A Big Earth Data Platform for Three Poles

**Receiver funciton, seismic station, HK results and S-wave velocity data set underneath central China across the Tibetan Plateau, the North China Craton and the South China Block (2006-2014)**

1、Description

The data include the location information of 255 seismic stations in Qinghai Tibet Plateau, North China Craton and South China block junction area, teleseismic receiver function waveform, HK result and crustal S-wave velocity inversion using receiver function (Gauss coefficient is 2.0) and surface wave. Based on the data of 30-90 degree epicentral distance and more than 5.5 earthquake events recorded by 146 fixed stations set up by China Seismological Bureau for 2 years and 109 mobile stations set up by Institute of Geology and Geophysics of Chinese Academy of Sciences for 12-18 months, the time domain iterative deconvolution method of CPS program is used to extract the radial convergence function. The results show that: the crust structure of the typical craton is still preserved in the core area of Ordos and Sichuan Basin, and the low velocity layer of the central crust of the East-West collision subduction of the North China Craton in the south of Ordos is not preserved. The lower crust of Sichuan basin may have been embedded into the crust of Qinghai Tibet Plateau along the Longmen Mountain; The West Qinling and the boundary area of Qinling Dabie orogenic belt have thick crust, low wave velocity ratio and high S-wave velocity structure. The uploaded data provide valuable data and information for others to further study the structural characteristics of the northeastern margin of the Qinghai Tibet Plateau and its adjacent areas.

2、Keywords

Theme：Receiver function,Crust mantle structure,Seismic velocity,Seismology  
Discipline：Solid earth  
Places：Joint area among the Tibetan Plateau, the North China Craton and the South China Block  
Time：2006-2008,2009-2010,2010-2012,2012-2014

3、Data details

1.Scale：None

2.Projection：

3.Filesize：1270.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.0 | - |
| west：100.0 | - | east：114.0 |
| - | south：30.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

WEI Zigen. Receiver funciton, seismic station, HK results and S-wave velocity data set underneath central China across the Tibetan Plateau, the North China Craton and the South China Block (2006-2014). A Big Earth Data Platform for Three Poles, 2021

References to articles:

Wei, Z.G., Li, Z.W., Chen, L., Chu, R.S., Wu, S.S., Ling, Y., & Zeng, Q. (2020). Crustal structure underneath central China across the Tibetan Plateau, the North China Craton, the South China Block and the Qinling-Dabie Orogen constrained by multifrequency receiver function and surface wave data[J]. Journal of Asian Earth Sciences, https://doi.org/10.1016/j.jseaes.2020.104535.

7、Supporting project information

The deep process and resource effect of major geological events in Yanshan period (2016YFC0600400)

8、Data resource provider

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