A Big Earth Data Platform for Three Poles

**Receiver function, seismic station and S-wave velocity data set in the Hanzhong Basin (2017)**

1、Description

The data include the location information of 17 seismic stations in Hanzhong Basin and its surrounding area, the teleseismic receiver function waveform and the crustal S-wave velocity inversed by receiver function and surface wave. Among them, each station includes two receiving functions, the Gaussian coefficient is 2.0, which are in the range of 30-60 ° And 60-90 ° The waveform superimposed within the epicentral distance. Based on the epicentral distance of 30-90 degrees and teleseismic events with magnitude greater than 5.5 recorded by 6 fixed stations set up by China Seismological Bureau for 2 years (2012-2014) and 11 mobile stations set up by Institute of Surveying and Geophysics of Chinese Academy of Sciences in December 2017, the time domain iterative deconvolution method of CPS program is used to extract the receiver function. The results show that the thickness and velocity of shallow sediments are different in different areas of Hanzhong Basin, the velocity changes gently in some areas of Moho, and the distribution of the upper and lower interfaces of focal depth (4-16 km) corresponds to the bottom layer of low velocity body and the top layer of high velocity body. The uploaded data provide valuable data and information for others to further study the structural characteristics of Hanzhong Basin and its adjacent areas.

2、Keywords

Theme：Receiver function,Crust mantle structure,Seismology,Earthquake risk  
Discipline：Solid earth  
Places：The Hanzhong Basin  
Time：2017year, 2012-2014years

3、Data details

1.Scale：None

2.Projection：

3.Filesize：1.0MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：33.29 | - |
| west：106.61 | - | east：108.27 |
| - | south：32.91 | - |

5、Time frame:None--None

6、Reference method

References to data:

WEI Zigen. Receiver function, seismic station and S-wave velocity data set in the Hanzhong Basin (2017). A Big Earth Data Platform for Three Poles, doi:10.11888/Disas.tpdc.2713332021

References to articles:

危自根, 储日升, 杨小林, 谢军, 田忠华, 凌媛, 董非非. (2019). 汉中盆地及邻区地壳结构和地震活动性研究. 地震学报, 41(4), 445-458.

7、Supporting project information

The deep process and resource effect of major geological events in Yanshan period

8、Data resource provider

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