A Big Earth Data Platform for Three Poles

**Thunderstorm cloud characteristic data set in China and surrounding areas (2010-2018)**

1、Description

This data set is based on the lightning location data calculation of TBB products, cloud classification (CLC) products and world wide lightning location network (wwlln) in the full disk area detected by fy-2e satellite (fy-2e) from 2010 to 2018 to establish the lightning storm cloud feature data set. The algorithm used for wwlln lightning clustering is DBSCAN algorithm. According to Hutchins et al. (2014), it is required that the number of lightning in each lightning cluster in the thunderstorm cloud is greater than 2 and all fall within the radius of 12 km. The data set includes thunderstorm cloud time and location information, thunderstorm cloud shape (long, short axis, rotation angle, etc.) information represented by fitting ellipse, cloud area representing thunderstorm cloud structure, statistical value of black body temperature (TBB), included flash information, and included strong convection core, lightning cluster information and other data information.

2、Keywords

Theme：Clouds,strong convection,Atmospheric Electricity,Cloud properties,Meteorological Disaster,Thunderstorm
Discipline：Atmosphere
Places：China and surrounding areas
Time：2010-2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：550912.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：90.0 | - |
| west：14.5 | - | east：180.0 |
| - | south：-90.0 | - |

5、Time frame:2010-01-11 16:00:00+00:00--2018-12-30 16:00:00+00:00

6、Reference method

References to data:

MA Ruiyang , ZHENG Dong . Thunderstorm cloud characteristic data set in China and surrounding areas (2010-2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2726222022

References to articles:

马瑞阳, 郑栋, 姚雯, 等. (2021). 雷暴云特征数据集及我国雷暴活动特征. 应用气象学报, 32(3), 358-369.

Du, Y., Zheng, D., & Ma, R., et al. (2022). Thunderstorm activity over the Qinghai–Tibet Plateau indicated by the combined data of the FY-2E geostationary satellite and WWLLN. Submitted to Remote Sensing.（提交该数据集时已接收）

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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