A Big Earth Data Platform for Three Poles

**The distribution map of active layer thickness in Qinghai Tibet engineering corridor (2015-2065)**

1、Description

The Qinghai-Tibet Engineering Corridor runs from Golmud to Lhasa. It passes through the core region of the Qinghai-Tibet Plateau and is an important passage connecting the interior and Tibet. The active layer thickness (ALT) is not only an important index to study the thermal state of ground in permafrost region, but also a key factor to be considered in the construction of permafrost engineering. The core of GIPL1.0 is kudryavtesv method, which takes into account the thermophysical properties of snow cover, vegetation and different soil layers. However, Yin Guoan et al. found that compared with kudryavtesv method, the accuracy of TTOP model is higher, so they improved the model in combination with freezing / thawing index. Through verification of field monitoring data, it was found that the simulation error of ALT is less than 50cm. Therefore, the ALT in the Qinghai Tibet project corridor is simulated by using the improved GIPL1.0 model, and the future ALT under the ssp2-4.5 climate change scenario is predicted.

2、Keywords

Theme：Others,Frozen Ground  
Discipline：Cryosphere  
Places：Qinghai-Tibet engineering corridor  
Time：2015-2065

3、Data details

1.Scale：None

2.Projection：WGS84

3.Filesize：3.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：37.0 | - |
| west：90.0 | - | east：95.0 |
| - | south：31.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

NIU Fujun. The distribution map of active layer thickness in Qinghai Tibet engineering corridor (2015-2065). A Big Earth Data Platform for Three Poles, doi:10.11888/Cryos.tpdc.2728192022

References to articles:

Yin, G.A., Niu, F.J., Lin, Z.J., Luo, J., & Liu, M.H. (2021). Data-driven spatiotemporal projections of shallow permafrost based on CMIP6 across the Qinghai‒Tibet Plateau at 1 km2 scale. Advances in Climate Change Research, 12, 814-827.

7、Supporting project information

CASEarth:Big Earth Data for Three Poles（grant No. XDA19070000）

8、Data resource provider

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