A Big Earth Data Platform for Three Poles

**Global Land Surface Actual Evapotranspiration (2013-2014)**

1、Description

Terrestrial actual evapotranspiration (ET), including evaporation from soil and water surfaces, evaporation of rainfall interception, transpiration of vegetation canopy and sublimation of snow and glaciers, is an important component of the terrestrial water cycle and links the hydrological, energy, and carbon cycles. The dataset of ETMonitor-GlobalET-2013-2014 is obtained based on ETMonitor model, which combines parameterizations for different processes and land cover types, with multi-source satellite data as input. Several remote sensing based variables, e.g. net radiation flux and dynamic water body area, and meteorological variables from ERA5 reanalysis dataset, were used as input to estimate daily ET. The ET estimation is conducted at daily temporal step and 1km spatial resolution, and the generated global ET dataset is at 5km resolution and daily time step for publication. The data type is 16-bit signed integer, the scale factor is 0.1, and the unit is mm/day.

2、Keywords

Theme：Land surface flux,Evapotranspiration,Radiation,Latent heat release,Remote sensing evapotranspiration,Hydrology,Terrestrial Surface Remote Sensing,Hydrological remote sensing products
Discipline：Atmosphere,Terrestrial Surface
Places：Global scale
Time：

3、Data details

1.Scale：None

2.Projection：

3.Filesize：8000.0MB

4.Data format：None

4、Space scope

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

5、Time frame:2013-01-27 08:00:00+00:00--2015-01-26 08:00:00+00:00

6、Reference method

References to data:

JIA Li . Global Land Surface Actual Evapotranspiration (2013-2014). A Big Earth Data Platform for Three Poles, doi:10.11888/Hydro.tpdc.2702982019

References to articles:

Jia, L., Zheng, C., Hu, G.C., and Menenti, M. (2018). Evapotranspiration, In Comprehensive Remote Sensing, edited by Shunlin Liang, Elsevier, Oxford, Pages 25-50. https://doi.org/10.1016/B978-0-12-409548-9.10353-7.

Hu, G., Jia, L. (2015). Monitoring of evapotranspiration in a semi-arid inland river basin by combining microwave and optical remote sensing observations. Remote Sensing, 7(3), 3056-3087.

Chen, Q., Jia, L., Menenti, M., Hutjes, R., Hu, G., Zheng, C., Wang, K. (2019). A Numerical Analysis of Aggregation Error in Evapotranspiration Estimates Due to Heterogeneity of Soil Moisture and Leaf Area Index. Agriculture and Forest Meteorology, 269-270, 335-350. doi: https://doi.org/10.1016/j.agrformet.2019.02.017.

Zheng, C., Jia, L., Hu, G., Lu, J., Wang, K., Li, Z. (2016). Global Evapotranspiration derived by ETMonitor model based on Earth Observations. 2016 IEEE International Geoscience and Remote Sensing Symposium: 222-225. DOI: 10.1109/IGARSS.2016.7729049.

7、Supporting project information

Satellite observation and simulation studies of the land surface water and energy exchange processes and its effects on global changes
Understanding of Land Surface Energy and Water Exchange Processes and its Scaling Mechanism by Combining High Resolution Satellite Observations and Simulation Studies

8、Data resource provider

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