A Big Earth Data Platform for Three Poles

**WATER: Dataset of airborne microwave radiometers (L&K bands) mission in the A'rou flight zone in the morning of Apr. 1, 2008**

1、Description

This data set was acquired by the L & K band airborne microwave radiometer on the morning of April 1, 2008, in the A'rou flight zone.   
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 8:06 (Beijing time, the same below) and landed at 11:17. 8: 50-10:13 fly from north to south, observe and reserve 10 routes, flight height is about 4100m, flight speed is about 260km / hr. 10: At 20-10:35, Jiafei 6-8 and 6-9 lines completed the observation.   
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, the cold region hydrology experimental area in the upper reaches, A'rou flight zone  
Time：2008-04-01

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：7.08MB

4.Data format：

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.15 | - |
| west：100.25 | - | east：100.65 |
| - | south：38.0 | - |

5、Time frame:2008-04-11 00:00:00+00:00--2008-04-11 04:00:00+00:00

6、Reference method

References to data:

CHE Tao. WATER: Dataset of airborne microwave radiometers (L&K bands) mission in the A'rou flight zone in the morning of Apr. 1, 2008. A Big Earth Data Platform for Three Poles, doi:10.3972/water973.0235.db2010

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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