ku, Yokohama-shi, Kanagawa, 236-0001, Japan
E-mail	dias-office@diasjp.net

3. DOCUMENT AUTHOR

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization
E-mail	iizumi.toshichika765@naro.go.jp

4. DATASET CREATOR

Name	Toshichika Iizumi
Organization	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization
E-mail	iizumi.toshichika765@naro.go.jp

5. DATE OF THIS DOCUMENT

2025-05-14

6. DATE OF DATASET

publication : 2018-07-23

7. DATASET OVERVIEW

7.1 Abstract

The bias-corrected d4PDF dataset offers daily data of 10 climatic variables over the globe from 1951 to 2010. Data from the historical experiment and non-warming counterfactual simulation are available (at this moment, there is no plan to conduct bias-correction of data from the +4 degC experiment). See Shiogama et al. (2016), Mizuta et al. (2017) and Imada et al. (2017) for details on the original d4PDF database. For each simulation, data for 100-member ensemble are available. The data over the sea and Antarctica are not bias-corrected (i.e., the raw data of the MRI-AGCM3.2 (Mizuta et al., 2012) were used), whereas those over the land are bias-corrected using S14FD meteorological forcing dataset (doi:10.20783/DIAS.523) as the baseline. Variables include daily mean 2m air temperature (tave2m, $^\circ$C), daily maximum 2m air temperature (tmax2m, $^\circ$C), daily minimum 2m air temperature (tmin2m, $^\circ$C), daily total precipitation (precsfc, mm d-1), daily mean downward shortwave radiation flux (dswrfsfc, W m-2), daily mean downward longwave radiation flux (dlwrfsfc, W m-2), daily mean 2m relative humidity (rh2m, %), daily mean 2m specific humidity (spfh2m, kg kg-1), daily mean 10m wind speed (wind10m, m s-1) and daily mean surface pressure (pressfc, hPa).

7.2 Topic Category(ISO19139)

climatologyMeteorologyAtmosphere

7.3 Temporal Extent

Begin Date	1951-01-01
End Date	2010-12-31
Temporal Characteristics	Daily

7.4 Geographic Bounding Box

North bound latitude	90
West bound longitude	-180
Eastbound longitude	180

South bound latitude	-90

7.5 Grid

Dimension Name	Dimension Size (slice number of the dimension)	Resolution Unit
column	720	0.5 (deg)
row	360	0.5 (deg)
vertical	1	1 (level)

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	Atmosphere > Atmospheric Temperature > Air Temperature, Atmosphere > Precipitation > Precipitation Amount, Atmosphere > Atmospheric Radiation > Incoming Solar Radiation, Atmosphere > Atmospheric Radiation > Longwave Radiation, Atmosphere > Atmospheric Water Vapor > Humidity, Atmosphere > Atmospheric Pressure > Surface Pressure	GCMD_science

7.7.2 Keywords on Project

7.7.2.1 Data Integration and Analysis System

Keyword Type	Keyword	Keyword thesaurus Name
theme	DIAS &gt; Data Integration and Analysis System	No_Dictionary

7.8 Online Resource

File download : https://data.diasjp.net/dl/storages/filelist/dataset:544

7.9 Data Environmental Information

7.10 Distribution Information

name	version	specification
NetCDF	4	

8. DATA PROCESSING

8.1 Data Processing (1)

8.1.1 General Explanation of the data producer's knowledge about the lineage of a dataset

Daily data for the 1961 2000 period derived from the S14FD forcing dataset were used as the baseline. Information on the errors associated with the AGCM was derived using a single member of the factual simulations (labeled "HPB_m001" in the d4PDF database), and the same error information was applied to the other ensemble members of the factual and counterfactual simulations.

8.1.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used

8.2 Data Processing (2)

8.2.1 General Explanation of the data producer's knowledge about the lineage of a dataset

Dr. Shiogama, the National Institute for Environmental Studies, who is creating the original data, reported that the pre-correction file of the ground pressure data of HPB_m063 was damaged and that recalculation with the atmospheric model was carried out.We corrected the biased correction of recalculated barometric pressure data. HPB_m063/pressfc.zip (2018/09/06)

8.2.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used

9. DATA REMARKS

10. DATA POLICY

10.1 Data Policy by the Data Provider

If data are used, the relevant reference(s) or dataset DOI should be cited. For the reference(s), see the References section.

10.2 Data Policy by the Project

10.2.1 Data Integration and Analysis System

If data provider does not have data policy, DIAS Terms of Service (https://diasjp.net/en/terms/) and DIAS Privacy Policy (https://diasjp.net/en/privacy/) apply.

If there is a conflict between DIAS Terms of Service and data provider's policy, the data provider's policy shall prevail.

11. LICENSE

12. DATA SOURCE ACKNOWLEDGEMENT

12.1 Acknowledge the Data Provider

The original d4PDF database was produced under the SOUSEI programme sponsored by the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT).

12.2 Acknowledge the Project

12.2.1 Data Integration and Analysis System

If you plan to use this dataset for a conference presentation, paper, journal article, or report etc., please include acknowledgments referred to following examples. If the data provider describes examples of acknowledgments, include them as well.

" In this study, [Name of Dataset] provided by [Name of Data Provider] was utilized. This dataset was also collected and provided under the Data Integration and Analysis System (DIAS), which was developed and operated by a project supported by the Ministry of Education, Culture, Sports, Science and Technology. "

13. REFERENCES

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