A Big Earth Data Platform for Three Poles

**Surface PAR, SSR and NR products over the Heihe River basin (2012)**

1、Description

We produced surface photosynthetic effective radiation (PAR), solar radiation (SSR) and net radiation (NR) products with 1KM resolution in the heihe basin in 2012.The temporal resolution ranges from instantaneous to hourly and daily.Day-by-day ancillary data were also produced, including aerosol optical thickness, moisture content, NDVI, snow cover, and surface albedo.Among them, PAR and SSR use the method of lookup table to directly invert by combining the stationary weather satellite and polar orbit satellite MODIS product.NR was calculated by analyzing the relationship between net short-wave and net surface radiation.Hourly instantaneous products are weighted by average and integral to obtain hourly and daily cumulative products.

2、Keywords

Theme：Land surface flux,Photosynthetically active radiation,Radiation,Vegetation,Net radiation,Solar radiation  
Discipline：Atmosphere,Terrestrial Surface  
Places：Heihe River Basin, Middle Reaches of Heihe River Basin  
Time：2012

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：61.8MB

4.Data format：栅格

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：43.0 | - |
| west：97.0 | - | east：102.0 |
| - | south：37.0 | - |

5、Time frame:2012-07-16 10:49:44+00:00--2013-07-16 10:49:44+00:00

6、Reference method

References to data:

Surface PAR, SSR and NR products over the Heihe River basin (2012). A Big Earth Data Platform for Three Poles, doi:10.3972/heihe.115.2014.db2017

References to articles:

Huang, G. H., Li, X., Ma,M. G., Li, H. Y., & Huang, C. L.(2016). High resolution surface radiation products for studies of regional regionalenergy, hydrologic and ecological processes over Heihe river basin,northwest China. Agricultural and Forest Meteorology,230-231,67-78.doi:10.1016/j.agrformet.2016.04.007  
  
Huang, G. H., Li, X., Huang, C. L., Liu, S. M., Ma, Y. F., & Chen, H. (2016). Representativeness errors of point-scale ground-based solar radiation measurements in the validation of remote sensing products. Remote Sensing of Environment, 181, 198-206. doi: 10.1016/j.rse.2016.04.001  
  
Huang, G. H., Ma, M. G., Liang, S. L., Liu, S. M., & Li, X. (2011). A LUT-based approach to estimate surface solar irradiance by combining MODIS and MTSAT data. Journal of Geophysical Research-Atmospheres, 116. doi: 10.1029/2011jd016120

7、Supporting project information

8、Data resource provider