A Big Earth Data Platform for Three Poles

**Global land surface microwave emissivity dataset from AMSR-E (2002-2011)**

1、Description

Microwave emissivity of the surface characterization of the object to launch the ability of microwave radiation, spaceborne passive microwave emissivity can on macro, large scale integral expression of epicontinental microwave radiation is a passive microwave surface parameters in quantitative inversion experience for one of the important basic data, is also on the large scale understand epicontinental microwave radiation in a way.This data set is considered to carry on the Aqua satellite advanced microwave scanning radiometer (amsr-e) and moderate resolution imaging spectroradiometer (MODIS) synchronous observation characteristics, using the MODIS land surface temperature and atmospheric water vapor data as input, by considering the effects of atmospheric emissivity estimation model, produced a global sky conditions during the running of amsr-e sensor (June 2002 ~ October 2011) of the epicontinental multichannel bipolar microwave instantaneous emission rate.Through product low-frequency radio signal, data alignment, statistic analysis, the different emissivity characteristics of surface coverage condition, frequency dependence and correlation studies conducted confirmatory analysis, the results show that the instantaneous dynamic details of emissivity is rich, standard deviation within 0.02 month daily variation, the change of time and space, frequency dependent on and related to the understanding of the natural physical process.
This data set includes amsr-e global land surface daily, daily, daily, monthly and monthly products in the whole life cycle, which can be used to carry out satellite based passive microwave remote sensing simulation, land surface model, and inversion research of land surface temperature, snow cover, atmospheric precipitation/moisture/precipitation.The projection coordinates of the data adopt the standard EASE-GRID projection, and the data storage method is binary floating point lattice (the size of the matrix is 1383\*586). After the data is obtained, ENVI/IDL and other software or the corresponding program code can be read in the form of binary files.
All land surface emissivity data produced are named according to the following rules:
RADI\_AMSRE\_EM # # # # \_yyymmdd\_EG\_V. Bin
For example, file name: RADI\_AMSRE\_EM01\_20060101\_EG\_V#
EM##: 01 means daily, 05 means 5 days, 10 means ten days, HM means half a month, MO means a month
Yyyymmdd: yyyy means year, mm means month, and dd means date
V##: version number, such as 0.1, 1.0, etc., the units digit is the official version
RADI: institute of remote sensing and digital earth, Chinese academy of sciences
AMSRE: advanced microwave scanning radiometer

2、Keywords

Theme：Microwave remote sensing,Passive microwave remote sensing,Surface Freeze-thaw Cycle/state Remote Sensing
Discipline：Cryosphere
Places：globe
Time：2002-2011

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：220364.0MB

4.Data format：二进制文件

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：90.0 | - |
| west：-180.0 | - | east：180.0 |
| - | south：-60.0 | - |

5、Time frame:2002-07-07 00:00:00+00:00--2011-11-06 00:00:00+00:00

6、Reference method

References to data:

QIU Yubao. Global land surface microwave emissivity dataset from AMSR-E (2002-2011). A Big Earth Data Platform for Three Poles, doi:10.3972/westdc.003.2016.db2016

References to articles:

Qiu Yubao, Guo Huadong, Shi Lijuan, etal. Global Land Surface Emissivity Dataset based on AMSR-E Observations[J]. Remote Sensing Technology and Application, 2016, 31(4):811-821. [邱玉宝, 郭华东, 石利娟, & 施建成. 基于amsr-e的全球陆表被动微波发射率数据集. 遥感技术与应用, 031(4), 809-819..] doi: 10.11873/j. issn.1004-0323.2016.4.0811

7、Supporting project information

Construction of Snow Remote Sensing Dataset for Climate in the Qinghai-Tibet Plateau

8、Data resource provider

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