A Big Earth Data Platform for Three Poles

**China meteorological forcing dataset (1979-2015)**

1、Description

The Chinese regional surface meteorological element data set is a set of near-surface meteorological and environmental element reanalysis data set developed by the Qinghai-Tibet Plateau Research Institute of the Chinese Academy of Sciences. The data set is based on the existing Princeton reanalysis data, GLDAS data, GEWEX-SRB radiation data and TRMM precipitation data in the world, and is made by combining the conventional meteorological observation data of China Meteorological Administration. The temporal resolution is 3 hours and the horizontal spatial resolution is 0.1, including 7 factors (variables) including near-surface air temperature, near-surface air pressure, near-surface air specific humidity, near-surface full wind speed, ground downward short wave radiation, ground downward long wave radiation and ground precipitation rate.

The physical meaning of each variable:
| Meteorological Element || Variable Name || Unit || Physical Meaning
| near-surface temperature ||temp|| K || instantaneous near-surface (2m) temperature
| surface pressure || pres|| Pa || instantaneous surface pressure
| specific humidity of near-surface air || shum || kg/ kg || instantaneous specific humidity of near-surface air
| near ground full wind speed || wind || m /s || instantaneous near ground (anemometer height) full wind speed
| downward short wave radiation || srad || W/m2 || 3-hour average (-1.5 HR ~+1.5 HR) downward short wave radiation
| Downward Long Wave Radiation ||lrad ||W/m2 ||3-hour Average (-1.5 hr ~+1.5 hr) Downward Long Wave Radiation
| precipitation rate ||prec||mm/hr ||3-hour average (-3.0 HR ~ 0.0 HR) precipitation rate
For more information, please refer to the "User's Guide for China Meteorological Al Forcing Dataset" published with the data.

The main changes in the latest version (01.06.0014) are:
1. Extend the data to December 2015 (except for short-wave and long-wave data, only until October 2015; the data from November to December 2015 are interpolated based on GLDAS data, and the error may be too large);
2. Set the minimum wind speed at 0.05 m/s;
3. Fixed a bug in the previous radiation algorithm to make our short wave and long wave data more reasonable in the morning and evening periods.
4. bug of precipitation data has been corrected, and the period involved in the change is 2011-2015.

2、Keywords

Theme：Radiation,Winds,Humidity/Dryness,Pressure,wind speed
Discipline：Atmosphere
Places：China
Time：1979-2015

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：84037.0MB

4.Data format：NetCDF

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：53.6 | - |
| west：73.4 | - | east：135.0 |
| - | south：18.2 | - |

5、Time frame:1979-02-26 16:00:00+00:00--2016-02-25 16:00:00+00:00

6、Reference method

References to data:

HE Jie, YANG Kun. China meteorological forcing dataset (1979-2015). A Big Earth Data Platform for Three Poles, doi:10.3972/westdc.002.2014.db2016

References to articles:

Chen, Y.Y., Yang, K., He, J., Qin, J., Shi, J.C., Du, J.Y., &He, Q. (2011). Improving land surface temperature modeling for dry land of China. Journal of Geophysical Research, 116(15), D20104.

7、Supporting project information

8、Data resource provider

name: YANG Kun
unit: Institute of Tibetan Plateau Research, Chinese Academy of Sciences
email: yangk@itpcas.ac.cn

name: HE Jie
unit: Institute of Tibetan Plateau Research, Chinese Academy of Sciences
email: hejie.1207@gmail.com