A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of ASTER fractional vegetation cover in the crop land experimental area in the middle of Heihe River Basin form May to Sep, 2012**

1、Description

This data is the ASTER fractional vegetation cover in a growth cycle observed in the Yingke Oasis Crop land. Data observations began on May 30, 2012 and ended on September 12.  
Original data:  
1.15m resolution L1B reflectivity product of ASTER  
2.Vegetation coverage data set of the artificial oasis experimental area in the middle reaches  
Data processing:  
1.Preprocessing of ASTER reflectance products to obtain ASTER NDVI;  
2.Through the NDVI-FVC nonlinear transformation form, the ASTER NDVI and the ground measured FVC are used to obtain the conversion coefficients of NDVI to FVC at different ASTER scales.  
3.Apply this coefficient to the ASTER image to obtain a vegetation coverage of 15m resolution;  
4.Aggregate 15m resolution ASTER FVC to get 1km ASTER FVC product

2、Keywords

Theme：Vegetation,Vegetation cover,Satelite images,Terrestrial Surface Remote Sensing  
Discipline：Terrestrial Surface  
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, crop land  
Time：2012-08-18, 2012-08-11, 2012-09-03, 2012-07-10, 2012-09-12, 2012, 2012-05-30, 2012-06-24, 2012-08-02, 2012-08-27, 2012-06-15

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：61.5MB

4.Data format：文本, \*.xls

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.896 | - |
| west：100.328 | - | east：100.399 |
| - | south：38.843 | - |

5、Time frame:2012-06-12 00:00:00+00:00--2012-09-25 07:00:00+00:00

6、Reference method

References to data:

MA Mingguo. HiWATER: Dataset of ASTER fractional vegetation cover in the crop land experimental area in the middle of Heihe River Basin form May to Sep, 2012. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.283.2015.db2016

References to articles:

Ma Mingguo, Che Tao, Li Xin, Xiao Qing, Zhao Kai and Xin Xiaoping. A Prototype Network for Remote Sensing Validation in China. Remote Sensing, 2015, 7: 5187-5202.  
  
Xihan Mu; Shuai Huang; Huazhong Ren; Guangjian Yan; Wanjuan Song; Gaiyan Ruan, 2015, Validating GEOV1 Fractional Vegetation Cover derived from coarse-resolution remote sensing images over croplands. IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens., 8: 439–446.  
  
Song, W.J., Mu, X.H., Yan, G.J., & Huang, S. (2015). Extracting the Green Fractional Vegetation Cover from Digital Images Using a Shadow-Resistant Algorithm (SHAR-LABFVC), Remote Sensing, 7. 10425-10443. DOI:10.3390/rs70810425.  
  
Li, X., Liu, S.M., Xiao, Q., Ma, M.G., Jin, R., Che, T., Wang, W.Z., Hu, X.L., Xu, Z.W., Wen, J.G., Wang, L.X. (2017). A multiscale dataset for understanding complex eco-hydrological processes in a heterogeneous oasis system. Scientific Data, 4, 170083. doi:10.1038/sdata.2017.83.

7、Supporting project information

Heihe Watershed Allied Telemetry Experimental Research (HiWATER)

8、Data resource provider

name: MA Mingguo  
unit: Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences  
email: mmg@lzb.ac.cn