A Big Earth Data Platform for Three Poles

**Frequency distribution improved and wind-induced undercatch corrected gridded precipitation in Tibetan Plateau(1980-2009)**

1、Description

The Frequency distribution improved and wind-induced undercatch corrected gridded precipitation in Tibetan Plateau(1980-2009) is a dataset suitable for the Tibetan Plateau . It considers the measurement undercatch caused by wind and optimizes the precipitation frequency distribution by adopting an advanced interpolation method. The data is in NETCDF format, with a temporal resolution of 1 day and a horizontal spatial resolution of 10km. The data can be used as a reference data source for numerical model precipitation frequency correction.
 This dataset uses daily observations from the China Meteorological Administration and GSOD at 164 stations as the data sources. The construction of the dataset is divided into four steps :(1) firstly, quality control is carried out on the gauge data, including the removal of abnormal values and bad values.(2) Doing wind-induced undercatch correction for every precipitation record.(3) A thin-plate splines interpolation algorithm considering altitude as a covariate is used to interpolate the monthly total precipitation, and the ratio of daily and monthly precipitation was interpolated by the Ordinary Kriging method. The dataset with a spatial resolution of 1km was obtained by multiplying the monthly total precipitation and day to month ratio. (4) Aggregating the 1km dataset to 10km spatial resolution to obtain the final data.
 Compared with the similar international gridded precipitation dataset, this data highlights for it’s wind-induced undercatch correction of gauge precipitation and the optimized interpolation method to make itself have more accurate frequency distribution. The data is suitable for correction of statistical deviation of precipitation output by numerical model or analysis of precipitation frequency characteristics at grid-box.
y. It is more suitable for correcting the statistical deviation of precipitation output by numerical model or analyzing the precipitation frequency characteristics on gridded points.

2、Keywords

Theme：Precipitation,Wind-induced undercatch correction,Gridded precipitation,precipitation frequency distribution
Discipline：Atmosphere
Places：Tibetan Pleteau
Time：1980-2009

3、Data details

1.Scale：None

2.Projection：Lambert\_Conformal\_Conic

3.Filesize：1892.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：41.0 | - |
| west：70.0 | - | east：99.0 |
| - | south：25.0 | - |

5、Time frame:1980-01-19 16:00:00+00:00--2010-01-19 03:59:59+00:00

6、Reference method

References to data:

LI Hongyi, MA Jiapei. Frequency distribution improved and wind-induced undercatch corrected gridded precipitation in Tibetan Plateau(1980-2009). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2709932020

References to articles:

Ma, J., Li, H., Wang, J. et al. (2020). Reducing the Statistical Distribution Error in Gridded Precipitation Data for the Tibetan Plateau[J]. Journal of Hydrometeorology, 1-1. doi:10.1175/JHM-D-20-0096.1

7、Supporting project information

Chinese Academy of Sciences through the Strategic Priority Research Program
National Natural Science Foundation of China
Science & Technology Basic Resources Investigation Program of China “Investigation on snow characteristics and their distribution in China”

8、Data resource provider

name: MA Jiapei
unit:
email: jiapeima@lzb.ac.cn

name: LI Hongyi
unit:
email: lihongyi@lzb.ac.cn