A Big Earth Data Platform for Three Poles

**Global land surface model optimal parameters (2009-2011)**

1、Description

This data provides 38 key parameters in the land surface model CLM4.0, involving hydrology, soil and vegetation. The detailed information about key parameters can be found in the attached documents. This data has about 1 degree resolution (f09 grid) globally, and also provides high resolution product (0.1 degree) in the Heihe region. Three objectives: evapotranspiration (ET), volumetric soil moisture (VSM) and freeze/thaw (FT) have been used to calibrate the 38 parameters. Each objective was used individually to calibrate parameters for each grid. The ET, VSM and FT datasets were provided by other groups in the save project. According to our assessment, the error of ET can be reduced 23%, VSM 52% and FT 34%. But since this is single objective optimization, the three improvements cannot be obtained simultaneously. The distribution of optimal parameters can be used for improving the structure of land surface model. The optimal parameters can be used directly by just replacing the corresponding number in the CLM source code.

2、Keywords

Theme：Surface Water,Hydrology
Discipline：Terrestrial Surface
Places：Heihe River Basin, globe
Time：

3、Data details

1.Scale：None

2.Projection：

3.Filesize：52.4MB

4.Data format：None

4、Space scope

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

5、Time frame:2009-01-10 00:00:00+00:00--2012-01-09 00:00:00+00:00

6、Reference method

References to data:

GONG Wei. Global land surface model optimal parameters (2009-2011). A Big Earth Data Platform for Three Poles, doi:10.11888/Hydro.tpdc.2702992019

References to articles:

7、Supporting project information

Satellite observation and simulation studies of the land surface water and energy exchange processes and its effects on global changes

8、Data resource provider

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