A Big Earth Data Platform for Three Poles

**HiWATER: 30m month compositing vegetation index (NDVI/EVI) product of Heihe River Basin (2011-2014)**

1、Description

The 30 m / month vegetation index (NDVI / EVI) data set of Heihe River basin provides the monthly NDVI / EVI composite products from 2011 to 2014. This data uses the characteristics of HJ / CCD data of China's domestic satellite, which has both high time resolution (2 days after Networking) and spatial resolution (30 m), to construct multi angle observation data set. The average composite MC method is used as the main algorithm for synthesis, and the backup algorithm uses VI method. At the same time, the main observation angles of the multi-source data set are used as part of the quality descriptor to help analyze the angle effect of the composite vegetation index residue. The remote sensing data acquired every month can provide more angles and more observations than the single day sensor data, but the quality of multi-phase and multi angle observation data is uneven due to the difference of on orbit operation time and performance of the sensor. Therefore, in order to effectively use the multi-temporal and multi angle observation data, before using the multi-source data set to synthesize the vegetation index, the algorithm designs the data quality inspection of the multi-source data set, removing the observation with large error and inconsistent observation. The verification results in the middle reaches of Heihe River show that the NDVI / EVI composite results of the combined multi temporal and multi angle observation data are in good agreement with the ground measured data (R2 = 0.89, RMSE = 0.092). In a word, the 30 m / month NDVI / EVI data set of Heihe River Basin comprehensively uses multi temporal and multi angle observation data to improve the estimation accuracy and time resolution of parameter products, so as to realize the stable standardized products from scratch and better serve the application of remote sensing data products.

2、Keywords

Theme：Vegetation coverage data,Ecological remote sensing products,Terrestrial Surface Remote Sensing
Discipline：Terrestrial Surface
Places：Heihe River Basin
Time：2014, 2011, 2012, 2013

3、Data details

1.Scale：None

2.Projection：WSG-84

3.Filesize：11622.4MB

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:2011-01-13 00:00:00+00:00--2015-01-12 00:00:00+00:00

6、Reference method

References to data:

LI Jing, ZHONG Bo, WU Shanlong, LIU Qinhuo, WU Junjun. HiWATER: 30m month compositing vegetation index (NDVI/EVI) product of Heihe River Basin (2011-2014). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.295.2016.db2016

References to articles:

Zeng YL, Li J, Liu QH, et al. An iterative BRDF/NDVI inversion algorithm based on a posteriori variance estimation of observation errors. IEEE TGRS, In Review.

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)
National High-tech R&D Program of China (863 Program)

8、Data resource provider

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