A Big Earth Data Platform for Three Poles

**Long term vegetation index dataset of the Yellow River upstream – Spot vegetation (1998-2011)**

1、Description

I. Overview
The long-term sequence China Vegetation Index dataset is mainly for the normalized vegetation index (NDVI), based on four bands synthesized every 10 days from 1 April 1998 to 31 December 2011 with a spatial resolution of 1 km. Spectral reflectance and 10-day maximized NDVI dataset.
Ⅱ. Data processing description
The VEGETATION sensor was launched by SPOT-4 in March 1998, and has received SP0T VGT data for global vegetation coverage observation since April 1998. It has a very complete and efficient image ground processing mechanism system. The VEGETATION data is mainly received by the Kiruna ground station in Sweden. The image quality monitoring center in Toulouse, France is responsible for image quality and provides related parameters (such as calibration coefficients). Finally, the image processing and archiving center of VITO Institute in Belgium Global VEGETATION data archiving and user orders. Among them, VGT-P (prototype) data products mainly provide scientific researchers with high-quality physical quantity prototype data in order to facilitate their research and development of algorithms and application models. The data undergoes strict systematic error correction and resampling into a longitude and latitude network projection, the pixel resolution is lkm, and the pixel brightness value is the reflectivity of the ground features on the top layer of the atmosphere. In addition to providing four bands of raw data, relevant auxiliary parameters such as atmospheric conditions, system information (solar zenith angle, azimuth, field of view, and reception time) and terrain data are also provided according to user needs. VGT-S (synthesis) products provide atmospheric-corrected surface reflectance data, and use multi-band synthesis techniques to obtain a normalized vegetation index (w) data set with lkm resolution. VGI-S products include the spectral reflectance and NDVI data set (s1) of four bands synthesized daily, the spectral reflectance of four bands synthesized every 10 days, and the maximum NDVI data set (S10) every 10 days to reduce cloud and The impact of BRDF, while S10 was also resampled into 4km resolution (S10.4) and 8km resolution (S10.8) datasets. VGT-S products are widely used for their high time resolution. This data set contains the spectral reflectance of four bands synthesized every 10 days and the 10-day maximized NDVI data set (S10). The pre-processing of SPOT source data includes atmospheric correction, radiation correction, and geometric correction. NDVI data with a maximum of 10 days of synthesis is generated, and the values ​​of -1 to -0.1 are set to -0.1, and then formula
YDN = (JNDVI +0.1) /0.004
Convert to a YDN value from 0 to 250.
Ⅲ. Data content description
The long-term sequence China Vegetation Index dataset is mainly for the normalized vegetation index (NDVI), based on four bands synthesized every 10 days from 1 April 1998 to 31 December 2011 with a spatial resolution of 1 km. Spectral reflectance and 10-day maximized NDVI dataset. The SPOT-VEGETATION-NDVI data set contains .zip compressed files with time resolution from April 1, 1998 to December 31, 2011. After decompression, it is an ESRI-GRID file with a scene every 10 days. The SPO-VEGETATION-NDVI data set naming rules are: v-yymmdd, where v is the abbreviation of vegetation, yymmdd represents the date of the file, and is the main identifier that distinguishes other files.
Ⅳ. Data usage description
An important feature of the Vegetation Index product is that it can be converted into leaf crown biophysical parameters. Vegetation index (VI) also plays an "intermediate variable" in the acquisition of vegetation biophysical parameters (such as foliar index LAI, green shade, fAPAR, etc.). The relationship between vegetation indices and vegetation biophysical parameters is currently being studied using globally representative ground, aircraft and satellite observation datasets. These data can be used to evaluate the performance of the VI algorithm before satellite launch, and also provide the conversion coefficient between the vegetation index product and the biophysical characteristics of the leaf crown. The use of biophysical data is part of the Vegetation Index Verification Program. Vegetation index products will play a major role in several Earth Observation System (EOS) studies and are also part of global and regional biosphere model products in recent years.

2、Keywords

Theme：vegetation index,Vegetation
Discipline：Terrestrial Surface,Others
Places：The upstream of the Yellow River
Time：2011, 1998

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：3700.0MB

4.Data format：ESRI-GRID

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.0 | - |
| west：95.0 | - | east：112.0 |
| - | south：32.0 | - |

5、Time frame:1998-05-14 02:33:00+00:00--2012-01-13 02:33:00+00:00

6、Reference method

References to data:

XUE Xian, DU Heqiang. Long term vegetation index dataset of the Yellow River upstream – Spot vegetation (1998-2011). A Big Earth Data Platform for Three Poles, doi:10.11888/Ecolo.tpdc.2709672012

References to articles:

Flemish Inst. Technological Research, Belgium, http://www.vgt.vito

7、Supporting project information

the National Basic Research Program of China

8、Data resource provider

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