A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of vegetation phenology in the Heihe River Basin**

1、Description

The vegetation phenology data set of Heihe River basin provides remote sensing phenology products from 2012 to 2015. The spatial resolution is 1km and the projection type is sinusoidal. MODIS Lai product mod15a2 is used as the phenological remote sensing monitoring data source, and MODIS land cover classification product mcd12q1 is used as the auxiliary data set for extraction. The product algorithm first uses the time series data reconstruction method (bise method) to control the data quality of the input time series; then uses the main algorithm (logistic function fitting method) and the backup algorithm (piecewise linear fitting method) to extract the vegetation phenological parameters, realizes the complementary calculation method, guarantees the accuracy and improves the inversion rate. The algorithm can extract up to three growth cycles in a year, each growth cycle contains six data sets, including the start point of vegetation growth, the start point of growth peak, the end point of growth peak, the end point of growth, the fastest growth and the fastest decline. At the same time, it records the growth cycle type, growth season length, quality identification, etc., a total of 25 data sets. The phenology product reduces the missing rate of inversion, improves the stability of the product, and the data set is relatively reliable with rich information.

2、Keywords

Theme：Vegetation coverage data,Ecological remote sensing products,Terrestrial Surface Remote Sensing  
Discipline：Terrestrial Surface  
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, the cold region hydrology experimental area in the upper reaches, the natural oasis eco-hydrology experimental area in the lower reaches  
Time：2014, 2015, 2012, 2013

3、Data details

1.Scale：30

2.Projection：UTM Zone47N WSG-84

3.Filesize：68.7MB

4.Data format：ENVI标准格式

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.1 | - |
| west：97.8 | - | east：101.8 |
| - | south：37.3 | - |

5、Time frame:2012-01-15 16:22:00+00:00--2016-01-14 23:00:00+00:00

6、Reference method

References to data:

LI Jing. HiWATER: Dataset of vegetation phenology in the Heihe River Basin. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.284.2016.db2016

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Xia C, Li J, Liu Q. Monitoring vegetation phenology in China using time-series MODIS LAI data. IEEE Geoscience and Remote Sensing Symposium, 2012: 48-51.  
  
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

The CAS (Chinese Academy of Sciences) Action Plan for West Development Project  
National High-tech R&D Program of China (863 Program)  
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8、Data resource provider

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