Upper Yangtze River Scientific Data Center

**PLSH global evapotranspiration production (1983-2013)**

1、Description

We applied a satellite remote sensing–based evapotranspiration (ET) algorithm to assess global terrestrial ET from 1983 to 2006. The algorithm quantifies canopy transpiration and soil evaporation using a modified Penman‐Monteith approach with biome‐specific canopy conductance determined from the normalized difference vegetation index (NDVI) and quantifies open water evaporation using a Priestley‐Taylor approach. These algorithms were applied globally using advanced very high resolution radiometer (AVHRR) GIMMS NDVI, NCEP/NCAR Reanalysis (NNR) daily surface meteorology, and NASA/GEWEX Surface Radiation Budget Release−3.0 solar radiation inputs. We used observations from 34 FLUXNET tower sites to parameterize an NDVI‐based canopy conductance model and then validated the global ET algorithm using measurements from 48 additional, independent flux towers. Two sets of monthly ET estimates at the tower level, driven by in situ meteorological measurements and meteorology interpolated from coarse resolution NNR meteorology reanalysis, agree favorably (root mean square error (RMSE) = 13.0–15.3 mm month-1 ; R²= 0.80–0.84) with observed tower fluxes from globally representative land cover types. The global ET results capture observed spatial and temporal variations at the global scale and also compare favorably (RMSE = 186.3 mm yr−1; R2= 0.80) with ET inferred from basin‐scale water balance calculations for 261 basins covering 61%of the global vegetated area. The results of this study provide a relatively long term global ET record with well‐quantified accuracy for assessing ET climatologies, terrestrial water, and energy budgets and long‐term water cycle changes.

2、Keywords

Theme：Land-surface evapotranspiration,Land Surface Parameter,Latent heat flux,Evapotranspiration,Terrestrial Surface Remote Sensing
Discipline：Terrestrial Surface
Places：World
Time：1983-2013

3、Data details

1.Scale：None

2.Projection：

3.Filesize：15872.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：89.2234 | - |
| west：180.0 | - | east：180.0 |
| - | south：62.8494 | - |

5、Time frame:1982-12-31 16:00:00+00:00--2013-12-30 16:00:00+00:00

6、Reference method

References to data:

ZHANG Ke , KIMBALL John . PLSH global evapotranspiration production (1983-2013). Upper Yangtze River Scientific Data Center, doi:doi:10.1029/2009WR0088002022

References to articles:

7、Supporting project information

8、Data resource provider

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