A Big Earth Data Platform for Three Poles

**An integrated dataset of daily lake surface temperature over Tibetan Plateau (LSWT\_TPv1) (1978~2017)**

1、Description

This dataset is a daily lake surface water temperature (LSWT) products of 164 lakes in Tibetan Plateau from 1978 to 2017. Firstly, we calculate the mean values of lake surface pixels based on MOD11A1 products to obtained the daily lake surface temperature series from 2000 to 2017. Secondly, we modified the air2water model to simulate the lake surface temperature continuously. The daily air temperature from meteorological stations were used as forcing data, and the lake surface temperature monitored by MOD11A1 as the model calibration and validation data. Finally, the daily lake surface temperature across Tibet Plateau from 1978 to 2017 were reconstructed. Compared with the results from remote sensing monitoring, the Nash-Sutcliffe efficiency coefficients of all lakes are higher than 0.6 with bias ranging at ±0.55℃. The dataset is suitable to analyze the long-term changes of lake surface temperature over the past decades, which is of great significance for assessing the impacts of climate warming on the water and heat balance, water quality and lake ecosystem changes on the Tibetan Plateau.

2、Keywords

Theme：Surface Water,Water temperature,Lake surface temperature,Lakes  
Discipline：Terrestrial Surface  
Places：Tibetan Plateau  
Time：Long time series, 1978-2017, Daily

3、Data details

1.Scale：None

2.Projection：

3.Filesize：40.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：39.0 | - |
| west：74.0 | - | east：103.0 |
| - | south：28.0 | - |

5、Time frame:1977-12-31 16:00:00+00:00--2017-12-30 16:00:00+00:00

6、Reference method

References to data:

ZHANG Bing , GUO Linan, WU Yanhong, ZHENG Hongxing, WEN Mengxuan . An integrated dataset of daily lake surface temperature over Tibetan Plateau (LSWT\_TPv1) (1978~2017). A Big Earth Data Platform for Three Poles, doi:10.5281/zenodo.47184372021

References to articles:

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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