A Big Earth Data Platform for Three Poles

**Remote sensing products of thermal collapse in Heihe permafrost region of the Tibetan Plateau (2009-2018)**

1、Description

Global warming and human activities have led to the degradation of permafrost and the collapse of permafrost, which have seriously affected the construction of permafrost projects and the ecological environment. Based on high-resolution satellite images, the permafrost of oboling in Heihe River Basin of Qinghai Tibet Plateau is taken as the research area, and the object-oriented classification technology of machine learning is used to extract the thermal collapse information in the research area. The results show that from 2009 to 2019, the number of thermal collapse increased from 12 to 16, and the total area increased from 14718.9 square meters to 28579.5 square meters, nearly twice. The combination of high spatial resolution remote sensing and object-oriented classification method has a broad application prospect in the monitoring of thermal thawing and collapse of frozen soil.

2、Keywords

Theme：Freeze thawing,Satelite images,Frozen Ground,Terrestrial Surface Remote Sensing,DOM  
Discipline：Terrestrial Surface,Cryosphere  
Places：QT-Plateau  
Time：2009-2018

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：160.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.02093506 | - |
| west：100.87371826 | - | east：100.92590332 |
| - | south：37.99072266 | - |

5、Time frame:2009-01-07 16:00:00+00:00--2019-01-06 16:00:00+00:00

6、Reference method

References to data:

JIANG Liming. Remote sensing products of thermal collapse in Heihe permafrost region of the Tibetan Plateau (2009-2018). A Big Earth Data Platform for Three Poles, doi:10.11888/Geocry.tpdc.2701182019

References to articles:

梁林林,江利明,周志伟,陈玉兴,孙亚飞. 无人机遥感影像面向对象分类的冻土热融滑塌边界提取[J]. 国土资源遥感, 2019, 31(2): 180-186.

7、Supporting project information

CASEarth:Big Earth Data for Three Poles（grant No. XDA19070000）  
Pan-Third Pole Environment Study for a Green Silk Road-A CAS Strategic Priority A Program

8、Data resource provider

name: JIANG Liming  
unit: Institute of Geodesy and Geophysics, Chinese Academy of Sciences  
email: jlm@whigg.ac.cn