A Big Earth Data Platform for Three Poles

**1-km daily average air temperature of the Tibetan Plateau (1980-2014)**

1、Description

1) Data content (including elements and meanings): Gridded daily average air temperature of the Tibetan Plateau during 1980-2014 at 1-km resolution

2) Data source and processing method: Developed by integrating 8 types of reanalysis data (i.e., NNRP-2, 20CRV2c, JRA-55, ERA-Interim, MERRA2, CFSR, GLDAS and ERA5) downscaled with MODIS-estimated temperature lapse rates based on machine learing

3) Data quality description: According to leave-one-out validation based on stations, the average RMSE at China Adimistration Stations is about 1.7 ℃ and that at high-elevation field stations is about 1.9 ℃

2、Keywords

Theme：Temperature,Air temperature
Discipline：Atmosphere
Places：
Time：

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：240000.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.12 | - |
| west：105.38 | - | east：67.88 |
| - | south：25.12 | - |

5、Time frame:1980-01-06 16:00:00+00:00--2015-01-06 03:59:59+00:00

6、Reference method

References to data:

1-km daily average air temperature of the Tibetan Plateau (1980-2014). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2703772020

References to articles:

Zhang, H., Zhang, F., Zhang, G., Che, T., & Yan, W. (2018). How accurately can the air temperature lapse rate over the Tibetan Plateau be estimated from MODIS LSTs?. Journal of Geophysical Research: Atmospheres, 123(8), 3943-3960.

Zhang, H.B, Immerzeel, W.W., Zhang\*, F., De Kok, R.J., Gorrie, S.J., & Ye, M. (2021). Creating 1-km long-term (1980–2014) daily average air temperatures over the Tibetan Plateau by integrating eight types of reanalysis and land data assimilation products downscaled with MODIS-estimated temperature lapse rates based on machine learning. International Journal of Applied Earth Observations and Geoinformation (accepted).

7、Supporting project information

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8、Data resource provider

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