A Big Earth Data Platform for Three Poles

**Receiver function, seismic station and crustal S-wave velocity in the Linfen rift (2017)**

1、Description

The data include the location information of 23 seismic stations in Linfen Rift Valley and its surrounding areas and the teleseismic receiver function waveforms. By selecting the 30-90 degree epicentral distance and more than 5.5 earthquake events recorded by 23 high-frequency mobile seismic stations deployed by Institute of Surveying and Geophysics of Chinese Academy of Sciences in November 2017 with observation duration of one month, the radial convergence function is extracted by using the time domain iterative deconvolution method of CPS program. The results show that there are low velocity bodies of different scales in the middle and lower crust of Linfen rift area, and the depth of seismogenic layer increases from ~ 25km to ~ 34km from south to north, which roughly corresponds to the bottom interface of low velocity bodies in the crust; Most of the relocation earthquakes are located in the transition zone between high and low velocity bodies, one of which has a focal depth of 32km. The m7.75 Linfen earthquake is located in the high velocity body, and the M8.0 Hongdong earthquake is located at the bottom of the high velocity body. The uploaded data provide valuable data and information for others to further study the structural characteristics of Linfen Rift Valley and its adjacent areas.

2、Keywords

Theme：Earthquake relocation,Receiver function,Crust mantle structure,Seismology  
Discipline：Solid earth  
Places：The Linfen rift  
Time：November 2017

3、Data details

1.Scale：None

2.Projection：

3.Filesize：3.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：36.81 | - |
| west：110.66 | - | east：111.94 |
| - | south：35.32 | - |

5、Time frame:None--None

6、Reference method

References to data:

WEI Zigen. Receiver function, seismic station and crustal S-wave velocity in the Linfen rift (2017). A Big Earth Data Platform for Three Poles, doi:10.11888/Disas.tpdc.2713302021

References to articles:

Wei, Z.G., Chu, R.S., Song, M.Q., Yang, X.L., Wu, S.S., Bao, F. (2020). Determination of the crustal structure and seismicity of the Linfen rift with S-wave velocity mapping. Front. Earth Sci., https://doi.org/10.1007/s11707-019-0804-6.

7、Supporting project information

Deep processes and resource effects of major geological events during the Yan Mountains period

8、Data resource provider

name: WEI Zigen  
unit:   
email: weizigen@apm.ac.cn