A Big Earth Data Platform for Three Poles

**1 km multi-scenario and multi-model monthly temperature data for China in 2021-2100**

1、Description

The data set is the monthly average temperature data of China's multi scenario and multi-mode, with a spatial resolution of 0.0083333 ° (about 1km) from January 2021 to December 2100. The data is in NetCDF format. The data is generated in China through the delta spatial downscaling scheme according to the global > 100 km climate model data set released in the sixth phase of the IPCC coupled model comparison program (cmip6) and the global high-resolution climate data set released by worldclim. The data adopts the latest SSP scenarios (ssp119, ssp245, ssp585) released by IPCC. Each scenario contains three GCMS (ec-earth3, gfdl-esm4, mri-esm2-0) climate data. The geospatial range contained in the dataset is China's main land, excluding islands and reefs in the South China Sea. The unit is 0.1 ℃. The file name is GCM\_ SSP\_ Tmp-30s-serial number NC, 30s, i.e. 0.0083333 °, serial number from 1-40, serial number 1 represents 2021.1-2022.12, and represents the year in turn; Based on ec-earth3\_ ssp119\_ tmp-30s-1. NC file, for example, represents the monthly average temperature data of ec-earth3 climate model with 1km resolution from 2021.1 to 2022.12 under ssp119 scenario, including 24 layers. For a deeper understanding of the data, please refer to the data cited in the literature and the published papers of the authors.

2、Keywords

Theme：Temperature,Downscaling
Discipline：Atmosphere
Places：China
Time：Future period

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：110592.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：58.64 | - |
| west：71.29 | - | east：136.69 |
| - | south：15.75 | - |

5、Time frame:2020-12-31 16:00:00+00:00--2100-12-31 03:59:59+00:00

6、Reference method

References to data:

PENG Shouzhang. 1 km multi-scenario and multi-model monthly temperature data for China in 2021-2100. A Big Earth Data Platform for Three Poles, doi:10.11866/db.loess.2021.0032022

References to articles:

Peng, S.Z., Ding, Y.X., Wen, Z.M., Chen, Y.M., Cao, Y., & Ren, J.Y. (2017). Spatiotemporal change and trend analysis of potential evapotranspiration over the Loess Plateau of China during 2011-2100. Agricultural and Forest Meteorology, 233, 183-194. https://doi.org/10.1016/j.agrformet.2016.11.129

Ding, Y.X., Peng, S.Z. (2020). Spatiotemporal Trends and Attribution of Drought across China from 1901–2100. Sustainability, 12, 2, 477. https://doi.org/10.3390/su12020477

Ding, Y.X., Peng, S.Z. (2021). Spatiotemporal change and attribution of potential evapotranspiration over China from 1901 to 2100. Theoretical and Applied Climatology. https://doi.org/10.1007/s00704-021-03625-w

Peng, S.Z., Ding, Y.X., Liu, W.Z., & Li, Z. (2019). 1 km monthly temperature and precipitation dataset for China from 1901 to 2017. Earth System Science Data, 11, 1931–1946. https://doi.org/10.5194/essd-11-1931-2019

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program
National Natural Science Foundation of China (42077451)

8、Data resource provider

name: PENG Shouzhang
unit:
email: szp@nwafu.edu.cn