A Big Earth Data Platform for Three Poles

**Lake surface area dynamics on the Tibetan Plateau (Version 1.0) (1984-2016)**

1、Description

The data set of lake dynamics on the Tibetan Plateau was mainly derived from Landsat remote sensing data. Band ratio and the threshold segmentation method were applied. The temporal coverage of the data set was from 1984 to 2016, with a temporal resolution of 5 years. It covered the whole Tibetan Plateau at a spatial resolution of 30 meters. The water body area extraction method mainly adopted the band ratio (B4/B2) or water body index to construct the classification tree. The algorithm construction considered the spatial and temporal variations of the spectral characteristics of the water body and adjusted the threshold of the decision tree by the slope and the slope aspect information of the water body. The long-term sequence satellite-borne data came from different sensors, e.g., Landsat MSS, TM, ETM+, and OLI. The minimum unit for extracting water body information was 2\*2 pixels, and all water body areas less than 0.36\*10^-2 Km² were removed. The water body information extracted by high-resolution remote sensing data and the verification of the water body checkpoint determined by visual interpretation indicated that the overall accuracy of the water body area information for the Tibetan Plateau was above 95%. The data were saved as a shape file, and projected by Albers projection, with a central meridian of 105 ° and a double standard latitude of 25 ° and 47 °.

2、Keywords

Theme：Surface Water,Remote Sensing Technology,Visible remote sensing,Lakes  
Discipline：Terrestrial Surface,Remote Sensing Technology  
Places：Tibetan Plateau   
Time：

3、Data details

1.Scale：250000

2.Projection：Albers

3.Filesize：52.39MB

4.Data format：txt

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：40.0 | - |
| west：70.0 | - | east：105.0 |
| - | south：27.0 | - |

5、Time frame:1984-01-29 00:00:00+00:00--2017-01-28 00:00:00+00:00

6、Reference method

References to data:

DU Jia, SONG Kaishan. Lake surface area dynamics on the Tibetan Plateau (Version 1.0) (1984-2016). A Big Earth Data Platform for Three Poles, doi:10.11888/Lake.tpe.0000011.file2018

References to articles:

Song, K.S., Wang, M., Du, J., Yuan, Y., Ma, J.H., Wang, M., &Mu, G.Y.(2016). Spatiotemporal Variations of Lake Surface Temperature across the Tibetan Plateau Using MODIS LST Product. Remote Sensing, 8(10), 854.

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

name: DU Jia  
unit: Northeast Institute of Geography and Agroecology,Chinese Academy of Sciences  
email: jiaqidu@iga.ac.cn  
  
name: SONG Kaishan  
unit: Northeast Institute of Geography and Agroecology,Chinese Academy of Sciences  
email: songks@iga.ac.cn