A Big Earth Data Platform for Three Poles

**Atmospheric heat source/sink dataset over the Tibetan Plateau based on satellite and routine meteorological observations (1984-2015)**

1、Description

The Tibetan Plateau (TP), acting as a large elevated land surface and atmospheric heat source during spring and summer, has a substantial impact on regional and global weather and climate. To explore the multi-scale temporal variation in the thermal forcing effect of the TP，The data set of atmospheric heat source/sink in Tibetan Plateau was prepared as a quantitative analysis tool for calculating heat budget of gas column.
the atmospheric heat source/sink dataset consists of three variables: surface sensible heat flux SH, latent heat release LH and net radiation flux RC.
here we calculated the surface sensible heat and latent heat release based on 6-h routine observations at 80 (32) meteorological stations during the period 1979–2016：air temperature at 1.5 m and surface temperature and wind speed at 10 m are used to calculate surface sensible heat flux,the latent heat release is estimated precipitation data.The satellite datasets used to calculate the net radiation flux were the Global Energy
and Water Cycle Experiment surface radiation budget satellite radiation(GEWEX/SRB) and Clouds and Earth’s Radiant Energy Systems/Energy Balanced And Filled (CERES/EBAF). The monthly shortwave and longwave radiation fluxes at the surface and at the top of the atmosphere (TOA) in GEWEX/SRB and CERES/EBAF were utilized to obtain the net radiation flux for the period 1984–2015 via statistical methods。

2、Keywords

Theme：Heat flux,Radiative flux,Radiation,Net radiation,Atmospheric heating
Discipline：Atmosphere
Places：Tibetan Plateau
Time：1984-2015

3、Data details

1.Scale：None

2.Projection：

3.Filesize：10.8MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.7 | - |
| west：61.0 | - | east：106.5 |
| - | south：23.0 | - |

5、Time frame:1984-01-10 08:00:00+00:00--2016-01-09 08:00:00+00:00

6、Reference method

References to data:

DUAN Anmin. Atmospheric heat source/sink dataset over the Tibetan Plateau based on satellite and routine meteorological observations (1984-2015). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2700902019

References to articles:

Duan, A.M., Liu, S.F., Zhao, Y., Gao, K.L., &Hu, W.T. (2018). Atmospheric heat source/sink dataset over the Tibetan Plateau based on satellite and routine meteorological observations. Big Earth Data, 2(2), 179-189.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

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