A Big Earth Data Platform for Three Poles

**Orographic evolution of northern Tibet shaped vegetation and plant diversity in eastern Asia**

1、Description

The growth of the Tibetan Plateau throughout the past 66 million years has profoundly affected the Asian climate, but how this unparalleled orogenesis might have driven vegetation and plant diversity changes in eastern Asia is poorly understood. We approach this question by integrating modeling results and fossil data. We show that growth of north and northeastern Tibet affects vegetation and, crucially, plant diversity in eastern Asia by altering the monsoon system. This northern Tibetan orographic change induces a precipitation increase, especially in the dry (winter) season, resulting in a transition from deciduous broadleaf vegetation to evergreen broadleaf vegetation and plant diversity increases across southeastern Asia. Further quantifying the complexity of Tibetan orographic change is critical for understanding the finer details of Asian vegetation and plant diversity evolution.  
\*: Corresponding author

2、Keywords

Theme：Paleoclimate Reconstruction  
Discipline：Palaeoenvironment  
Places：Tibetan Plateau  
Time：Miocene

3、Data details

1.Scale：None

2.Projection：

3.Filesize：50.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：45.0 | - |
| west：80.0 | - | east：100.0 |
| - | south：30.0 | - |

5、Time frame:2020-12-31 16:00:00+00:00--2021-07-01 03:59:59+00:00

6、Reference method

References to data:

SU Tao. Orographic evolution of northern Tibet shaped vegetation and plant diversity in eastern Asia. A Big Earth Data Platform for Three Poles, doi:10.11888/Paleoenv.tpdc.2720822022

References to articles:

Li, S.F., Valdes, P., Farnsworth, A., Davies-Barnard, T., Su, T., Lunt, D., Spicer, R., Liu, J., Deng, W., Huang, J., Tang, H., Ridgwell, A., Chen, L., & Zhou, Z.K. (2021). Orographic evolution of northern Tibet shaped vegetation and plant diversity in eastern Asia. Sci. Adv. 7, eabc7741.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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