A Big Earth Data Platform for Three Poles

**Qilian mountains integrated observatory network: Dataset of Heihe integrated observatory network (Phenology camera observation dataset of Arou superstation, 2018)**

1、Description

The dataset contains phenological camera observation data collected at the Arou Superstation in the midstream of the Heihe integrated observatory network from June 13 to November 16, 2018. The instrument was developed with data processed by Beijing Normal University. The phenomenon camera integrates data acquisition and data transmission functions. The camera captures high-quality data with a resolution of 1280×720 by looking-downward. The calculation of the greenness index and phenology are following 3 steps: (1) calculate the relative greenness index (GCC, Green Chromatic Coordinate, calculated by GCC=G/(R+G+B)) according to the region of interest, (2) perform gap-filling for the invalid values, filtering and smoothing, and (3) determine the key phenological parameters according to the growth curve fitting (such as the growth season start date, Peak, growth season end, etc.) There are also 3 steps for coverage data processing: (1) select images with less intense illumination, (2) divide the image into vegetation and soil, and (3) calculate the proportion of vegetation pixels in each image in the calculation area. After the time series data is extracted, the original coverage data is smoothed and filtered according to the time window specified by the user, and the filtered result is the final time series coverage. This data set includes relative greenness index (Gcc).  
Please refer to Liu et al. (2018) for sites information in the Citation section.

2、Keywords

Theme：Vegetation  
Discipline：Terrestrial Surface  
Places：the cold region hydrology experimental area, Arou Superstation, Heihe River Basin  
Time：2018

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.05MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.0473 | - |
| west：100.4643 | - | east：100.4643 |
| - | south：38.0473 | - |

5、Time frame:2018-06-29 00:00:00+00:00--2018-11-22 00:00:00+00:00

6、Reference method

References to data:

XU Ziwei, Qu Yonghua. Qilian mountains integrated observatory network: Dataset of Heihe integrated observatory network (Phenology camera observation dataset of Arou superstation, 2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Meteoro.tpdc.2707592019

References to articles:

Liu, S.M., Li, X., Xu, Z.W., Che, T., Xiao, Q., Ma, M.G., Liu, Q.H., Jin, R., Guo, J.W., Wang, L.X., Wang, W.Z., Qi, Y., Li, H.Y., Xu, T.R., Ran, Y.H., Hu, X.L., Shi, S.J., Zhu, Z.L., Tan, J.L., Zhang, Y., & Ren, Z.G. (2018). The Heihe Integrated Observatory Network: A Basin-Scale Land Surface Processes Observatory in China. Vadose Zone Journal, 17(1), 180072. doi:10.2136/vzj2018.04.0072.  
  
Che, T., Li, X., Liu, S., Li, H., Xu, Z., Tan, J., Zhang, Y., Ren, Z., Xiao, L., Deng, J., Jin, R., Ma, M., Wang, J., & Yang, X. (2019). Integrated hydrometeorological, snow and frozen-ground observations in the alpine region of the Heihe River Basin, China. Earth System Science Data, 11, 1483-1499

7、Supporting project information

Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program  
the National Natural Science Foundation of China “Key Theory and Methods for Validation of Land Surface Remote Sensing Products”

8、Data resource provider

name: XU Ziwei  
unit: Beijing Normal University  
email: xuzw@bnu.edu.cn  
  
name: Qu Yonghua  
unit:   
email: qyh@bnu.edu.cn