A Big Earth Data Platform for Three Poles

**Receiver function, seismic stations and crustal S-wave velocity data set in the middle-south segment of TanLu Fault zone (2000-2011)**

1、Description

The data include the location information of 154 seismic stations in the middle and southern segment of Tan Lu fault zone and its adjacent area, the teleseismic receiver function waveform and the crustal S-wave velocity inversed by receiver function (Gauss coefficient is 5.0) and surface wave. By selecting 63 fixed stations set up by China Seismological Bureau and 91 mobile stations set up by Institute of Geology and Geophysics of Chinese Academy of Sciences with observation time of one year to record 30-90 degree epicentral distance and events with magnitude greater than 5.5, the time domain iterative deconvolution method of CPS program is used to extract the radial convergence function. The results show that the Moho depth and the average VP / vs ratio of the crust in the study area mainly vary in the range of 25-38km and 1.65-1.95, respectively, and the crustal structure is roughly divided into three parts from south to north along the Cretaceous tiefuling fault and Triassic Lu'an fault and their eastward extension. The uploaded data provide valuable data and information for others to further study the structural characteristics of the Tan Lu fault zone and its adjacent areas.

2、Keywords

Theme：Receiver function,Crust mantle structure,Seismology,Seismotectonic
Discipline：Solid earth
Places：Tanlu Fault zone
Time：2000-2001 years, 2007-2009 years, 2010-2011years

3、Data details

1.Scale：None

2.Projection：

3.Filesize：243.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：37.5 | - |
| west：115.0 | - | east：121.0 |
| - | south：28.5 | - |

5、Time frame:None--None

6、Reference method

References to data:

Receiver function, seismic stations and crustal S-wave velocity data set in the middle-south segment of TanLu Fault zone (2000-2011). A Big Earth Data Platform for Three Poles, doi:10.11888/Disas.tpdc.2713432021

References to articles:

Wei, Z.G., Chu, R.S., Chen, L., & Wu, S.S. (2020). Crustal structure in the middle-southern segments of the tanlu fault zone and adjacent regions constrained by multifrequency receiver function and surface wave data. Physics of The Earth and Planetary Interiors, https://doi.org/10.1016/j.pepi.2020.106470.

7、Supporting project information

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

8、Data resource provider