A Big Earth Data Platform for Three Poles

**Deformation and cooling history of the Central Qiangtang terrane, Tibetan Plateau and its tectonic implications**

1、Description

The Qiangtang terrane preserves an important record of the growth of the Tibetan Plateau since the Mesozoic; however, its deformation and cooling history remain poorly understood. To unravel this issue, we conducted geological mapping in the Esima area and detrital apatite fission-track and (U–Th)/He analyses of the Esima–Rongtang region in the east segment of Central Qiangtang terrane. Our results indicate that the east segment underwent two stages of structural deformation and rapid cooling during 120–110 Ma and 55–38 Ma. By combining our results with those of previous studies of the deformation and cooling history in the west segment, we reconstructed the early spatial and temporal geological evolution of the Central Qiangtang terrane since the Late Jurassic–Early Cretaceous. The structural deformation and cooling of the west segment at 150–130 Ma was related to northward flat subduction of the Bangong–Nujiang oceanic slab. The structural deformation and cooling of the east segment at 120–110 Ma and the west segment at 110–70 Ma was controlled by oblique convergence between Lhasa and Qiangtang. The structural deformation and cooling of the west and east segments at 55–38 Ma was associated with northward intracontinental subduction beneath the Qiangtang terrane induced by the Indo–Asian collision.

2、Keywords

Theme：Apatite and zircon,Rocks/Minerals,collision event,Geochemistry,Tectonics,apatite  
Discipline：Solid earth  
Places：Esima  
Time：Cretaceous

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.05MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：33.1 | - |
| west：90.6 | - | east：91.9 |
| - | south：32.4 | - |

5、Time frame:None--None

6、Reference method

References to data:

HAN Zhongpeng, LI Yalin, BI Wenjun. Deformation and cooling history of the Central Qiangtang terrane, Tibetan Plateau and its tectonic implications. A Big Earth Data Platform for Three Poles, doi:10.1080/00206814.2020.17957332021

References to articles:

Bi, W. , Han, Z. , Li, Y. , Li, C. , & Ma, Z. . (2020). Deformation and cooling history of the central qiangtang terrane, tibetan plateau and its tectonic implications. International Geology Review(2), 1-17.

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

name: BI Wenjun  
unit:   
email: 554870234@qq.com  
  
name: HAN Zhongpeng  
unit:   
email: zphan@cugb.edu.cn  
  
name: LI Yalin  
unit:   
email: liyalin@cugb.edu.cn