A Big Earth Data Platform for Three Poles

**WATER: Dataset of airborne microwave radiometers (L&K bands) mission in the Linze flight zone on Jul. 8, 2008**

1、Description

This data set was acquired by L & K band airborne microwave radiometer on July 8, 2008 in Linze flight area.
The frequency of L-band is 1.4GHz, and the backsight is 35 degrees to obtain dual polarization (H and V) information; the frequency of K-band is 18.7ghz, and there is no polarization information. The plane took off from Zhangye airport at 10:00 (Beijing time, the same below) and landed at 13:38. 10: At 23-13:10, the flight altitude was about 1900m and the flight speed was about 230-250km / hr. Among them, 12:21-12:27 low flying Linze reservoir line 1-6 has a relative altitude of 100m and a flight speed of 190km / hr. 12: 56-13:08 low flying desert marking twice (line 1-7, first North to south, then south to North).
The original data is divided into two parts: microwave radiometer data and GPS data. The L and K bands of microwave radiometer are non imaging observations. The digital values obtained from the instantaneous observation are recorded in the text file, and the longitude and latitude as well as the aircraft attitude parameters are recorded in the GPS data. When using microwave radiometer to observe data, it is necessary to convert the digital value recorded into the bright temperature value according to the calibration coefficient (the calibration coefficient file is filed with the original observation data). At the same time, through the clock records of microwave radiometer and GPS, we can connect the microwave observation with GPS record and match the geographic coordinate information for the microwave observation. Due to the coarse observation resolution of microwave radiometer, the effects of aircraft yaw, roll and pitch are generally ignored in data processing. According to the target and flight relative altitude (H), after calibration and coordinate matching, the observation information can also be gridded. The resolution (x) of L band and K band is consistent with that of observation footprint. The reference resolution is: L band, x = 0.3H; K band, x = 0.24h. After the above steps, we can get the products that users can use directly.

2、Keywords

Theme：Remote Sensing Technology,Microwave radiometer
Discipline：Remote Sensing Technology
Places：Heihe River Basin, Arid Region Hydrology in the Middle Reaches, Closed observation area of Linze station
Time：2008-07-08

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：5.08MB

4.Data format：

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：39.4 | - |
| west：100.05 | - | east：100.5 |
| - | south：39.0 | - |

5、Time frame:2008-07-20 02:00:00+00:00--2008-07-20 05:40:00+00:00

6、Reference method

References to data:

CHE Tao, JIN Jinan, Liu Qiang. WATER: Dataset of airborne microwave radiometers (L&K bands) mission in the Linze flight zone on Jul. 8, 2008. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0239.db2013

References to articles:

7、Supporting project information

The CAS (Chinese Academy of Sciences) Action Plan for West Development Project
National Program on Key Basic Research Project (973 Program

8、Data resource provider

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